

Product Name: ePaper Signage	Report No: FCC022023-00226RF0
Product Model: ES073EYBM20	Security Classification: Open
Version: V1.0	Total Page: 40

# TIRT Testing Report



Prepared By:	Checked By:	Approved By:	A circular blue stamp with the text 'TIRT Technology Service Co., Ltd.' around the top and 'Shenzhen' in the center.
Stone Tang	Randy Lv	Daniel Chen	
Stone Tang	Randy Lv	Daniel Chen	

# FCC Radio Test Report

## FCC ID: ARS-ES073EYBM20

**This report concerns: Original Grant**

<b>Project No.</b>	:	2023-00226
<b>Equipment</b>	:	ePaper Signage
<b>Brand Name</b>	:	N/A
<b>Test Model</b>	:	ES073EYBM20
<b>Series Model</b>	:	N/A
<b>Applicant</b>	:	Top Victory Electronics (Taiwan) Co.,Ltd
<b>Address</b>	:	10F., No.230, Liancheng Rd. Zhonghe Dist., New Taipei City, 23553 Taiwan
<b>Manufacturer</b>	:	Top Victory Electronics (Taiwan) Co.,Ltd
<b>Address</b>	:	10F., No.230, Liancheng Rd. Zhonghe Dist., New Taipei City, 23553 Taiwan
<b>Date of Receipt</b>	:	Jan. 13, 2023
<b>Date of Test</b>	:	Jan. 13, 2023~Mar. 07, 2023
<b>Issued Date</b>	:	Mar. 08, 2023
<b>Report Version</b>	:	V1.0
<b>Test Sample</b>	:	20230113000881
<b>Standard(s)</b>	:	FCC CFR Title 47, Part 15, Subpart C ANSI C63.10-2013

- The test result referred exclusively to the presented test model /sample.
- Without written approval of TIRT Inc. the test report shall not reproduced except in full.

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**REPORT ISSUED HISTORY**

Report No.	Version	Description	Issued Date	Note
FCC022023-00226RF0	V1.0	Original Report.	Mar. 08 2023	Valid

## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC CFR Title 47, Part 15, Subpart C				
Standard(s) Section	Test Item	Test Result	Judgment	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	PASS	-----
15.225(a)-(d) 15.205(a) 15.209(a)	Radiated Emission	APPENDIX B APPENDIX C	PASS	-----
15.225(e)	Frequency Tolerance	APPENDIX D	PASS	-----
15.215(c)	Bandwidth	APPENDIX E	PASS	-----
15.203	Antenna Requirement	-----	PASS	Note(2)

Note:

- (1) "N/A" denotes test is not applicable in this test report
- (2) The device what use a permanently attached antenna were considered sufficient to comply with the provisions of 15.203.

## 1.1 TEST FACILITY

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	101, 3 # Factory Building, Gongjin Electronics Shatin Community, Kengzi Street, Pingshan District, Shenzhen, China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number:	6049.01
FCC Accredited Lab. Designation Number:	CN1309
FCC Test Firm Registration Number:	825524
Telephone:	+86-0755-27087573

## 1.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The TIRT measurement uncertainty as below table:

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	±142.12kHz
RF power conducted	±0.74dB
RF power radiated	±3.25dB
Spurious emissions, conducted (9kHz~40GHz)	±1.78dB
Spurious emissions, radiated (9kHz~30MHz)	±2.8dB
Spurious emissions, radiated (30MHz~1GHz)	±4.6dB
Spurious emissions, radiated (1GHz~18GHz)	±4.9dB
Spurious emissions, radiated (18GHz~40GHz)	±5.54dB
Conduction Emissions(150kHz~30MHz)	±3.1dB
Humidity	±4.6%
Temperature	±0.7°C
Time	±1.25%

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

**1.3 TEST ENVIRONMENT CONDITIONS**

Test Item	Temperature	Humidity	Test Voltage	Tested By
AC Power Line Conducted Emissions	20.6°C	48%	AC 120V/60Hz	Stone Tang
Radiated Emissions-9kHz to 30MHz	21.9°C	51%	AC 120V/60Hz	Stone Tang
Radiated Emissions-30MHz to 1000MHz	24°C	54%	AC 120V/60Hz	Stone Tang
Frequency Tolerance	Normal & Extreme	55%	Normal & Extreme	Stone Tang
Bandwidth	24°C	54%	AC 120V/60Hz	Stone Tang

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	ePaper Signage
Brand Name	--
Test Model	ES073EYBM20
Series Model	N/A
Model Difference(s)	N/A
Power Source	DC 3.85V from lithium battery
Power Rating	DC 5V
Operation Frequency	13.56 MHz
Antenna Type	PIFA

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

Test Channel	Test Frequency (MHz)
01	13.56

## 2.2 DESCRIPTION OF TEST MODES

The test system was pre-tested based on the consideration of all possible combinations of EUT operation mode.

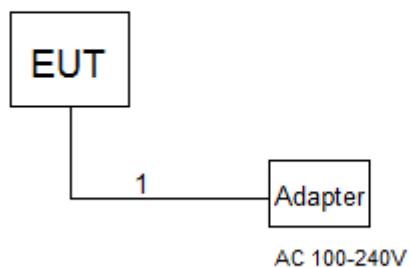
Pretest Mode	Description
Mode 1	TX Mode_13.56MHz

Following mode(s) was (were) found to be the worst case(s) and selected for the final test.

<b>AC power line conducted emissions test</b>	
Final Test Mode	Description
Mode 1	TX Mode_13.56MHz

<b>Radiated emissions test - Below 1GHz</b>	
Final Test Mode	Description
Mode 1	TX Mode_13.56MHz

<b>Conducted test</b>	
Final Test Mode	Description
Mode 1	TX Mode_13.56MHz

**2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED****2.4 SUPPORT UNITS**

Item	Equipment	Mfr/Brand	Model	Series No.
A	Adapter	16K4	CAN100USAPTW	/

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	Type-C Cable	NO	NO	1m

### 3. AC POWER LINE CONDUCTED EMISSIONS

#### 3.1 LIMIT

Frequency of Emission (MHz)	Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5.0	56	46
5.0 - 30.0	60	50

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

#### 3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item - EUT Test Photos.

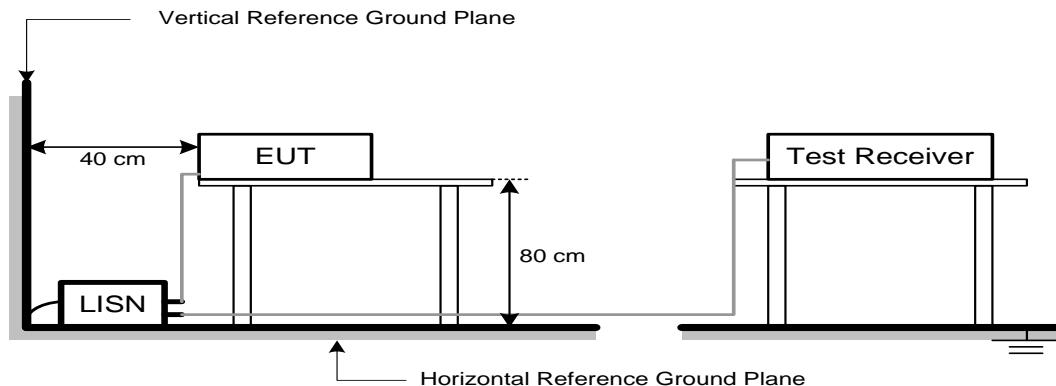
The following table is the setting of the receiver

Receiver Parameter	Setting
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

#### 3.3 DEVIATION FROM TEST STANDARD

No deviation.

### 3.4 TEST SETUP



### 3.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical function (as a customer would normally use it), EUT was programmed to be in continuously transmitting data or hopping on mode.

### 3.6 TEST RESULTS

Please refer to the APPENDIX A.

Remark:

- (1) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』 . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform in this case, a "\*" marked in AVG Mode column of Interference Voltage Measured.
- (2) Measuring frequency range from 150 kHz to 30 MHz.

## 4. RADIATED EMISSION

### 4.1 LIMIT

#### §15.225 (a)

The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

#### §15.225 (b)

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)

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)

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.

#### §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:

#### LIMITS OF RADIATED EMISSION MEASUREMENT (9 kHz-1000 MHz)

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

Note:

(1) The limit for radiated test was performed according to FCC CFR Title 47, Part 15, Subpart C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dB<sub>u</sub>V/m)=20log Emission level (uV/m).

#### 4.2 TEST PROCEDURE

The test set-up was made in accordance to the general provisions of ANSI C63.10-2013. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Spectrum Parameters	Setting
Start ~ Stop Frequency	9 kHz~150 kHz for RBW 200 Hz
Start ~ Stop Frequency	0.15 MHz~30 MHz for RBW 9 kHz
Start ~ Stop Frequency	30 MHz~1000 MHz for RBW 100 kHz

Receiver Parameters	Setting
Start ~ Stop Frequency	9 kHz~90 kHz for PK/AVG detector
Start ~ Stop Frequency	90 kHz~110 kHz for QP detector
Start ~ Stop Frequency	110 kHz~490 kHz for PK/AVG detector
Start ~ Stop Frequency	490 kHz~30 MHz for QP detector
Start ~ Stop Frequency	30 MHz~1000 MHz for QP detector

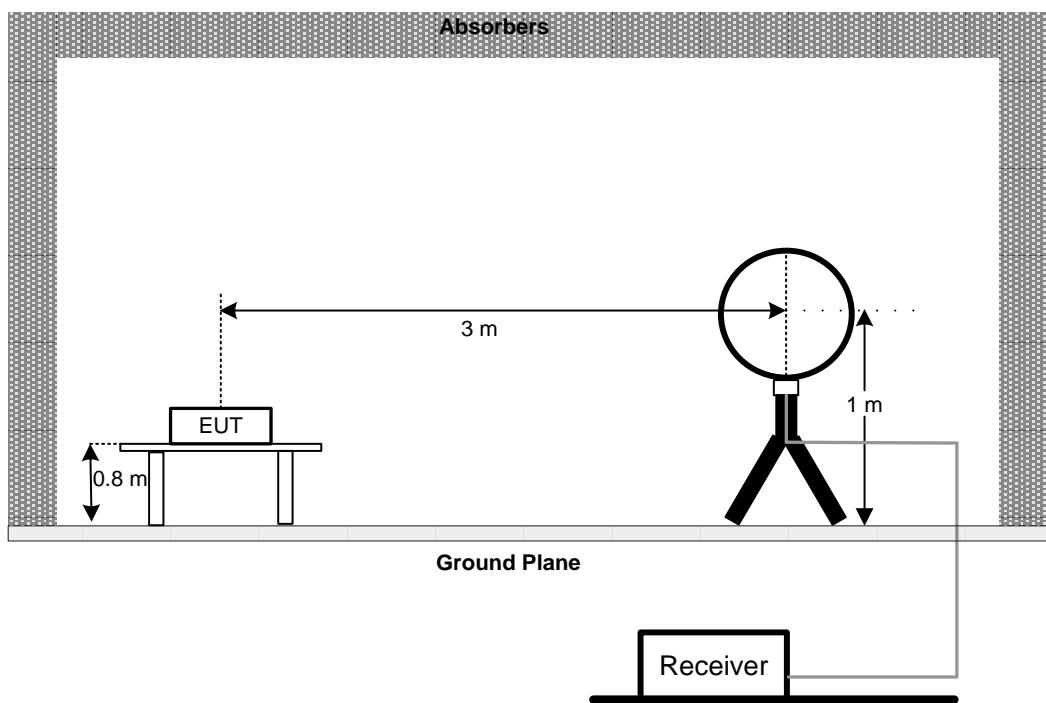
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

#### 4.3 DEVIATION FROM TEST STANDARD

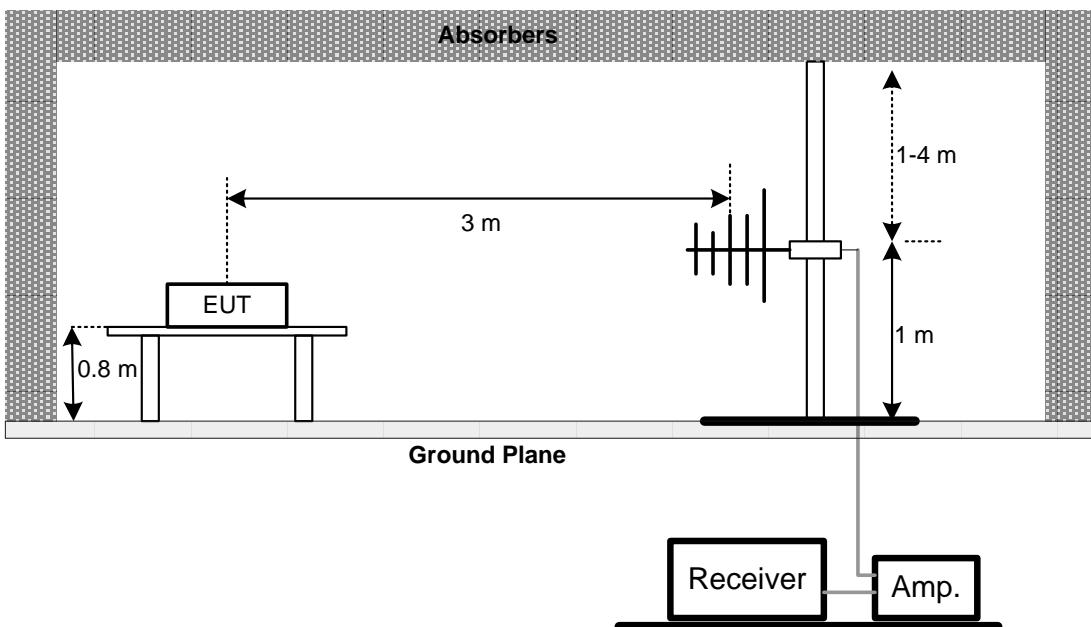
No deviation.

#### 4.4 TEST SETUP

**9 kHz to 30 MHz**



**30 MHz to 1000 MHz**



**4.5 EUT OPERATING CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

**4.6 TEST RESULTS - 9 kHz TO 30 MHz**

Please refer to the APPENDIX B.

Remark:

- (1) Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

**4.7 TEST RESULTS - 30 MHz TO 1000 MHz**

Please refer to the APPENDIX C.

## 5. FREQUENCY TOLERANCE

### 5.1 LIMIT

Section	Test Item	Limit
FCC 15.225(e)	Frequency Tolerance	±1.356 kHz

### 5.2 TEST PROCEDURE

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.

### 5.3 DEVIATION FROM STANDARD

No deviation.

### 5.4 TEST SETUP



### 5.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 3.5 unless otherwise a special operating condition is specified in the follows during the testing.

### 5.6 TEST RESULTS

Please refer to the APPENDIX D.

## 6. BANDWIDTH TEST

### 6.1 LIMIT

Section	Test Item	Limit
15.215(c)	20 dB Bandwidth	-

### 6.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- Spectrum Setting: RBW= 10 kHz, VBW=10 kHz, Sweep time = 5ms.

### 6.3 DEVIATION FROM STANDARD

No deviation.

### 6.4 TEST SETUP



### 6.5 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

### 6.6 TEST RESULTS

Please refer to the APPENDIX E.

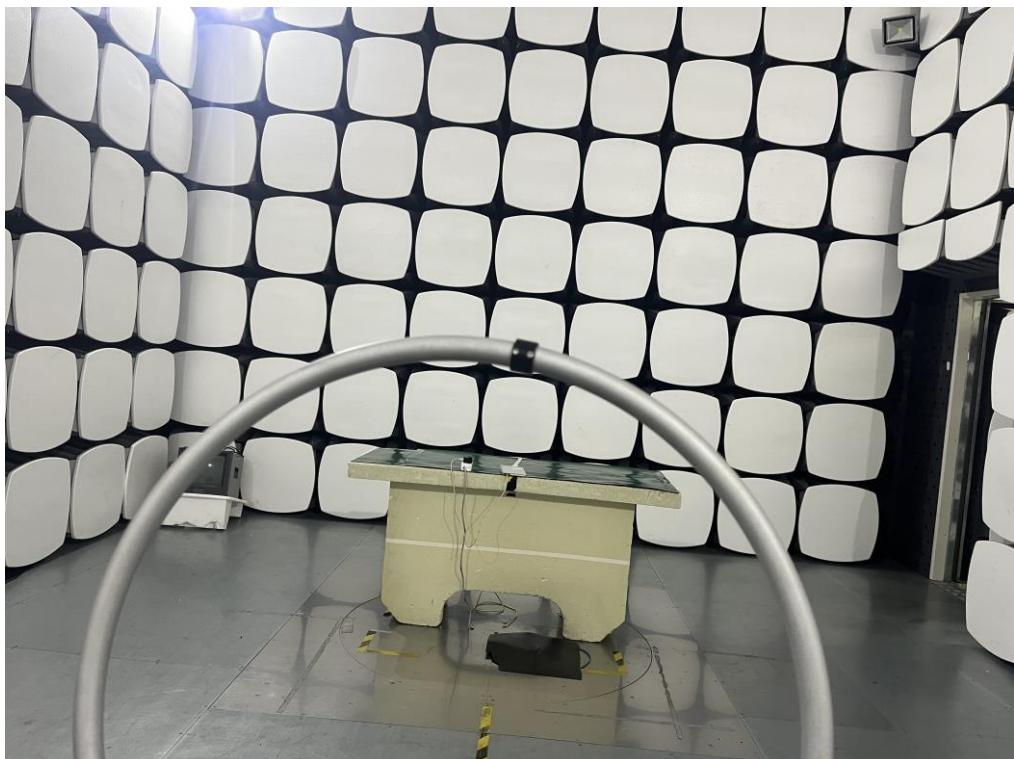
**7. MEASUREMENT INSTRUMENTS LIST**

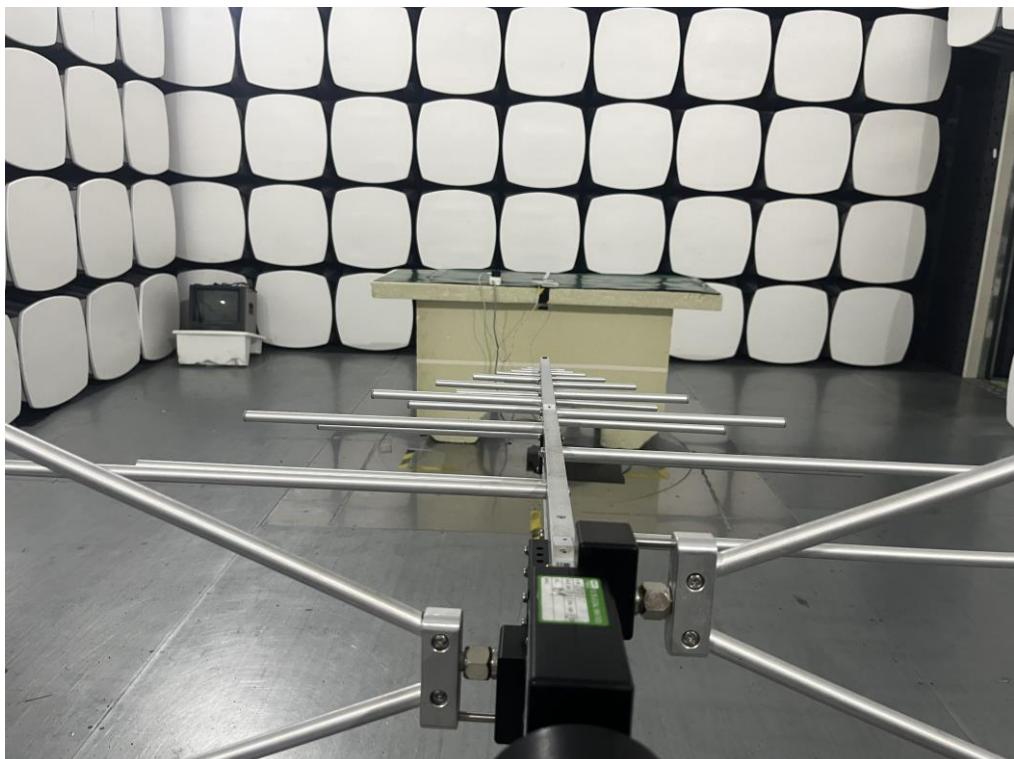
No.	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EMI Receiver	Rohde&Schwarz	ESCI	1166.5950.03	2023/10/14
2	AMN	Rohde&Schwarz	ENV216	3560.6550.05	2023/10/14
3	AMN	Schwarzbeck	NSLK8127	#829	2023/10/14
4	ECSI RF IN RF Cable	Rohde&Schwarz	RP-X1	N/A	2023/10/14
5	ECSI RF IN RF Cable	Rohde&Schwarz	Sapre sm	N/A	2023/10/14
6	EMI Receiver	Rohde&Schwarz	ESR7	102013	2023/10/14
7	Spectrum analyzer	Rohde&Schwarz	FSV30	103741	2023/10/17
8	Spectrum analyzer	KEYSIGHT	N9010A	MY51440158	2023/10/17
9	Log periodic antenna	Schwarzbeck	VULB 9163	361	2023/10/14
10	Loop Antenna	Schwarzbeck	FMZB1519 B	00029	2023/10/14
11	EMI Receiver	Rohde&Schwarz	ESU	100184	2023/07/20
12	Temp&Humidity Recorder	Anymetre	JR900	N/A	2023/10/16
13	Temp&Humidity Chamber	ETOMA	NTH1100-3 0A	16080628	2023/10/16
14	Testing Software	Farad	EZ-EMC	N/A	N/A

Remark "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

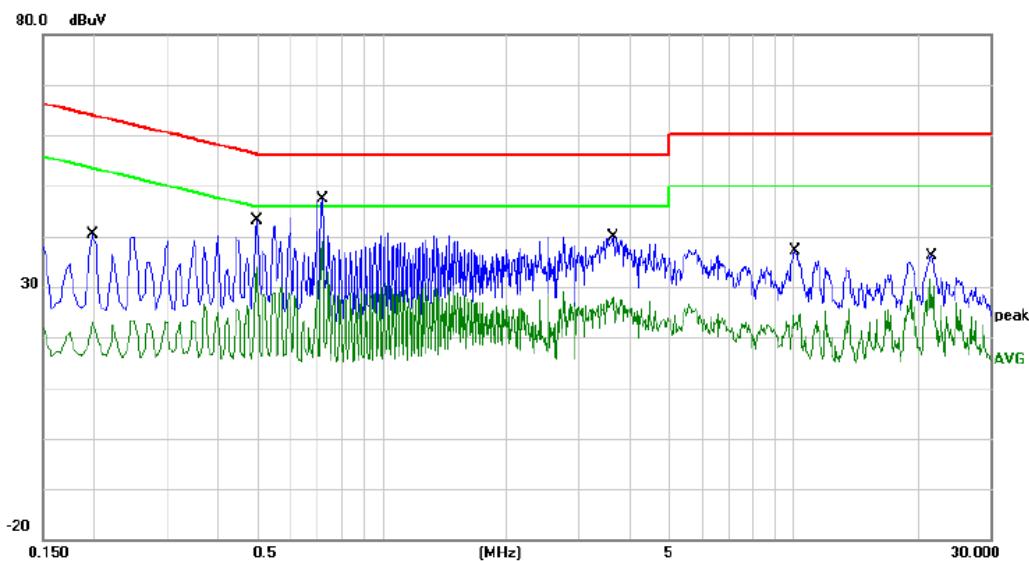
**8. EUT TEST PHOTO****AC Power Line Conducted Emissions Test Photos**

**Radiated Emissions Test Photos****9 kHz to 30 MHz**

**Radiated Emissions Test Photos****30 MHz to 1000 MHz**

**APPENDIX A - AC POWER LINE CONDUCTED EMISSIONS**

Test Mode	TX Mode_13.56MHz	Phase	Line
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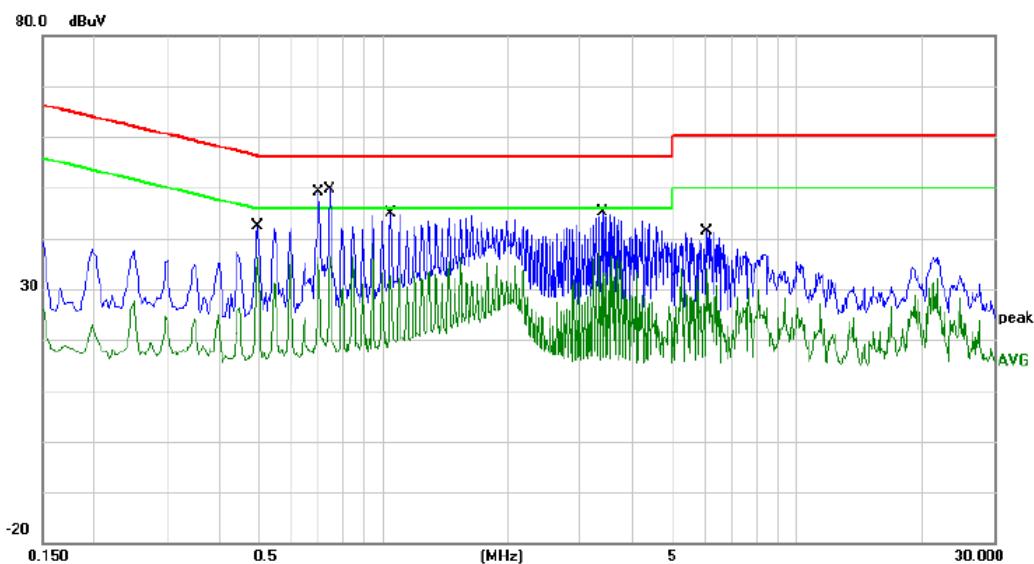
**Conducted Emission Measurement**

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.1980	17.91	19.88	37.79	63.69	-25.90	QP	
2		0.1980	1.85	19.88	21.73	53.69	-31.96	AVG	
3 *		0.4980	21.09	19.88	40.97	56.03	-15.06	QP	
4		0.4980	9.32	19.88	29.20	46.03	-16.83	AVG	
5		0.7180	7.59	19.88	27.47	56.00	-28.53	QP	
6		0.7180	-2.43	19.88	17.45	46.00	-28.55	AVG	
7		3.6580	1.04	19.91	20.95	56.00	-35.05	QP	
8		3.6580	-4.23	19.91	15.68	46.00	-30.32	AVG	
9		10.0980	11.51	19.96	31.47	60.00	-28.53	QP	
10		10.0980	0.22	19.96	20.18	50.00	-29.82	AVG	
11		21.6820	13.20	20.08	33.28	60.00	-26.72	QP	
12		21.6820	6.07	20.08	26.15	50.00	-23.85	AVG	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_13.56MHz	Phase	Neutral
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**Conducted Emission Measurement**

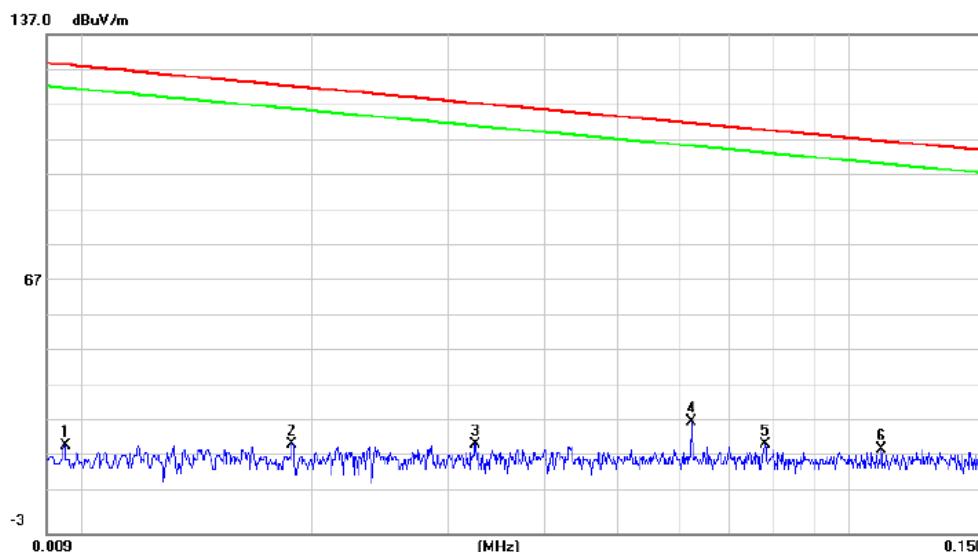
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector	Comment
			Level	Factor	ment				
1		0.4980	18.63	19.88	38.51	56.03	-17.52	QP	
2		0.4980	10.76	19.88	30.64	46.03	-15.39	AVG	
3		0.6980	24.84	19.88	44.72	56.00	-11.28	QP	
4		0.6980	16.85	19.88	36.73	46.00	-9.27	AVG	
5		0.7460	26.19	19.88	46.07	56.00	-9.93	QP	
6 *		0.7460	17.63	19.88	37.51	46.00	-8.49	AVG	
7		1.0460	20.67	19.89	40.56	56.00	-15.44	QP	
8		1.0460	13.10	19.89	32.99	46.00	-13.01	AVG	
9		3.3820	22.56	19.91	42.47	56.00	-13.53	QP	
10		3.3820	13.23	19.91	33.14	46.00	-12.86	AVG	
11		6.0660	16.61	19.93	36.54	60.00	-23.46	QP	
12		6.0660	8.34	19.93	28.27	50.00	-21.73	AVG	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

**APPENDIX B - RADIATED EMISSION - 9 KHZ TO 30 MHZ**

Test Mode	TX Mode_13.56MHz	Polarization	X
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**Radiated Emission**

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over
			Level	Factor	ment		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1		0.0095	32.14	-10.62	21.52	127.86	-106.34
2		0.0188	32.71	-10.69	22.02	121.96	-99.94
3		0.0326	32.74	-10.63	22.11	117.21	-95.10
4 *		0.0624	39.15	-10.67	28.48	111.60	-83.12
5		0.0780	32.72	-10.68	22.04	109.67	-87.63
6		0.1104	31.30	-10.71	20.59	106.67	-86.08

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_13.56MHz	Polarization	X
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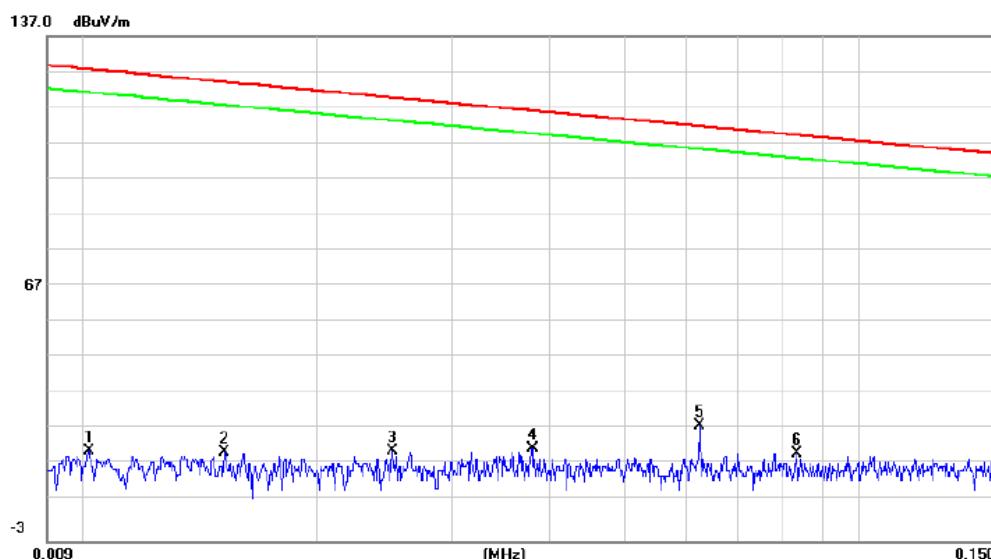
**Radiated Emission**

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	
			Level	Factor	ment			
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.5854	44.57	-10.68	33.89	72.25	-38.36	peak
2 *		1.8880	67.17	-10.60	56.57	69.54	-12.97	peak
3		2.6220	64.24	-10.62	53.62	69.54	-15.92	peak
4		4.2241	52.64	-10.62	42.02	69.54	-27.52	peak
5		5.8050	45.35	-10.83	34.52	69.54	-35.02	peak
6		13.4792	66.82	-10.96	55.86	69.54	-13.68	peak

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_13.56MHz	Polarization	Y
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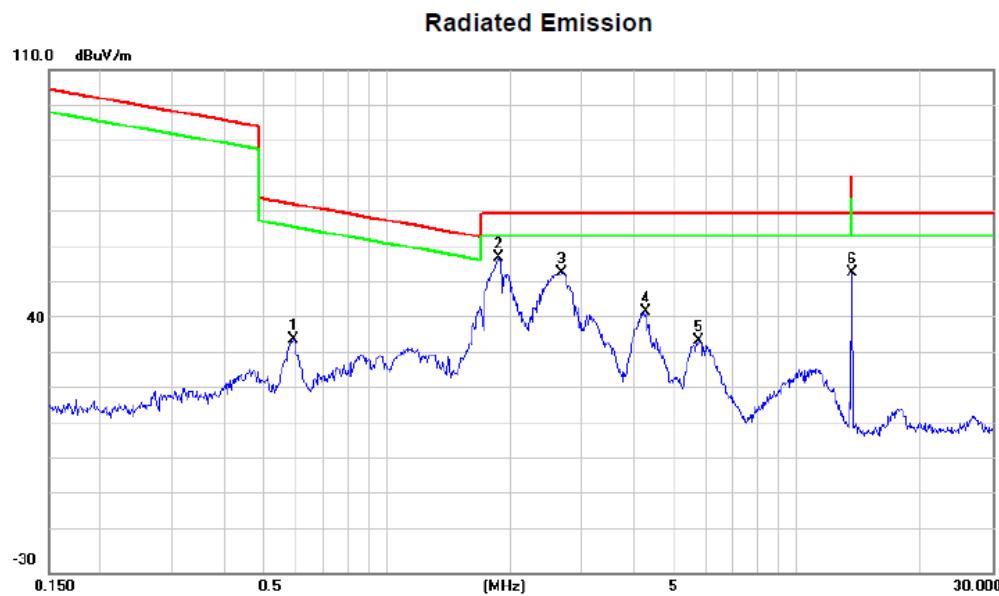
**Radiated Emission**

No.	Mk.	Reading Level		Correct Factor	Measure- ment	Limit	Over	
		Freq. MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		0.0102	32.74	-10.54	22.20	127.24	-105.04	peak
2		0.0152	32.15	-10.63	21.52	123.80	-102.28	peak
3		0.0251	32.73	-10.66	22.07	119.47	-97.40	peak
4		0.0380	33.53	-10.66	22.87	115.88	-93.01	peak
5 *		0.0624	39.80	-10.67	29.13	111.60	-82.47	peak
6		0.0833	32.14	-10.67	21.47	109.11	-87.64	peak

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_13.56MHz	Polarization	Y
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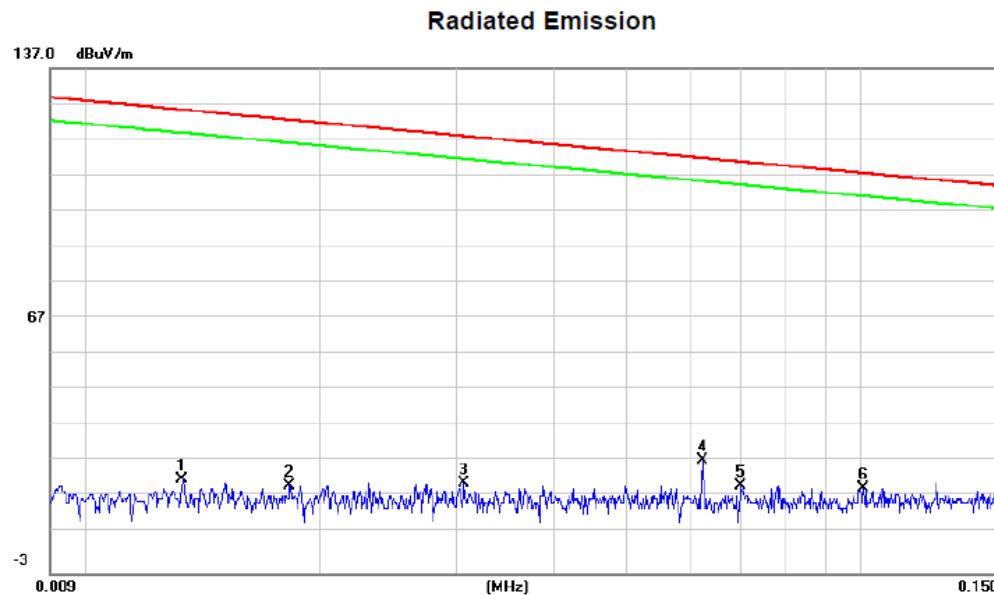


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over
			Level	Factor	ment		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1		0.5916	45.68	-10.68	35.00	72.16	-37.16
2 *		1.8780	68.30	-10.60	57.70	69.54	-11.84
3		2.6641	64.15	-10.62	53.53	69.54	-16.01
4		4.2692	53.36	-10.62	42.74	69.54	-26.80
5		5.7437	45.39	-10.82	34.57	69.54	-34.97
6		13.6227	64.58	-10.98	53.60	69.54	-15.94

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_13.56MHz	Polarization	Z
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over
		MHz	dBuV	dB/m	dBuV/m	dB	Detector
1		0.0133	33.56	-10.60	22.96	124.95	-101.99 peak
2		0.0183	32.13	-10.68	21.45	122.20	-100.75 peak
3		0.0308	32.72	-10.61	22.11	117.70	-95.59 peak
4 *		0.0624	39.15	-10.67	28.48	111.60	-83.12 peak
5		0.0700	32.15	-10.68	21.47	110.61	-89.14 peak
6		0.1006	31.30	-10.68	20.62	107.48	-86.86 peak

**REMARKS:**

(1) Measurement Value = Reading Level + Correct Factor.  
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_13.56MHz	Polarization	Z
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**Radiated Emission**

No.	Mk.	Reading		Correct Factor	Measure- ment	Limit	Over
		Freq. MHz	Level dBuV				
MHz	dBuV	dB/m	dBuV/m				
1	0.5916	45.20	-10.68	34.52	72.16	-37.64	peak
2	1.8483	66.67	-10.60	56.07	69.54	-13.47	peak
3	2.5807	63.82	-10.61	53.21	69.54	-16.33	peak
4	4.2018	52.94	-10.62	42.32	69.54	-27.22	peak
5	5.7437	45.21	-10.82	34.39	69.54	-35.15	peak
6 *	13.6227	67.37	-10.98	56.39	69.54	-13.15	peak

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

**APPENDIX C - RADIATED EMISSION - 30 MHZ TO 1000 MHZ**

Test Mode	TX Mode_13.56MHz	Polarization	Vertical
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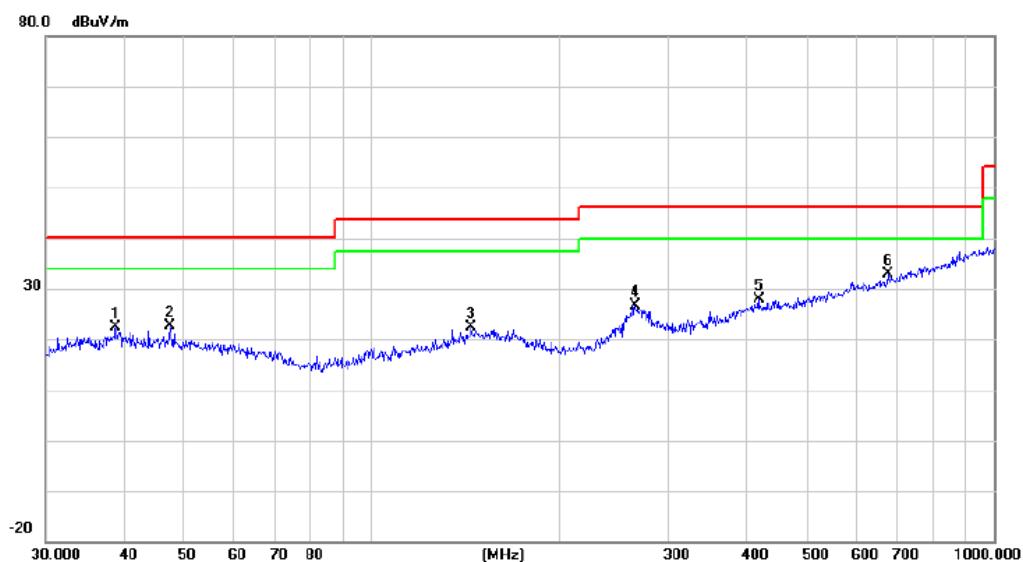
**Radiated Emission**

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dB	Detector	
1 *		39.4371	37.69	-9.98	27.71	40.00	-12.29	peak
2		75.1822	37.26	-13.55	23.71	40.00	-16.29	peak
3		142.3243	37.87	-9.98	27.89	43.50	-15.61	peak
4		170.7926	41.18	-10.67	30.51	43.50	-12.99	peak
5		248.5520	33.55	-10.44	23.11	46.00	-22.89	peak
6		531.9635	34.78	-3.03	31.75	46.00	-14.25	peak

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	TX Mode_13.56MHz	Polarization	Horizontal
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**Radiated Emission**

No.	Mk.	Reading Level		Correct Factor	Measure- ment	Limit	Over
		Freq. MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB
1	38.8878	32.54	-10.07	22.47	40.00	-17.53	peak
2	47.4918	32.67	-10.13	22.54	40.00	-17.46	peak
3	144.8418	32.27	-9.93	22.34	43.50	-21.16	peak
4	265.6757	36.53	-9.90	26.63	46.00	-19.37	peak
5	419.1081	33.62	-5.73	27.89	46.00	-18.11	peak
6 *	675.2080	32.88	-0.09	32.79	46.00	-13.21	peak

**REMARKS:**

(1) Measurement Value = Reading Level + Correct Factor.  
(2) Margin Level = Measurement Value - Limit Value.

**APPENDIX D - FREQUENCY TOLERANCE**

Test Mode	TX Mode_13.56MHz
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## Frequency Tolerance Versus Environmental Temperature

	Temperature (°C)	Voltage (V)	Frequency (MHz)	Frequency Error (kHz)	Limit (kHz)	Result
	20	120	13.5602	0.2	-	-
0 min	50	120	13.5603	0.3	+/- 1.356	PASS
	-20	120	13.5602	0.2	+/- 1.356	PASS
2 min	50	120	13.5598	-0.2	+/- 1.356	PASS
	-20	120	13.5601	0.1	+/- 1.356	PASS
5 min	50	120	13.5599	-0.1	+/- 1.356	PASS
	-20	120	13.5603	0.3	+/- 1.356	PASS
10 min	50	120	13.5598	-0.2	+/- 1.356	PASS
	-20	120	13.5602	0.2	+/- 1.356	PASS

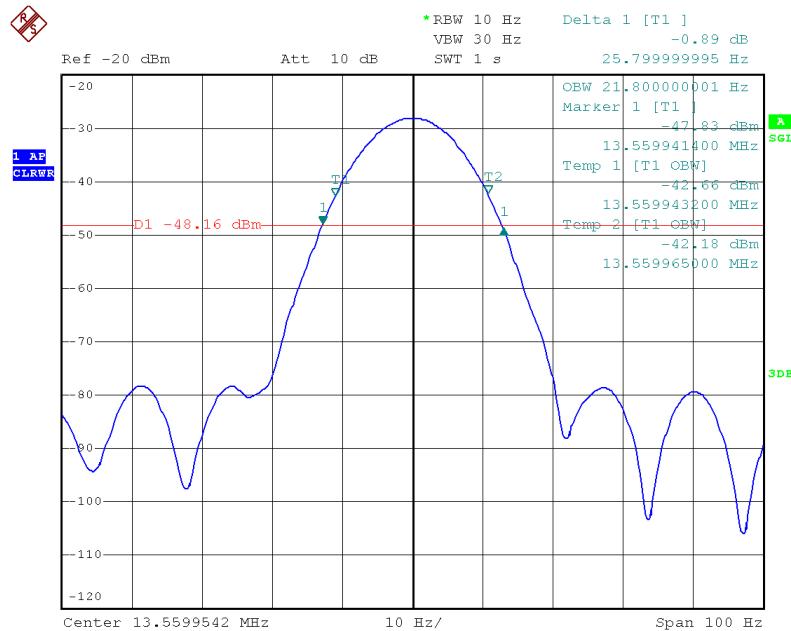
## Frequency Tolerance Versus Input Voltage

Temperature (°C)	Voltage (V)		Frequency (MHz)	Frequency Error (kHz)	Limit (kHz)	Result
20	$V_{\text{nom}}$	120	13.5602	0.2	-	-
20	$V_{\text{min}}$	102	13.5604	0.4	+/- 1.356	PASS
20	$V_{\text{max}}$	138	13.5598	-0.2	+/- 1.356	PASS

**APPENDIX E - BANDWIDTH**

Test Mode TX Mode\_13.56MHz

Frequency (MHz)	20 dB Bandwidth (MHz)	Result
13.56	0.0000258	Complies



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Note: According to Article 6.9.2 of ANSI C63.10 2013, RBW shall be within 1% to 5% of OBW. However, since the minimum RBW that the spectrometer can set is 10Hz, the RBW of the test data can only be set to 10Hz.

**End of Test Report**