



**CONFORMANCE TEST REPORT  
FOR  
FCC 47 CFR, Part 15 Subpart B**

**Report No.: 23-06-MAT-077-02**

Applicant: Avision Inc  
Product: Scanner  
Model: IRIScan Anywhere 6 Wifi  
Manufacturer: 1. Avision Inc.  
2. Avision (Suzhou) Co., Ltd.  
Brand Name: I.R.I.S. S.A  
Date test item received: 2022/07/06  
Date test campaign completed: 2022/09/15  
Date of issue: 2022/10/03

\*As applicant's request, it only changes model, brand name, deletes series model, after estimating, it doesn't influence tests, so all of test data are copied to report No.: 22-07-MAT-020-02.

Date of issue: 2023/7/16

**The test result only corresponds to the tested sample. It is not permitted to copy this report, in part or in full, without the permission of the test laboratory.**

*Total number of pages of this test report: 23 pages  
Total number of pages of this test photos: 05 pages*

Test Engineer <i>Wade Huang</i> Wade Huang	Checked By <i>Vincent Chang</i> Vincent Chang	Approved By <i>Eric Chen</i> Eric Chen
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**Report Version History:**

Report No.	Refer No.:	Date of issue	Difference
22-07-MAT-020-02	Initial	2022/10/03	----
23-06-MAT-077-02	22-07-MAT-020-02	2023/07/06	It's a copy report of 22-07-MAT-020-02 which difference is changing model from FF-2111B to IRIScan Anywhere 6 Wifi, changing brand name from Avision to I.R.I.S. S.A, deleting series model, others are the same with 22-07-MAT-020-02.

## 1 GENERAL INFORMATION

Applicant	: Avision Inc
Address	: No. 20, Creation Rd. 1, Science-Based Industrial Park, Hsinchu 300, Taiwan
Manufacturer	: 1. Avision Inc. 2. Avision (Suzhou) Co., Ltd.
Address	: 1. No. 20, Creation Rd. 1, Science-Based Industrial Park, Hsinchu 300, Taiwan 2. No. 9, YangTai Road, Suzhou Industrial Park, Suzhou, Jiangsu Province, P.R. China
EUT	: Scanner
Brand Name	: I.R.I.S. S.A
Model No.	: IRIScan Anywhere 6 Wifi
Test Standard	: FCC 47 CFR, Part 15 Subpart B (2020) ANSI C63.4:2014/ANSI C63.4a-2017
Regulations Applied	: FCC 47 CFR, Part 15 Subpart B (2020)
Test Specifications	: Class B

The testing described in this report has been carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This testing is not intended to believe the sellers from their legal and/or contractual obligations.

The compliance test is only certified for the test equipment and the results of the testing report relate only to the item tested. The compliance test of this report was conducted in accordance with the appropriate standards. When the EMC measurement uncertainty can meet the requirements of CISPR 16-4-2 standard, it is not included in the verification of test result. It's not intention to assure the quality and performance of the product.

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This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Laboratory Introduction: Taiwan Testing and Certification Center is recognized, filed and mutual recognition arrangement as following:

- ① ISO/IEC 17025 : TAF(0371), NVLAP(Lab code: 200133-0), CBTL(TÜV SÜD)
- ② Recognized : BSMI, NCC, FCC(TW1112), ISED( Industry Canada Site # 2949A-2)
- ③ Filing : VCCI (C-13518, R-13177, G-10098, T-11682)
- ④ MRA : Australia, New Zealand, Singapore

## 2 GENERAL SPECIFICATION

### 2.1 For Unintentional Radiators Frequency Range

For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

### 2.2 Description of EUT:

22-07-MAT-020-02: The two models: FF-2111B, ScanQ-SW are just marketing purposes, and the main test model is ScanQ-SW.

23-06-MAT-077-02: copy report.

### 2.3 Related Information of EUT:

EUT Rating (from USB port) : 5Vdc from NB

Test Rating : 120Vac, 60Hz

Power Line :  Nonshielded  Shielded  None , length: 1.8 m

LAN Cable(CAT-5e) :  Nonshielded  Shielded  None , length: \_\_\_m

\* For more detailed features, please refer to *User's Manual*.

### 2.4 Description of test mode:

The EUT was pretest and final tested under the following mode:

	Test Mode	Pretest	Final
Mode 1	USB Scan	V	V
Mode 2	Wi-Fi	V	---

\* The voltage of power supply is full range voltage, the pretest mode tests at AC 230V/50Hz and the worst case mode is selected by its manufacturer to perform all tests at AC 120V/60Hz.

**2.5 Tested Peripheral:**

The EUT connected with the following peripheral devices.

Following peripheral devices and interface cables were connected during the measurement:

The Table of peripheral devices and interface cables

Product	Manufacturer	Model No.	I/O Cable
Notebook	Dell	Vostro 3300	1.5m, Shielded USB Cable
Adapter	Dell	LA90PE1-01	1.8m, Unshielded Power Line

**2.6 Deviation Record:**

(If any deviation from additions to or exclusions from test method must be stated)

N/A

**2.7 Modification Record:**

No modifications were required. (That is the EUT complied with the requirement as tested.)

**2.8 Test Methodology**

Both conducted and radiated emissions were performed according to the procedures in ANSI C63.4.

**2.9 Test Facility**

The Semi-Anechoic Chamber and conducted measurement facility used to collect the radiated and conducted data are located inside the Building at No.8, Lane 29, Wenming Rd., Guishan Dist., Taoyuan City 333, Taiwan, R.O.C.

This site has been accreditation as a FCC filing site.

**2.10 The Worst Case Mode and EUT Components for test:**

**2.10.1 Operating Conditions of the EUT.**

**Refer to ANSI C63.4:**

The EUT and accessories shall be operated at the rated (normal) operating voltage , operating temperature, and typical load conditions – mechanical,electrical,or both – for which they are designed . Loads may be actual or simulated as described in the individual equipment equipments. It may be necessary to develop a set of explicit requirements specifying the test conditions , EUT operation ,and so on , to be used in testing a specific EUT or class of EUTs for radio-noise emissions. Such requirements shall be documented for the EUT and may be used in determining compliance with the limits.The EUT shall be operated to ensure that all the functions are exercised (software,etc.): for example ,see 11.2 on information technology equipment (ITE). If software is used to exercise the EUT , then a description and all identifiers (e.g., model/issue name / number and revision number) of the specific operating software shall be included in the test report to ensure reproducible test results.

Note:Clause 11-Measurement of ITE. Clause 12.3-Measurement of TV interface devices.

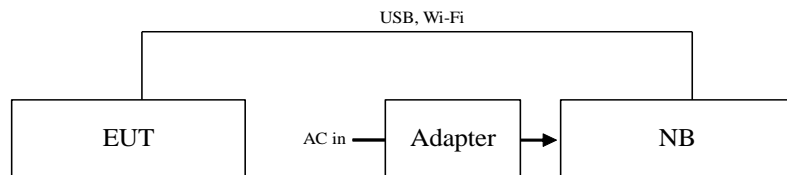
**Refer to FCC 47 CFR, Part 15 Subpart B (2020):**

Section 15.5 – General conditions of operation.

**Operating Conditions of the EUT : Setup Table**

1	Block Diagram please see the FIG as shown below
2	Turn on the EUT and peripheral power
3	Connect EUT to NB to execute USB Scan and Wi-Fi function.
4	Repeat the step 1 to step 3.

**2.10.2 Testing Setup Block Diagram**



### **3 PROVISIONS APPLICABLE**

#### **3.1 Definition**

**Unintentional Radiator:**

A device that intentionally generates radio frequency energy for use within the device, or that sends radio frequency signals by conduction to associated equipment via connecting wiring, but which is not intended to emit RF energy by radiation or induction.

**Class A Digital Device:**

A digital device that is marketed for use in a commercial, industrial or business environment; exclusive of a device which is marketed for use by the general public or is intended to be used in the home.

**Class B Digital Device:**

A digital device that is marketed for use in a residential environment notwithstanding use in commercial, business and industrial environments. Examples of such devices include, but are not limited to, personal computers, calculators, and similar electronic devices that are marketed for use by the general public.

Note: The responsible party may also qualify a device intended to be marketed in a commercial, business or industrial environment as a Class B device, and in fact is encouraged to do so, provided the device complies with the technical specifications for a Class B digital device. In the event that a particular type of device has been found to repeatedly cause harmful interference to radio communications, the Commission may classify such a digital device as a Class B digital device, regardless of its intended use.



### 3.2 Requirement for Compliance

#### (1) Conducted Emission Requirement

For unintentional device, according to **FCC§15.107(b)** Line Conducted Emission Limits class A is as following:

Frequency MHz	Quasi Peak dBµV	Average dBµV
0.15 - 0.5	79	66
0.5 - 30.0	73	60

For unintentional device, according to **FCC§15.107(a)** Line Conducted Emission Limits class B is as following:

Frequency MHz	Quasi Peak dBµV	Average dBµV
0.15 - 0.5	66-56	56-46
0.5 - 5.0	56	46
5.0 - 30.0	60	50

#### (2) Radiated Emission Requirement

For unintentional device, according to **FCC §15.109(b)**, the field strength of radiated emissions from class A unintentional radiators at a distance of 10 meters shall not exceed the following values: (Above 1G - Distance 1/ Distance 2 = Limit 2/ Limit 1)

Frequency MHz	Distance Meters	Radiated µV/m	Radiated dBµV/m
30 - 88	10	90	39.08
88 - 216	10	150	43.52
216 - 960	10	210	46.44
above 960	10	300	49.54

Frequency MHz	Distance Meters	Radiated(PK) dBµV/m	Radiated(AV) dBµV/m
above 1G-18G	3	80.0	60.0

For unintentional device, according to **CISPR 22** Radiated Emission Limits class A is as following:

Frequency MHz	Distance Meters	Radiated dBµV/m
30 to 230	10	40
230 to 1000	10	47

For unintentional device, according to **FCC §15.109(a)**, except for Class A digital devices, the field strength of radiated emissions at a distance of 3 meters shall not exceed the following values: (Distance 1/ Distance 2 = Limit 2/ Limit 1)

Frequency MHz	Distance Meters	Radiated μV/m	Radiated dBμV/m
30 - 88	3	100	40.00
88 - 216	3	150	43.52
216 - 960	3	200	46.02
above 960	3	500	53.97

Frequency MHz	Distance Meters	Radiated(PK) dBμV/m	Radiated(AV) dBμV/m
above 1G-18G	3	74	54

For unintentional device, according to **CISPR 22 Radiated Emission Limits class B** is as following:

Frequency MHz	Distance Meters	Radiated dBμV/m
30 to 230	10	30
230 to 1000	10	37

### 3.3 Labelling Requirement

The device shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### 3.4 User Information

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

**(a)Class A:**

For a Class A digital device or peripheral , the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note:

This equipment has been tested and found to comply with the limits for a Class A digital device , pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commerical environment. This equipment generates ,uses,and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual,may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**(b)Class B:**

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

**(c)**The provisions of paragraphs (a) and (b) do not apply to digital devices exempted from the technical standards under the provisions of Section 15.103.

**(d)**For systems incorporating several digital devices , the statement shown in paragraph(a) or (b) needs to be contained only in the instruction manual for the main control unit.

**(e)**In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the internet, the information required by this section me be included in the manual in that alternative form ,provided the user can reasonably be expected to have the capability to access information in that form.

## 4 SUMMARY OF TEST RESULTS

### 4.1 Emissions:

#### 4.1.1 Conducted Emissions

■-PASS

QP values is preferred to list (worst case)here: -22.27 dB at 0.270 MHz  
(L1)

QP values is preferred to list (worst case)here: -19.79 dB at 2.382 MHz  
(N)

#### 4.1.2 Radiated Emissions

■-PASS

QP values is preferred to list (worst case)here: -10.07 dB at 107.72 MHz  
(Horizontal 30MHz~1GHz)

QP values is preferred to list (worst case)here: -6.47 dB at 953.37 MHz  
(Vertical 30MHz~1GHz)

AVG values is preferred to list (worst case)here: -10.62 dB at 17790.32 MHz  
(Horizontal 1GHz~18GHz)

AVG values is preferred to list (worst case)here: -10.47 dB at 17800.67 MHz  
(Vertical 1GHz~18GHz)

### 4.2 Applied Level:

Manufacturer level requirements:

Applied Level			
Emission Test Standard	Test Item	Test Result	Applied Level and M.U.
<b>FCC 47 CFR, Part 15 Subpart B §15.109</b>	Radiated Emission (RE05-10M 1F-N5)	PASS	Class B 30M-200MHz(H): ±4.62 dB 200M-1GHz(H): ±4.71 dB 30M-200MHz(V): ± 4.59 dB 200M-1GHz(V): ± 4.68 dB 1G-6GHz(H): ±5.07 dB 1G-6GHz(V): ±5.16 dB 6G-18GHz(H): ±4.92 dB 6G-18GHz(V): ± 4.87 dB
<b>FCC 47 CFR, Part 15 Subpart B §15.107</b>	Conducted Emission (CE04-10M 2F)	PASS	Class B 150k-30MHz,ENV216 LISN: ±3.04 dB

Note : Measurement uncertainty U=±X . Means the expanded measure uncertainty U=±X , the coverage factor k=2, approximately a 95% level of confidence.

## 5 RADIATED EMISSION MEASUREMENT

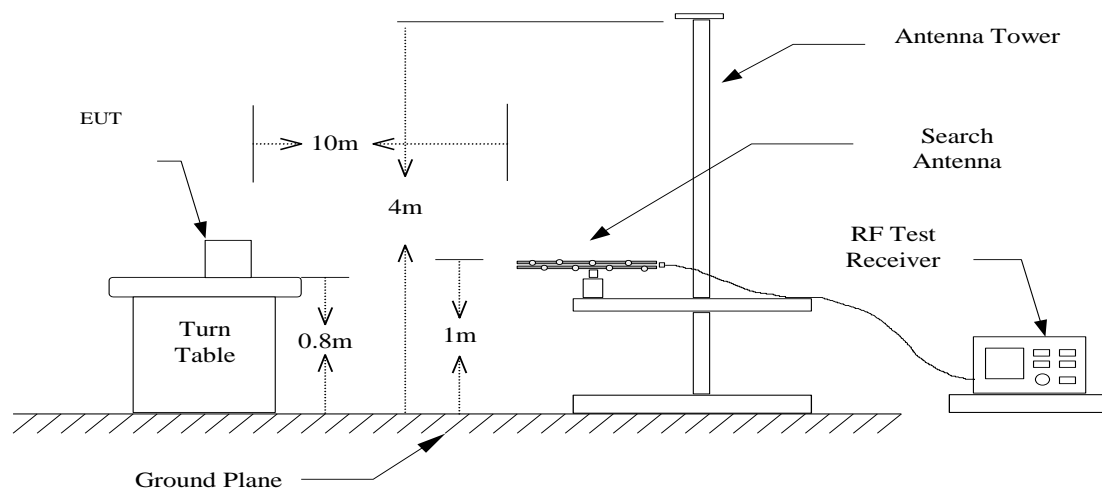
### 5.1 Applicable Standard

For unintentional radiator digital devices, the radiated emission shall comply with §15.109.

### 5.2 Measurement Procedure (Below 1GHz)

- (1). Setup the configuration per figure 1.
- (2). For emission frequencies measured below 1 GHz, a pre-scan is performed in a semi-anechoic chamber to determine the accurate frequencies of higher emissions then each selected frequency is precisely measured.
- (3). The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that the highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.
- (4). Repeat step 3 until all frequencies need to be measured were complete.
- (5). Repeat step 4 with search antenna in vertical polarized orientations.
- (6). Check the frequency of the highest emission with varying the placement of cables associated with EUT to obtain the worse case and record the result.

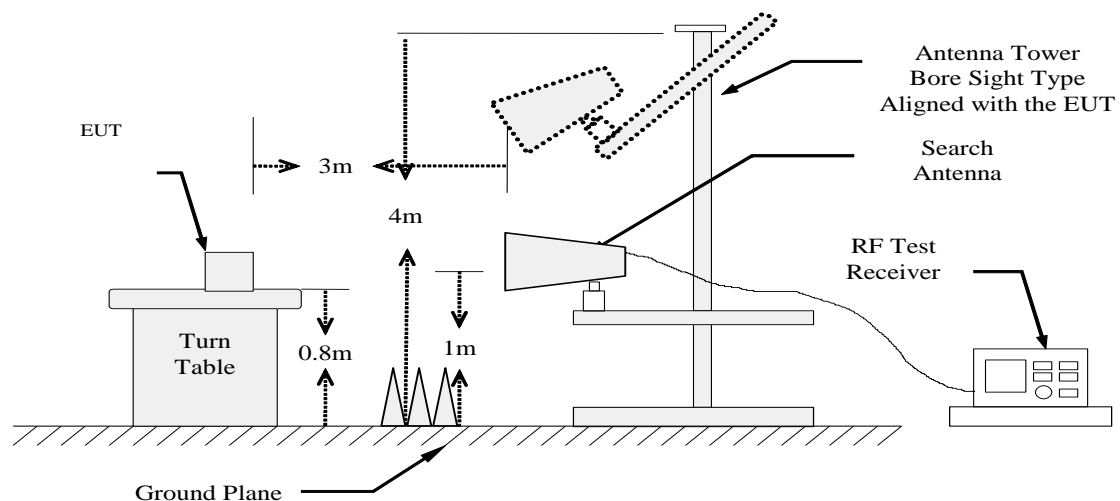
**Figure 1: Frequencies measured below 1 GHz configuration**



### 5.3 Measurement Procedure (Above 1GHz)

- (1). Setup the configuration per figure 2.
- (2). For emission frequencies measured above 1 GHz, a pre-scan is performed in a semi-anechoic chamber to determine the accurate frequencies of higher emissions then each selected frequency is precisely measured.
- (3). The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0 ° to 360 ° with a speed as slow as possible, and keep the azimuth that the highest emission is indicated on the spectrum analyzer. Vary the antenna position again and record the highest value as a final reading. A RF test receiver is also used to confirm emissions measured.
- (4). Repeat step 3 until all frequencies need to be measured were complete.
- (5). Repeat step 4 with search antenna in vertical polarized orientations.
- (6). Check the frequency of the highest emission with varying the placement of cables associated with EUT to obtain the worse case and record the result.

**Figure 2: Frequencies measured above 1 GHz configuration**



### 5.4 Measuring Instrument

The following instrument are used for radiated emissions measurement:

Below 1G

Item	Name	Manufacturer	Model	ID(SN)	Calibration Date	Recommended Recal. Date
1	EMI Receiver	R&S	ESU(20Hz~40 GHz)	13054416-002(100211)	Jul.21,2022	Jul.20,2023
2	EMI Receiver	R&S	ESR7	13054424-003	Aug.26,2022	Aug.25,2023
3	Tri log Broadband Antenna	SCHWARZBECK	VULB9168	13057328-001 (1082 & AT-1082)	Nov.11,2021	Nov.10,2022
4	Tri log Broadband Antenna	SCHWARZBECK	VULB9168	13057328-002 (1083 & AT-1083)	Oct.15,2021	Oct.14,2022
5	Amplifier	EMCI	EMC9135	13052927-002	Oct.14,2021	Oct.13,2022
6	Amplifier	EMCI	EMC9135	13052927-001	Oct.14,2021	Oct.13,2022
7	Control Computer	DELL	INSPIRON 3881	13084033-001	N/A	N/A
8	Software	FARAD	EZ-EMC	EZEMCN5	N/A	N/A

Above 1G

Item	Name	Manufacturer	Model	ID(SN)	Calibration Date	Recommended Recal. Date
1	Horn Antenna	ETS-LINDGREN	3117	13059211-001	Feb.24,2022	Feb.23,2023
2	EMI Receiver	R&S	ESU(20Hz~40GHz)	13054416-002(100211)	Jul.21,2022	Jul.20,2023
3	Preamplifier	Agilent	8449B	13040719-001 (3008A02636)	Sep.09,2021	Sep.08,2022
4	Control Computer	DELL	INSPIRO N 3881	13084033-001	N/A	N/A
5	Software	FARAD	EZ-EMC	EZEMCN5	N/A	N/A

Note: The standards used to perform this calibration are traceable to NML/ROC, NIST/USA and NPL/UK.

Measuring instrument setup in measured frequency band when specified detector function is used:

Frequency Band (MHz)	Instrument	Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	RF Test Receiver	Quasi-Peak	120 kHz	300 kHz
	Spectrum Analyzer	Peak	120 kHz	300 kHz
1GHz to 18GHz	Spectrum Analyzer	Average	1MHz	100Hz or 10Hz
	Spectrum Analyzer	Peak	1MHz	1MHz

### 5.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor, High Pass Filter Loss and Cable Loss, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation calculation is as follows:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

where

$$\text{Corrected Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

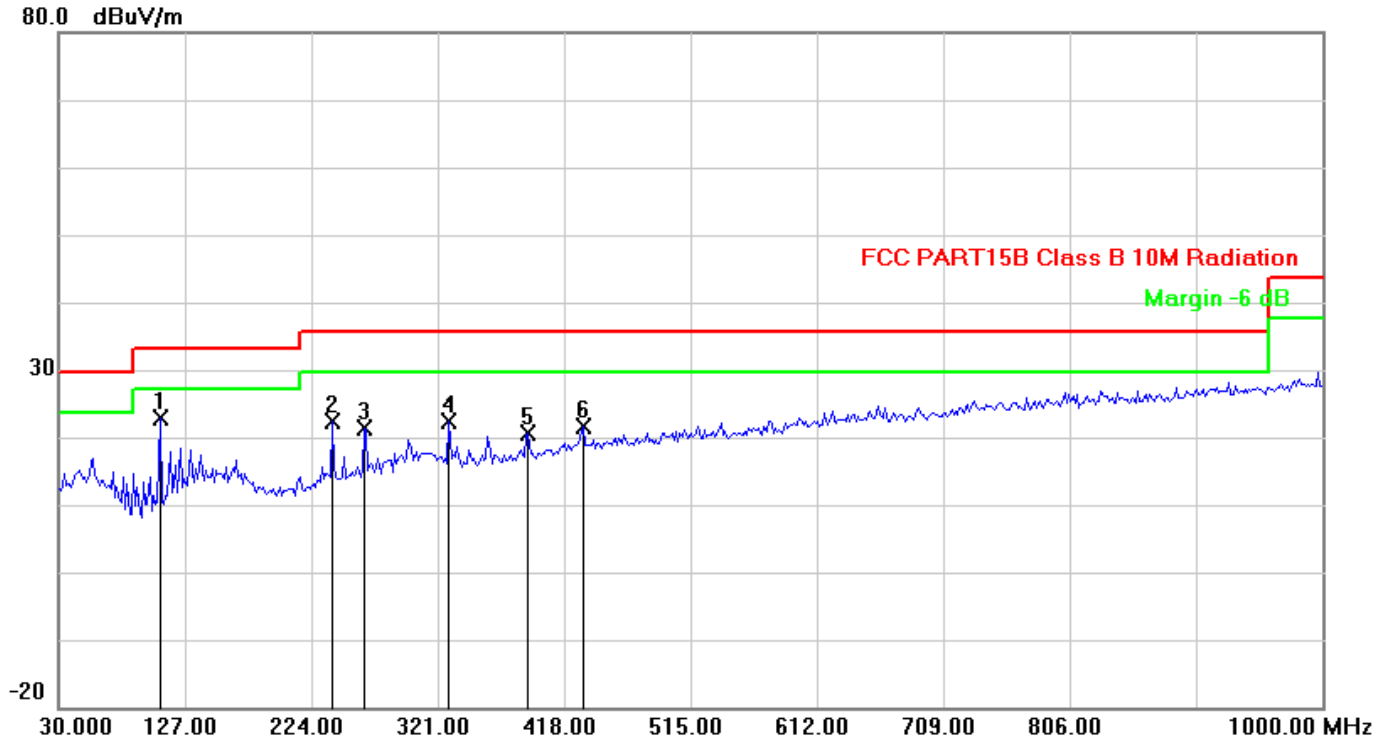
**5.6 Radiated Emission Data**

**5.6.1 Radiated Emissions Test Data:**

File: 22-07-MAT-020 Data: #12

Date: 2022/8/31  
Time: PM 02:05:00

Temperature: 26 °C  
Humidity: 60 %



Site: RE05-10M 1F-N5  
Condition: FCC PART15B Class B 10M Radiation  
EUT: Scanner  
Model: ScanQ-SW  
Test Mode: RE-USB FCC  
Note:

Polarization: Horizontal  
Power: AC 120V/60Hz  
Distance: 10m  
Operator: Wade

No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Comment
*1	107.72	42.94	QP	-19.95	22.99	33.06	-10.07	355	360	
2	239.86	39.17	QP	-16.90	22.27	35.56	-13.29	397	360	
3	264.73	37.50	QP	-16.02	21.48	35.56	-14.08	300	256	
4	330.02	35.76	QP	-13.45	22.31	35.56	-13.25	397	139	
5	390.64	32.63	QP	-11.92	20.71	35.56	-14.85	300	359	
6	432.61	32.32	QP	-10.61	21.71	35.56	-13.85	300	359	

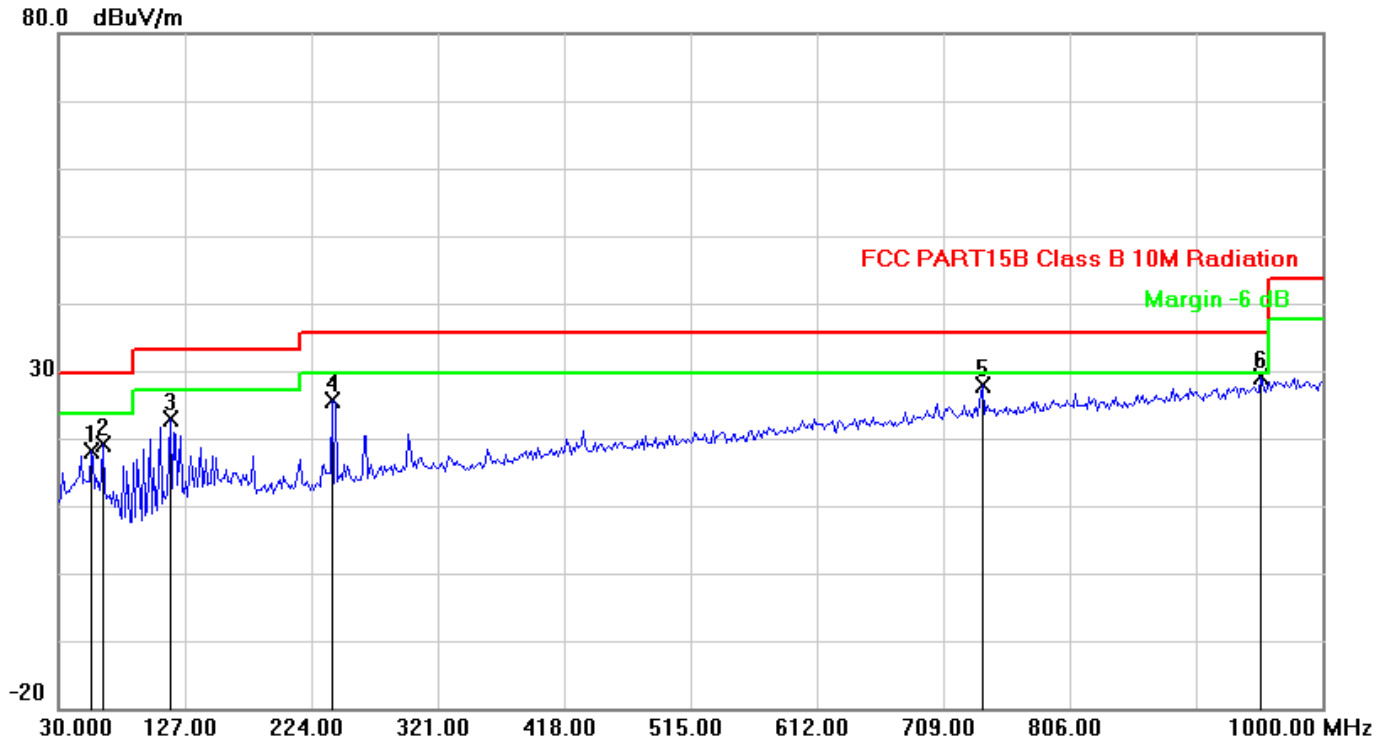
- Notes:
- 1) Place of Measurement: Measuring site of the ETC (RE05 – 10M 1F – N5)
  - 2) Measurement Distance: 10 m
  - 3) Height of table on which the EUT was placed: 0.8 m
  - 4) Height of Receiving Antenna: 1 - 4 m



File: 22-07-MAT-020 Data: #11

Date: 2022/8/31  
Time: PM 02:04:59

Temperature: 26 °C  
Humidity: 60 %



Site: RE05-10M 1F-N5  
 Condition: FCC PART15B Class B 10M Radiation  
 EUT: Scanner  
 Model: ScanQ-SW  
 Test Mode: RE-USB FCC  
 Note:

Polarization: Vertical  
 Power: AC 120V/60Hz  
 Distance: 10m  
 Operator: Wade

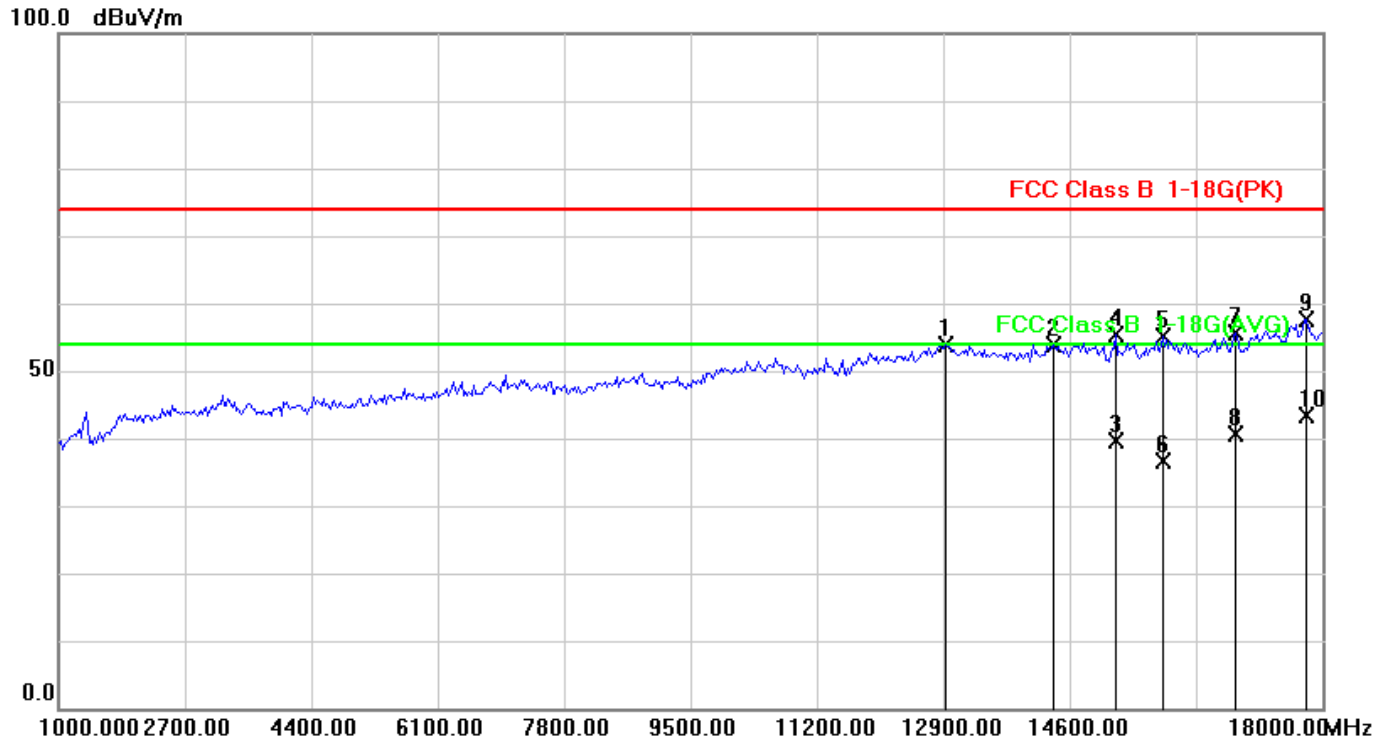
No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Comment
1	54.87	35.32	QP	-17.21	18.11	29.54	-11.43	200	0	
2	64.20	37.37	QP	-18.23	19.14	29.54	-10.40	102	67	
3	115.50	42.54	QP	-19.61	22.93	33.06	-10.13	102	139	
4	239.86	42.86	QP	-17.16	25.70	35.56	-9.86	102	319	
5	738.85	33.31	QP	-5.48	27.83	35.56	-7.73	102	67	
*6	953.37	31.77	QP	-2.68	29.09	35.56	-6.47	102	0	

- Notes:
- 1) Place of Measurement: Measuring site of the ETC (RE05 – 10M 1F – N5)
  - 2) Measurement Distance: 10 m
  - 3) Height of table on which the EUT was placed: 0.8 m
  - 4) Height of Receiving Antenna: 1 - 4 m

File: 22-07-MAT-020 Data: #6

Date: 2022/8/20  
Time: PM 03:23:14

Temperature: 26 °C  
Humidity: 60 %



Site: RE05-10M 1F-N5  
 Condition: FCC Class B 1-18G(PK)  
 EUT: Scanner  
 Model: ScanQ-SW  
 Test Mode: RE1G-USB FCC  
 Note:

Polarization: Horizontal  
 Power: AC 120V/60Hz  
 Distance: 3m  
 Operator: Wade

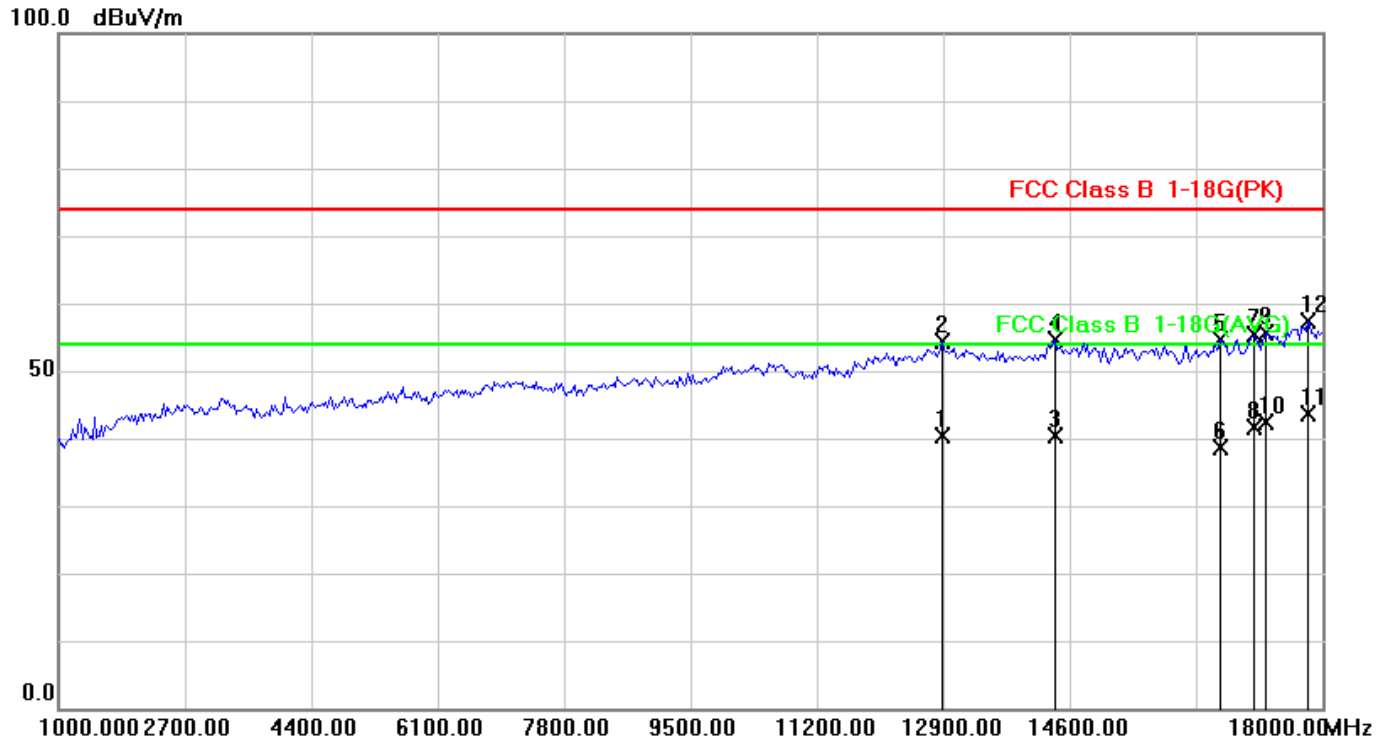
No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Comment
1	12932.69	42.79	peak	11.16	53.95	74.00	-20.05	101	0	
2	14376.60	42.45	peak	11.52	53.97	74.00	-20.03	101	92	
3	15212.89	28.02	AVG	11.55	39.57	54.00	-14.43	101	125	
4	15221.15	43.74	peak	11.53	55.27	74.00	-18.73	101	125	
5	15847.76	43.09	peak	12.05	55.14	74.00	-18.86	101	264	
6	15856.73	24.69	AVG	12.06	36.75	54.00	-17.25	101	264	
7	16828.53	41.14	peak	14.40	55.54	74.00	-18.46	101	92	
8	16837.82	26.35	AVG	14.40	40.75	54.00	-13.25	101	92	
9	17782.05	43.29	peak	14.27	57.56	74.00	-16.44	196	109	
*10	17790.32	29.10	AVG	14.28	43.38	54.00	-10.62	196	109	

Notes: 1) Place of Measurement: Measuring site of the ETC (RE05 – 10M 1F – N5)  
 2) Measurement Distance: 3 m  
 3) Height of table on which the EUT was placed: 0.8 m  
 4) Height of Receiving Antenna: 1 - 4 m

File: 22-07-MAT-020 Data: #5

Date: 2022/8/20  
Time: PM 03:19:15

Temperature: 26 °C  
Humidity: 60 %



Site:	RE05-10M 1F-N5	Polarization:	Vertical
Condition:	FCC Class B 1-18G(PK)	Power:	AC 120V/60Hz
EUT:	Scanner	Distance:	3m
Model:	ScanQ-SW	Operator:	Wade
Test Mode:	RE1G-USB FCC		
Note:			

No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Comment
1	12875.45	29.16	AVG	11.10	40.26	54.00	-13.74	102	154	
2	12878.20	43.38	peak	11.10	54.48	74.00	-19.52	102	154	
3	14394.87	28.78	AVG	11.51	40.29	54.00	-13.71	196	301	
4	14403.85	43.14	peak	11.51	54.65	74.00	-19.35	196	301	
5	16637.82	40.90	peak	13.81	54.71	74.00	-19.29	102	359	
6	16646.79	24.65	AVG	13.86	38.51	54.00	-15.49	102	359	
7	17073.72	40.95	peak	14.53	55.48	74.00	-18.52	102	326	
8	17083.72	27.20	AVG	14.53	41.73	54.00	-12.27	102	326	
9	17237.18	41.34	peak	14.31	55.65	74.00	-18.35	102	146	
10	17243.40	28.19	AVG	14.29	42.48	54.00	-11.52	102	146	
*11	17800.67	29.23	AVG	14.30	43.53	54.00	-10.47	196	75	
12	17809.29	43.11	peak	14.34	57.45	74.00	-16.55	196	75	

- Notes:
- 1) Place of Measurement: Measuring site of the ETC (RE05 – 10M 1F – N5)
  - 2) Measurement Distance: 3 m
  - 3) Height of table on which the EUT was placed: 0.8 m
  - 4) Height of Receiving Antenna: 1 - 4 m

## 6 CONDUCTED EMISSION MEASUREMENT

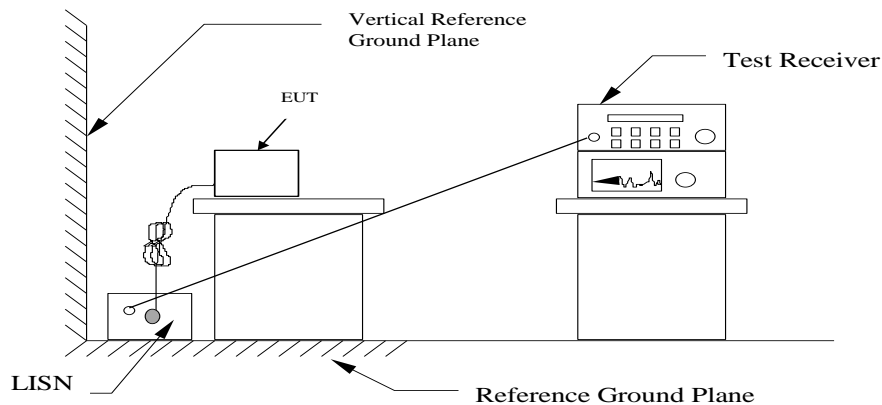
### 6.1 Applicable Standard

For unintentional digital devices, Line Conducted Emission Limits are in accordance to §15.107.

### 6.2 Measurement Procedure

- (1). Setup the configuration per figure 3.
- (2). A preliminary scan with a spectrum monitor is performed to identify the frequency of emission that has the highest amplitude relative to the limit by operating the EUT in selected modes of operation, typical cable positions, and with a typical system configuration.
- (3). Record the 4 to 8 highest emissions relative to the limit.
- (4). Measure each frequency obtained from step 3 by a test receiver set on quasi peak detector function, and then record the accuracy frequency and emission level. If all emissions measured in the specified band are attenuated more than 20 dB from the limit, this step would be ignored, and the peak detector function would be used.
- (5). Confirm the highest emissions with variation of the EUT cable configuration and record the final data.
- (6). Repeat all above procedures on measuring each operation mode of EUT.

**Figure 3: Conducted emissions measurement configuration**



### 6.3 Conducted Measurement Equipment

The following test equipment are used during the conducted test.

Item	Name	Manufacturer	Model	ID(SN)	Calibration Date	Recommended Recal. Date
1	EMI Receiver	R&S	ESCI	13054418-001 (100941)	Nov.05,2021	Nov.04,2022
2	V-LISN	R&S	ENV216	13057719-001 (101029)	May.30,2022	May.29,2023
3	V-LISN	R&S	ENV216	13057719-002 (101030)	Mar.11,2022	Mar.10,2023
4	Control Computer	Lemel	WLIEG31G8CP	13080462-004	N/A	N/A
5	Software	FARAD	EZ-EMC	EZEMCCE04	N/A	N/A

Note: The standards used to perform this calibration are traceable to NML/ROC and NIST/USA.

### 6.4 Result Data Calculation

The result data is calculated by adding the LISN Factor to the measured reading. The basic equation with a sample calculation is as follows:

$$RESULT = READING + LISN FACTOR$$

Assume a receiver reading of 22.5 dBuV is obtained, and LISN Factor is 0.1 dB, then the total of field strength is 22.6 dBuV.

$$RESULT=22.5+0.1=22.6dBuV$$

$$\begin{aligned} \text{Level in V} &= \text{Common Antilogarithm}[(22.6 \text{ dBuV})/20] \\ &= 13.48 \text{ uV} \end{aligned}$$

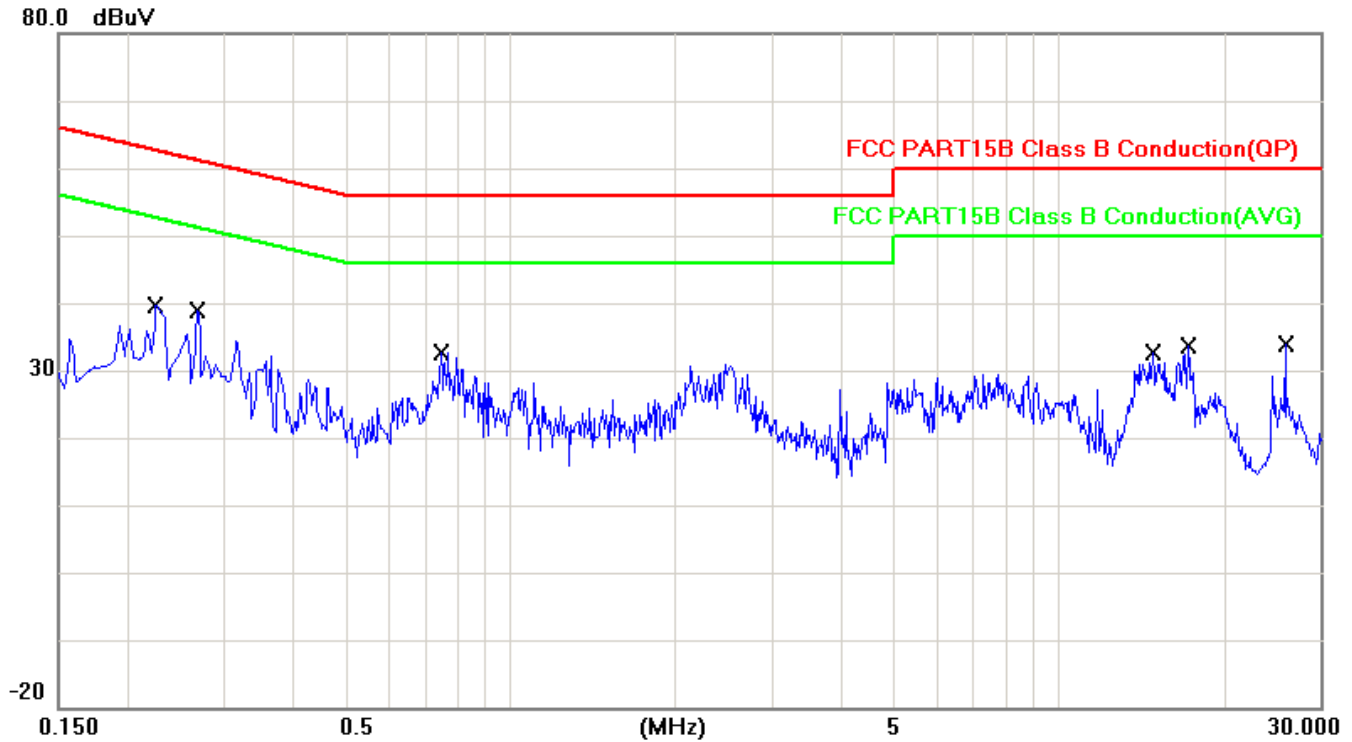
## 6.5 Conducted Emission Data

### 6.5.1 Conducted Emissions Test Data:

File: 22-07-MAT-020 Data: #5

Date: 2022/8/16  
Time: AM 10:42:28

Temperature: 26 °C  
Humidity: 53 %



Site: CE04-10M 2F  
Condition: FCC PART15B Class B Conduction(QP)  
EUT: Scanner  
Model: ScanQ-SW  
Test Mode: CE-USB FCC  
Note:

Phase: L1  
Power: AC 120V/60Hz  
Operator: Wade

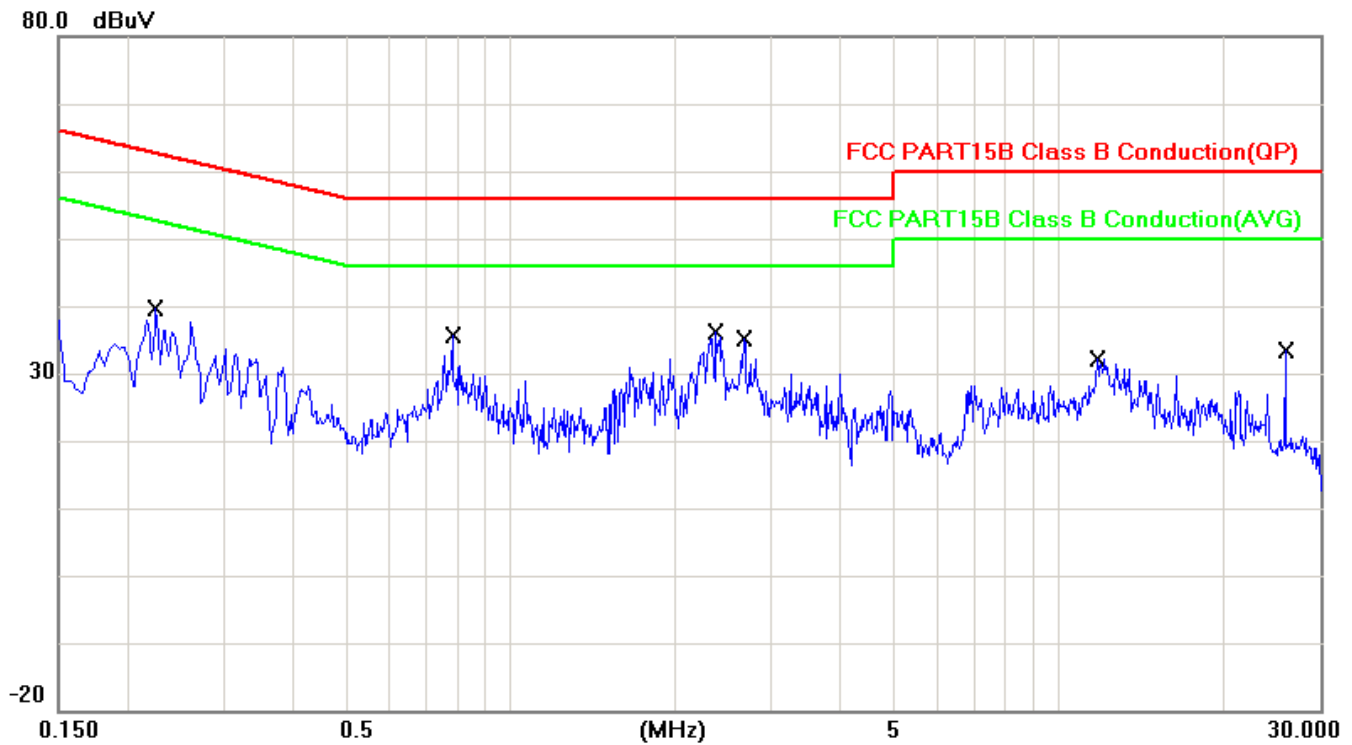
No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
1	0.226	30.04	QP	9.62	39.66	62.60	-22.94	
*2	0.270	29.23	QP	9.62	38.85	61.12	-22.27	
3	0.750	22.90	QP	9.64	32.54	56.00	-23.46	
4	14.874	22.76	QP	9.86	32.62	60.00	-27.38	
5	17.282	23.80	QP	9.87	33.67	60.00	-26.33	
6	25.870	23.92	QP	9.87	33.79	60.00	-26.21	

Notes: 1) Place of measurement: EMC LAB. of the ETC (CE04 – 10M 2F)  
2) The EUT was placed 0.8m above reference ground plane.

File: 22-07-MAT-020 Data: #6

Date: 2022/8/16  
Time: AM 10:43:14

Temperature: 26 °C  
Humidity: 53 %



Site:	CE04-10M 2F	Phase:	N
Condition:	FCC PART15B Class B Conduction(QP)	Power:	AC 120V/60Hz
EUT:	Scanner	Operator:	Wade
Model:	ScanQ-SW		
Test Mode:	CE-USB FCC		
Note:			

No.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
1	0.226	30.08	QP	9.62	39.70	62.60	-22.90	
2	0.786	25.95	QP	9.64	35.59	56.00	-20.41	
*3	2.382	26.52	QP	9.69	36.21	56.00	-19.79	
4	2.670	25.38	QP	9.70	35.08	56.00	-20.92	
5	11.758	22.23	QP	9.86	32.09	60.00	-27.91	
6	25.870	23.30	QP	10.00	33.30	60.00	-26.70	

Notes: 1) Place of measurement: EMC LAB. of the ETC (CE04 – 10M 2F)  
 2) The EUT was placed 0.8m above reference ground plane.

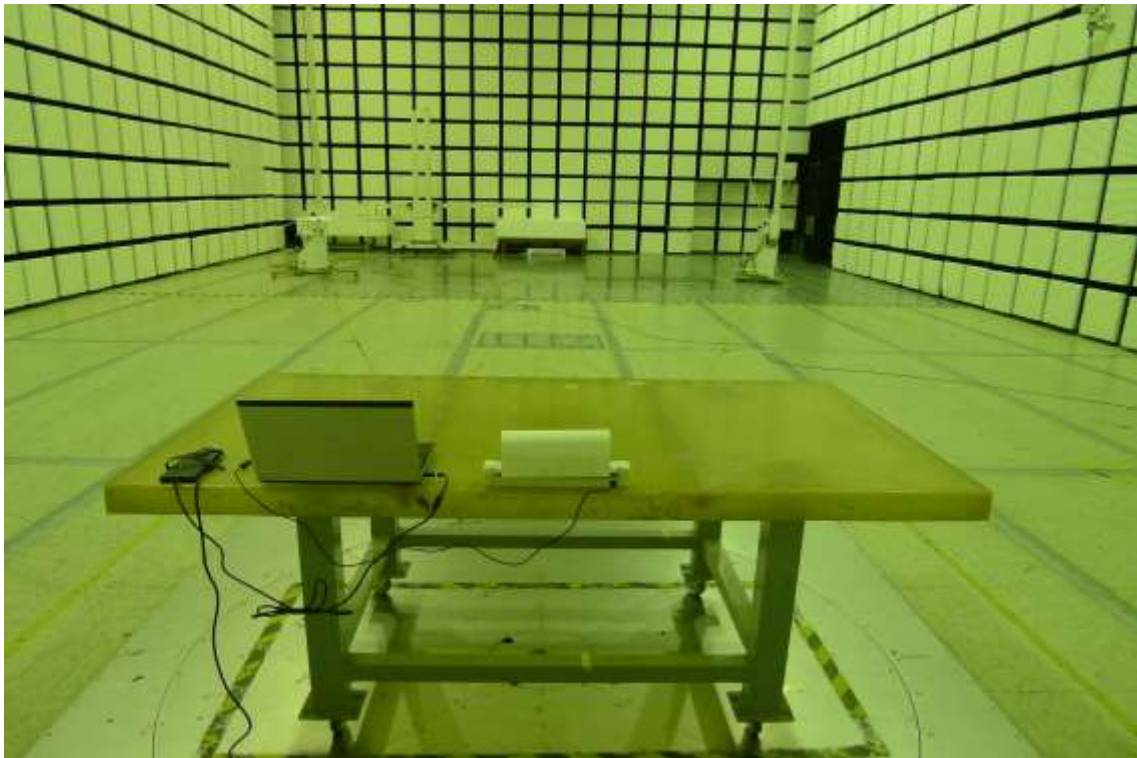
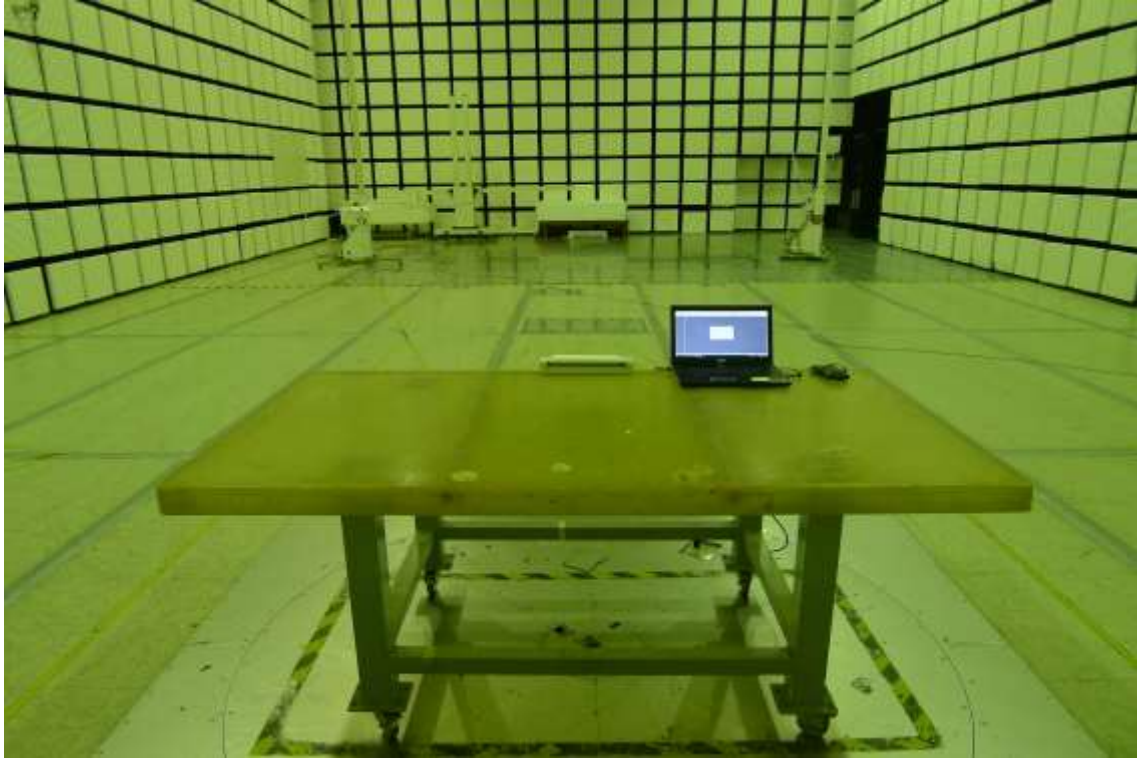
**ANNEX A: PHOTOS**

**1. Conducted Emissions Test Setup Photos**

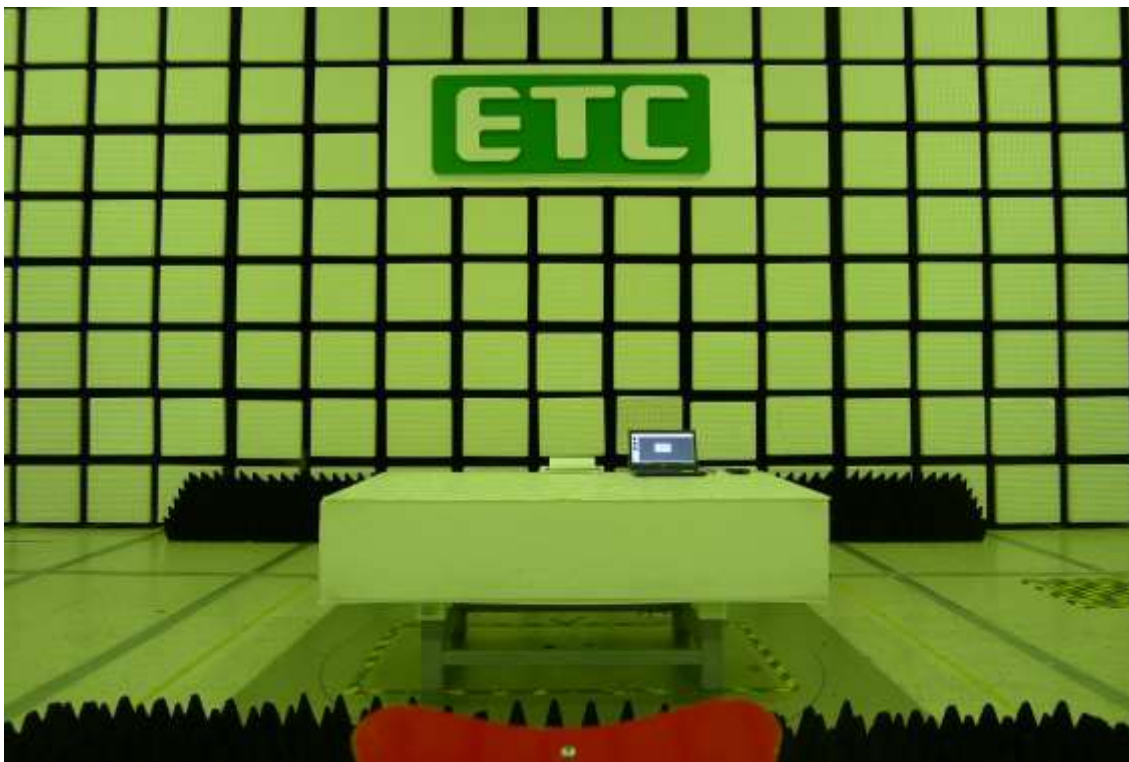




2. Radiated Emissions Test Setup Photos (30MHz~1GHz)



3. Radiated Emissions Test Setup Photos (1GHz~18GHz)



**4. Outside view 1 of EUT**



**5. Outside view 2 of EUT**





6. Cable view 1

