

TEST REPORT

Reference No...... : WTN24X12294972W
FCC ID : 2BMF4DM25LEUS1116
Applicant : Pro Design, LLC
Address : 1151 Campus Dr. StowOhioUnited States
Manufacturer : The same as Applicant
Address : The same as Applicant
Product Name : DC Tubular Motor
Model No...... : DM25LEU/S-0.7/16
Standards : FCC Part 15.231
Date of Receipt sample : 2024-12-13
Date of Test..... : 2024-12-13 to 2024-12-25
Date of Issue : 2024-12-25
Test Report Form No. : WTX_Part 15_231W
Test Result..... : **Pass**

Remarks:

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of approver.

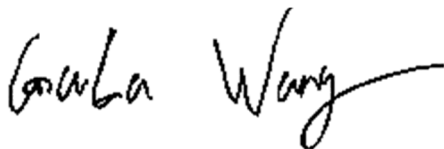
Prepared By:

Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road,
Block 70 Bao'an District, Shenzhen, Guangdong, China

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Email: sem@waltek.com.cn

Tested by:



Gala Wang

Approved by:



Jason Su

TABLE OF CONTENTS

1. GENERAL INFORMATION	4
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
1.2 TEST STANDARDS.....	5
1.3 TEST METHODOLOGY	5
1.4 TEST FACILITY	5
1.5 EUT SETUP AND TEST MODE	6
1.6 MEASUREMENT UNCERTAINTY	7
1.7 TEST EQUIPMENT LIST AND DETAILS	8
2. SUMMARY OF TEST RESULTS.....	12
3. ANTENNA REQUIREMENT	13
3.1 STANDARD APPLICABLE	13
3.2 TEST RESULT.....	13
4. RADIATED EMISSIONS	14
4.1 STANDARD APPLICABLE	14
4.2 TEST PROCEDURE	15
4.3 CORRECTED AMPLITUDE & MARGIN CALCULATION.....	16
4.4 SUMMARY OF TEST RESULTS/PLOTS.....	16
5. 20DB BANDWIDTH.....	20
5.1 STANDARD APPLICABLE	20
5.1 TEST PROCEDURE	20
5.2 SUMMARY OF TEST RESULTS/PLOTS.....	20
6. TRANSMISSION TIME.....	21
6.1 STANDARD APPLICABLE	21
6.2 TEST PROCEDURE	21
6.3 SUMMARY OF TEST RESULTS/PLOTS.....	21
7. DUTY CYCLE	23
7.1 STANDARD APPLICABLE	23
7.2 TEST PROCEDURE	23
7.3 SUMMARY OF TEST RESULTS/PLOTS.....	23
8. CONDUCTED EMISSIONS	25
8.1 TEST PROCEDURE	25
8.2 BASIC TEST SETUP BLOCK DIAGRAM	25
8.3 TEST RECEIVER SETUP	25
8.4 SUMMARY OF TEST RESULTS/PLOTS.....	25
APPENDIX PHOTOGRAPHS.....	28

Report version

Version No.	Date of issue	Description
Rev.00	2024-12-25	Original
/	/	/

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

General Description of EUT	
Product Name:	DC Tubular Motor
Trade Name:	/
Model No.:	DM25LEU/S-0.7/16
Adding Model(s):	DM25LEU/S-1.1/16
Rated Voltage:	5VDC
Battery Capacity:	2600mAh
Power Adaptor :	/
<i>Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model DM25LEU/S-0.7/16, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Frequency Range:	433.92 MHz
Max. Field Strength:	69.28dBuV/m(3m)
Data Rate:	/
Modulation:	FSK
Antenna Type:	line Antenna
Antenna Gain:	0dBi
<i>Note The Antenna Gain is provided by the customer and can affect the validity of results.</i>	

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.231: Periodic operation in the band 40.66-40.70MHz and above 70MHz.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, the equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.4 Test Facility

Address of the test laboratory

Laboratory: Waltek Testing Group (Shenzhen) Co., Ltd.

Address: 1/F., Room 101, Building 1, Hongwei Industrial Park, Liuxian 2nd Road, Block 70 Bao'an District, Shenzhen, Guangdong, China

FCC – Registration No.: 125990

Waltek Testing Group (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Waltek Testing Group (Shenzhen) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A and the CAB identifier is CN0057.

1.5 EUT Setup and Test Mode

The EUT was operated at continuous transmitting mode that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	Transmitting	433.92MHz

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	45~75 %
ATM Pressure:	1019 mbar

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Special Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
DC Cable	0.3	Unshielded	Without Ferrite

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
DC Adapter	Xiaomi	MDY-08-ES	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Occupied Bandwidth	Conducted	$\pm 1.5\%$
Conducted Spurious Emission	Conducted	$\pm 2.17\text{dB}$
Transmission Time	Conducted	$\pm 5\%$
Conducted Emissions	Conducted	9-150kHz $\pm 3.74\text{dB}$
		0.15-30MHz $\pm 3.34\text{dB}$
Transmitter Spurious Emissions	Radiated	30-200MHz $\pm 4.52\text{dB}$
		0.2-1GHz $\pm 5.56\text{dB}$
		1-6GHz $\pm 3.84\text{dB}$
		6-18GHz $\pm 3.92\text{dB}$

1.7 Test Equipment List and Details

Fixed asset Number	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
WTXE1004A 1-001	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2024-02-27	2025-02-26
WTXE1103A 1003	Attenuator	Pasternack	PE4007-4	/	2024-02-24	2025-02-23
WTXE1003A 1-005	Coaxial Cable	/	0M4RFC	/	2024-07-03	2025-01-03
☐ Chamber A: Below 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2024-02-24	2025-02-23
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2024-03-19	2025-03-18
WTXE1007A 1001	Amplifier	HP	8447F	2805A034 75	2024-02-24	2025-02-23
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
WTXE1010A 1006	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2024-02-24	2025-02-23
WTXE1104A 1032-1	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
WTXE1104A 1032-2	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
WTXE1104A 1032-3	Coaxial Cable	/	RC_6G-N-M	/	2024-03-15	2025-03-14
☐ Chamber A: Above 1GHz						
WTXE1005A 1003	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/03 5	2024-02-24	2025-02-23
WTXE1001A 1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2024-03-19	2025-03-18
WTXE1065A 1001	Amplifier	C&D	PAP-1G18	2002	2024-02-27	2025-02-26
WTXE1010A 1005	Horn Antenna	ETS	3117	00086197	2024-02-26	2025-02-25
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2025-03-16
WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2024-02-29	2025-02-28
WTXE1104A 1033-1	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
WTXE1104A	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14

1033-2						
WTXE1104A 1033-3	Coaxial Cable	/	C16-07-07	/	2024-03-15	2025-03-14
☐ Chamber B:Below 1GHz						
WTXE1010A 1006	Trilog Broadband Antenna	Schwarz beck	VULB9163(B)	9163-635	2024-03-17	2027-03-16
WTXE1038A 1001	Amplifier	Agilent	8447D	2944A104 57	2024-02-24	2025-02-23
WTXE1001A 1002	EMI Test Receiver	Rohde & Schwarz	ESPI	101391	2024-02-24	2025-02-23
WTXE1104A 1031-1	Coaxial Cable	/	1.5MRFC-LWB3	/	2024-07-03	2025-07-02
WTXE1104A 1031-2	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
WTXE1104A 1031-3	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
☒ Chamber C:Below 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2024-02-27	2025-02-26
WTXE1010A 1013-1	Trilog Broadband Antenna	Schwarz beck	VULB 9168	1194	2024-04-18	2027-04-17
WTXE1007A 1002	Amplifier	HP	8447F	2944A038 69	2024-02-24	2025-02-23
WTXE1010A 1007	Loop Antenna	Schwarz beck	FMZB 1516	9773	2024-02-26	2025-02-25
WTXE1104A 1034-1	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1034-2	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1034-3	Coaxial Cable	/	RC_6G-N-M	/	2024-07-03	2025-07-02
☒ Chamber C: Above 1GHz						
WTXE1093A 1001	EMI Test Receiver	Rohde & Schwarz	ESIB 26	100401	2024-02-27	2025-02-26
WTXE1103A 1005	Horn Antenna	POAM	RTF-118A	1820	2023-03-10	2026-03-09
WTXE1103A 1006	Amplifier	Tonscend	TAP01018050	AP22E806 235	2024-02-27	2025-02-26
WTXE1010A 1010	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2024-03-17	2025-03-16

WTXE1003A 1001	Pre-amplifier	Schwarzbeck	BBV 9721	9721-031	2024-02-29	2025-02-28
WTXE1104A 1035-1	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1035-2	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
WTXE1104A 1035-3	Coaxial Cable	/	RC-18G-N-M	/	2024-07-03	2025-07-02
☐ Conducted Room 1#						
WTXE1104A 1029	EMI Test Receiver	Rohde & Schwarz	ESCI	100525	2024-12-08	2025-12-07
WTXE1002A 1001	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2024-02-24	2025-02-23
WTXE1003A 1001	AC LISN	Schwarz beck	NSLK8126	8126-279	2024-02-24	2025-02-23
WTXE1104A 1036	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02
WTXE1104A 1038	Coaxial Cable	/	6MRFC-DP	/	2024-07-03	2025-07-02
☒ Conducted Room 2#						
WTXE1001A 1004	EMI Test Receiver	Rohde & Schwarz	ESPI	101259	2024-02-24	2025-02-23
WTXE1003A 1003	LISN	Rohde & Schwarz	ENV 216	100097	2024-02-24	2025-02-23
WTXE1104A 1037	Coaxial Cable	/	RG 316	/	2024-07-03	2025-07-02

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission A)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission B)	Farad	EZ-EMC	RA-03A1 (1.1.4.2)
EMI Test Software (Radiated Emission C)	Farad	EZ-EMC	RA-03A1-2 (1.1.4.2)
EMI Test Software (Conducted Emission Room 1#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3
EMI Test Software (Conducted Emission Room 2#)	Farad	EZ-EMC	3A1*CE-RE 1.1.4.3

*Remark: indicates software version used in the compliance certification testing.

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§15.203	Antenna Requirement	Compliant
§15.205	Restricted Band of Operation	Compliant
§15.209	Radiated Spurious Emissions	Compliant
§15.231(a)	Deactivation Testing	Compliant
§15.231(b)	Radiated Emissions	Compliant
§15.231(c)	20dB Bandwidth Testing	Compliant
§15.207(a)	Conducted Emission	Compliant

N/A: not applicable.

3. Antenna Requirement

3.1 Standard Applicable

According to FCC Part 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.

3.2 Test Result

This product has a line antenna, fulfill the requirement of this section.

4. Radiated Emissions

4.1 Standard Applicable

According to §15.231(b), the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolts/meter)	Field Strength of Spurious Emissions (microvolts/meter)
40.66 - 40.70	2,250	225
70 - 130	1,250	125
130 - 174	1,250 to 3,750 **	125 to 375 **
174 - 260	3,750	375
260 - 470	3,750 to 12,500 **	375 to 1,250 **
Above 470	12,500	1,250

** linear interpolations

The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

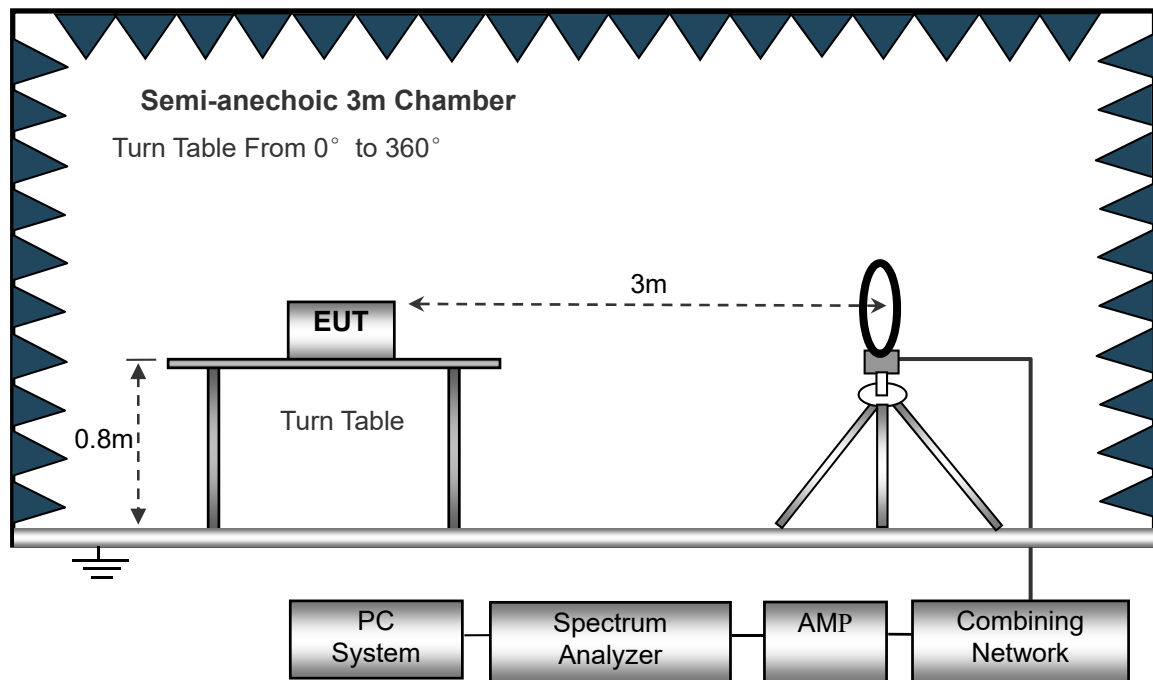
The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

Compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

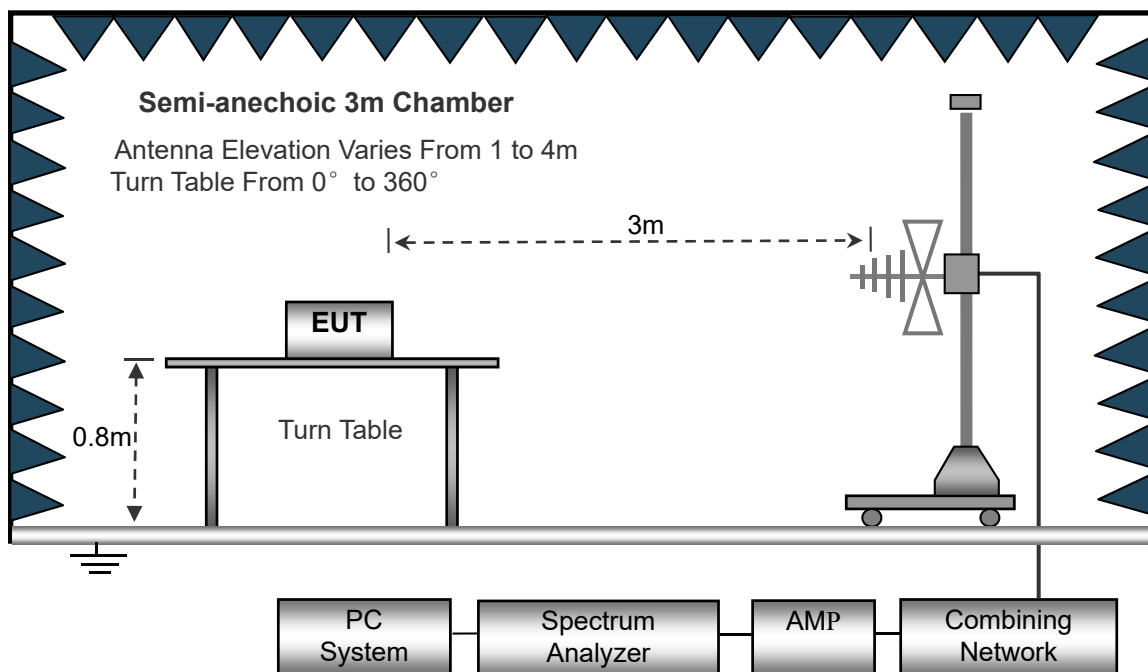
4.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.231(b) and FCC Part 15.209 Limit.

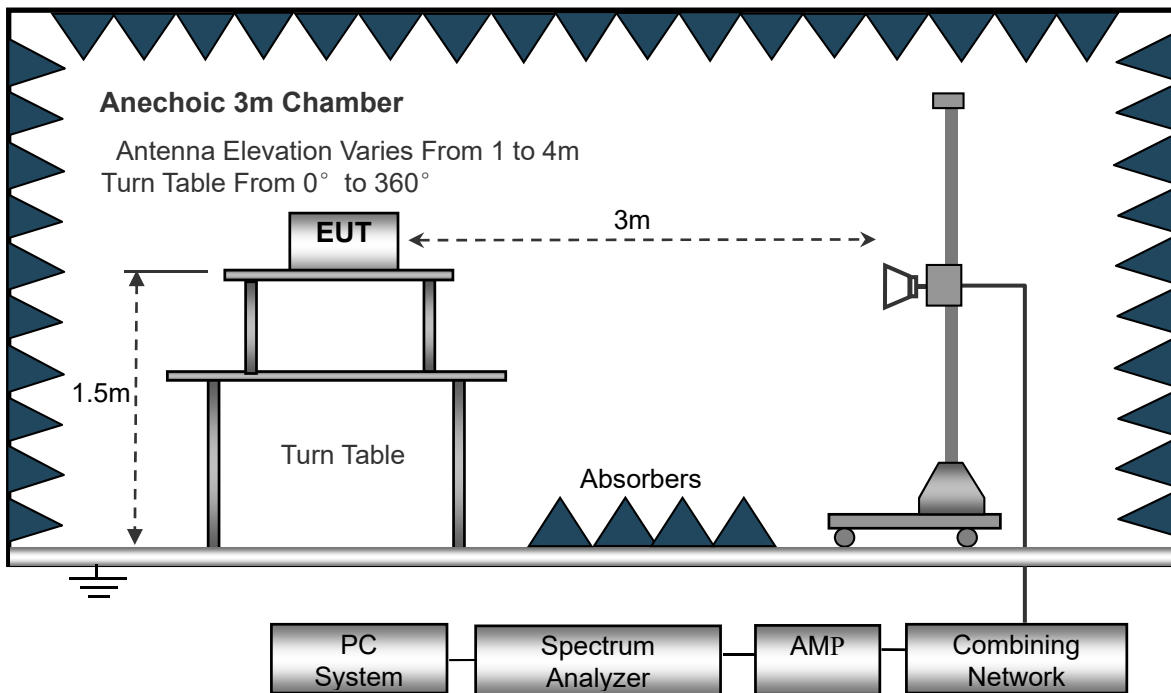
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30MHz to 1GHz.



The test setup for emission measurement above 1GHz.



4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Loss} + \text{Cab. Loss} - \text{Ampl. Gain}$$

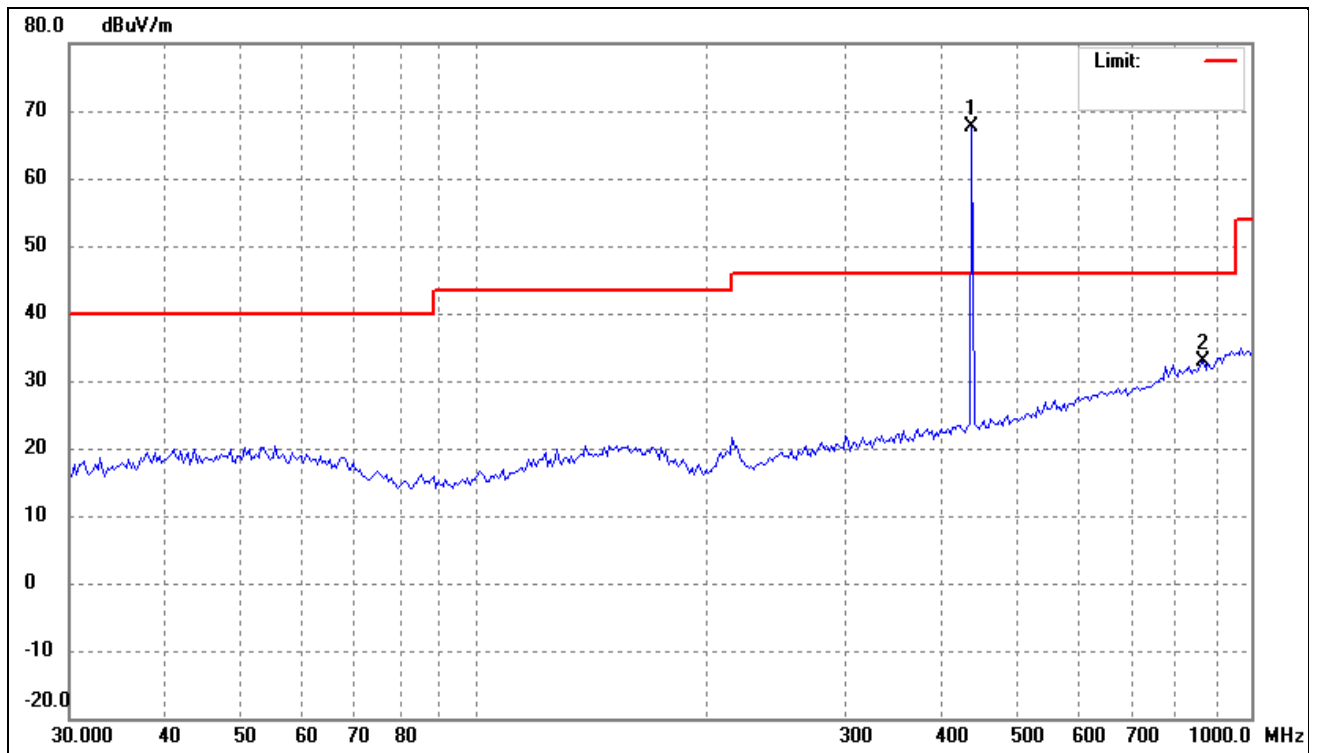
The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15C Limit}$$

4.4 Summary of Test Results/Plots

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Test Mode	TM1	Polarity:	Horizontal
-----------	-----	-----------	------------

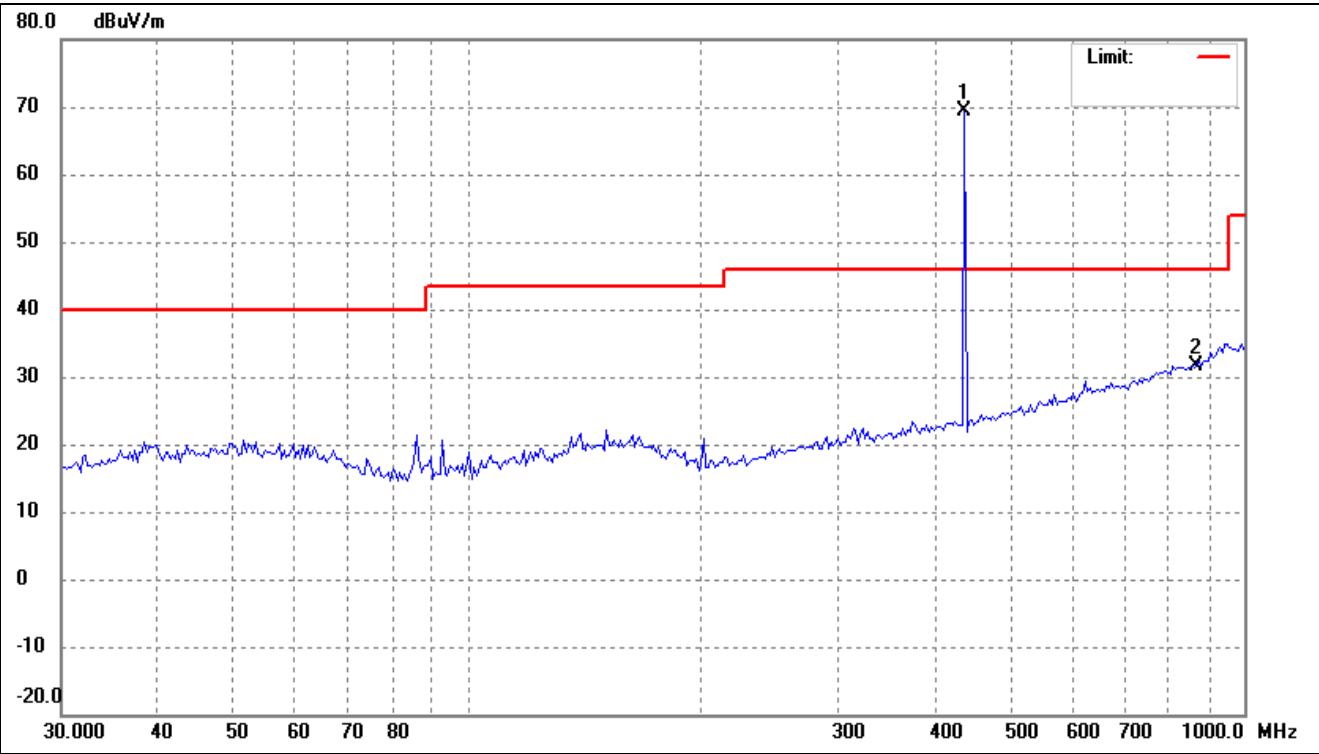


No.	Frequency	Reading	Corr.	Duty cycle	Result	Limit	Margin	Deg.	Height	Remark
	MHz	dBuV/m	Factor (dB)	Factor (dB)	dBuV/m	dBuV/m	(dB)	(°)	(cm)	
1	436.3956	73.05	-5.47	N/A	67.58	101.15	-33.57	-	-	peak
/	/	/	/	-21.94	45.64	81.15	-35.51	-	-	Ave
2	867.8400	31.21	1.74	N/A	32.95	101.15	-68.20	-	-	peak
/	/	/	/	-21.94	11.01	81.15	-70.14	-	-	Ave

Above 1GHz

No.	Frequency	Reading	Corr.	Duty cycle	Result	Limit	Margin	Deg.	Height	Remark
	MHz	dBuV/m	Factor (dB)	Factor (dB)	dBuV/m	dBuV/m	dB	(°)	(cm)	
1	1719.779	57.02	-21.74	N/A	35.28	74	-38.72	-	-	Peak
/	/	/	/	-21.94	13.34	54	-50.66	-	-	Ave
2	2469.600	55.07	-19.32	N/A	35.75	74	-38.25	-	-	Peak
/	/	/	/	-21.94	13.81	54	40.19	-	-	Ave
3	3463.856	57.72	-14.99	N/A	42.73	74	-31.27	-	-	Peak
/	/	/	/	-21.94	20.79	54	-33.21	-	-	Ave

Test Mode	TM1	Polarity:	Vertical
-----------	-----	-----------	----------



No.	Frequency MHz	Reading dBuV/m	Corr. Factor (dB)	Dutycycle Factor (dB)	Result dBuV/m	Limit dBuV/m	Margin (dB)	Deg. (°)	Height (cm)	Remark
1	436.3956	74.75	-5.47	N/A	69.28	101.15	-31.87	-	-	peak
/	/	/	/	-21.94	47.34	81.15	-33.81	-	-	Ave
2	867.8400	29.95	1.74	N/A	31.69	101.15	-69.46	-	-	peak
/	/	/	/	-21.94	9.75	81.15	71.40	-	-	Ave

Above 1GHz

No.	Frequency	Reading	Corr.	Dutycycle	Result	Limit	Margin	Deg.	Height	Remark
	MHz	dBuV/m	Factor (dB)	Factor (dB)	dBuV/m	dBuV/m	dB	(°)	(cm)	
1	1301.760	56.00	-23.39	N/A	32.61	74	-41.39	-	-	Peak
/	/	/	/	-21.94	10.67	54	-43.33	-	-	Ave
2	2169.600	55.40	-19.98	N/A	35.42	74	-38.58	-	-	Peak
/	/	/	/	-21.94	13.48	54	-40.52	-	-	Ave
3	3471.360	58.26	-14.94	N/A	43.32	74	-30.68	-	-	Peak
/	/	/	/	-21.94	21.38	54	-32.62	-	-	Ave

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Remark: '-Means' the test Degree and Height are not recorded by the test software and only show the worst case in the test report.

5. 20dB Bandwidth

5.1 Standard Applicable

According to FCC Part 15.231(c), the bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70MHz and below 900MHz. Bandwidth is determined at the points 20dB down from the modulated carrier.

5.1 Test Procedure

With the EUT’s antenna attached, the EUT’s 20dB Bandwidth power was received by the test antenna, which was connected to the spectrum analyzer with the START, and STOP frequencies set to the EUT’s operation band.

5.2 Summary of Test Results/Plots

Test Frequency MHz	20dB Bandwidth kHz	Limit kHz	Result
433.92	82.20	1085.0	Pass

Limit = Fundamental Frequency X 0.25% = 433.92MHz X 0.25% = 1085.0kHz

Please refer to the attached plots.



6. Transmission Time

6.1 Standard Applicable

According to FCC Part 15.231(a), the transmitter shall be complied the following requirements:

- 1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.
- (2) A transmitter activated automatically shall cease transmission within 5 seconds after activation.
- (3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour.

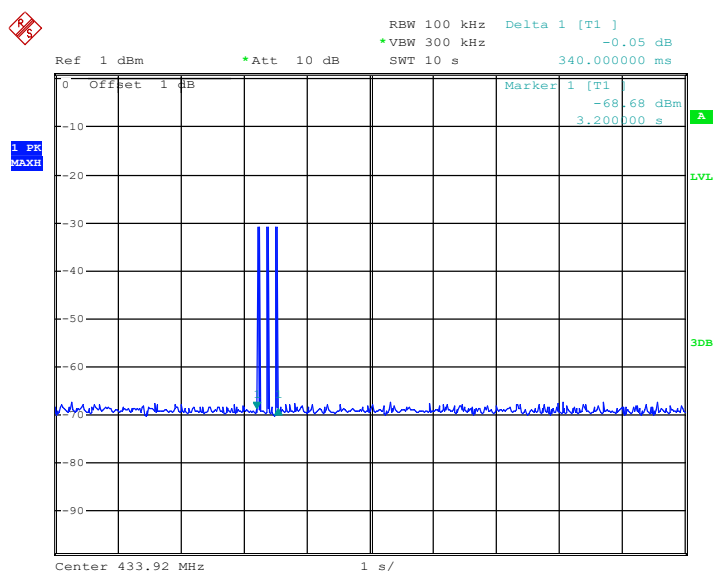
6.2 Test Procedure

With the EUT's antenna attached, the EUT's output signal was received by the test antenna, which was connected to the spectrum analyzer. Set the center frequency to 433.92MHz, than set the spectrum analyzer to Zero Span for the release time reading. During the testing, the switch was released then the EUT automatically deactivated.

6.3 Summary of Test Results/Plots

Transmission Type	Test Frequency(MHz)	Transmission Time(s)	Limit(s)	Result
Manually	433.92	0.34	5	Pass

Please refer to the attached plots.



Date: 23.DEC.2024 14:59:31

7. Duty Cycle

7.1 Standard Applicable

According to FCC Part 15.231 (b)(2) and 15.35 (c), for pulse operation transmitter, the averaging pulsed emissions are calculated by peak value of measured emission plus duty cycle factor.

7.2 Test Procedure

With the EUT's antenna attached, the EUT's output signal was received by the test antenna, which was connected to the spectrum analyzer. Set the center frequency to 433.92MHz, then set the spectrum analyzer to Zero Span for the release time reading. During the testing, the switch was released then the EUT automatically deactivated.

7.3 Summary of Test Results/Plots

433.93MHz:

Type of Pulse	Width of Pulse (ms)	Quantity of Pulse	Transmission Time (ms)	Total Time (T _{on}) (ms)
Pulse 1	8	1	8	8

Test Period (T _p)	Total Time (T _{on})	Duty Cycle	Duty Cycle Factor
ms	ms	%	dB
100	8	8	-21.94

Remark: Duty Cycle Factor=20*log(Duty Cycle)

Please refer to the attached test plots:

433.92MHz

Test Period

Ref 1 dBm

Att 10 dB

RBW 100 kHz

Delta 1 [T1]

VBW 300 kHz

SWT 500 ms

1.21 dB

139.000000 ms

0 Offset 1 dB

Marker 1 [T1]

-69.98 dBm

-1.750000 ms

1 PP

MAX

TRG -49 dBm

TRG LVL

3dB

Center 433.92 MHz

50 ms/

Date: 23.DEC.2024 15:12:49

Pulse Number

Ref 1 dBm

Att 10 dB

RBW 100 kHz

Delta 1 [T1]

VBW 300 kHz

SWT 200 ms

0.16 dB

8.000000 ms

0 Offset 1 dB

Marker 1 [T1]

-71.64 dBm

-150.000000 us

1 PP

MAX

TRG -49 dBm

TRG LVL

3dB

Center 433.92 MHz

20 ms/

Date: 23.DEC.2024 15:22:09

Pulse 1

Ref 1 dBm

Att 10 dB

RBW 100 kHz

Delta 1 [T1]

VBW 300 kHz

SWT 200 ms

0.51 dB

100.000000 ms

0 Offset 1 dB

Marker 1 [T1]

-71.64 dBm

-150.000000 us

1 PP

MAX

TRG -49 dBm

TRG LVL

3dB

Center 433.92 MHz

20 ms/

Date: 23.DEC.2024 15:22:39

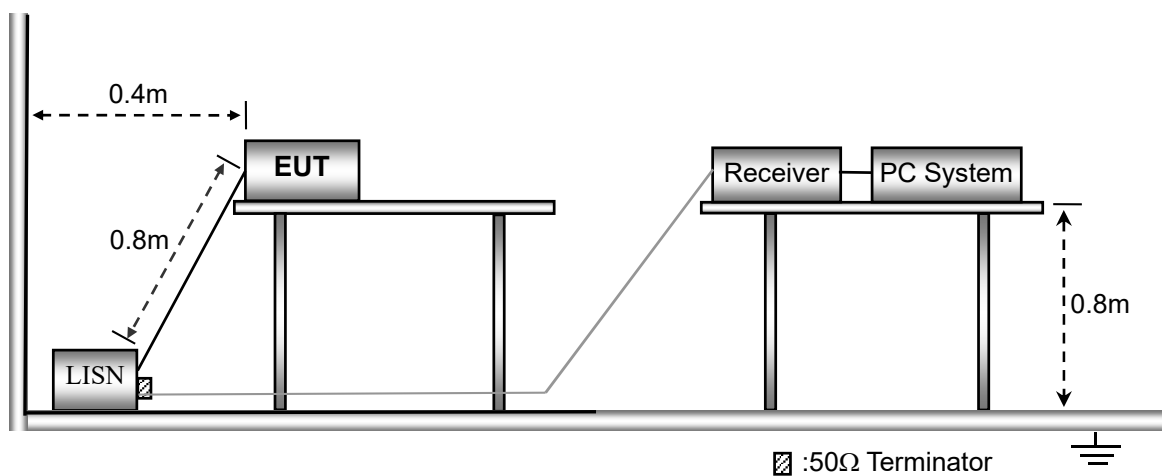
8. Conducted Emissions

8.1 Test Procedure

The setup of EUT is according with per ANSI C63.10:2013 measurement procedure. The specification used was with the FCC Part 15.207 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40cm long in the middle. The spacing between the peripherals was 10cm.

8.2 Basic Test Setup Block Diagram



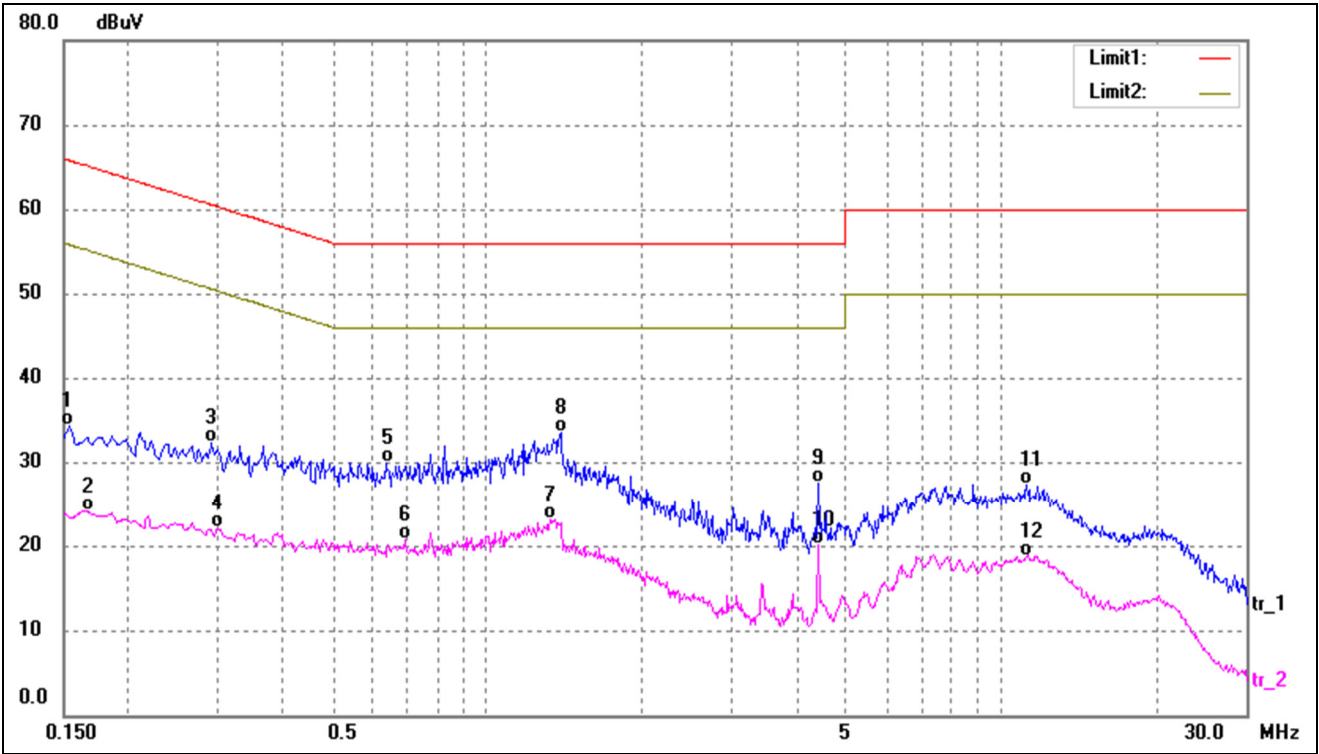
8.3 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency	150kHz
Stop Frequency	30MHz
Sweep Speed	Auto
IF Bandwidth.....	10kHz
Quasi-Peak Adapter Bandwidth	9kHz
Quasi-Peak Adapter Mode	Normal

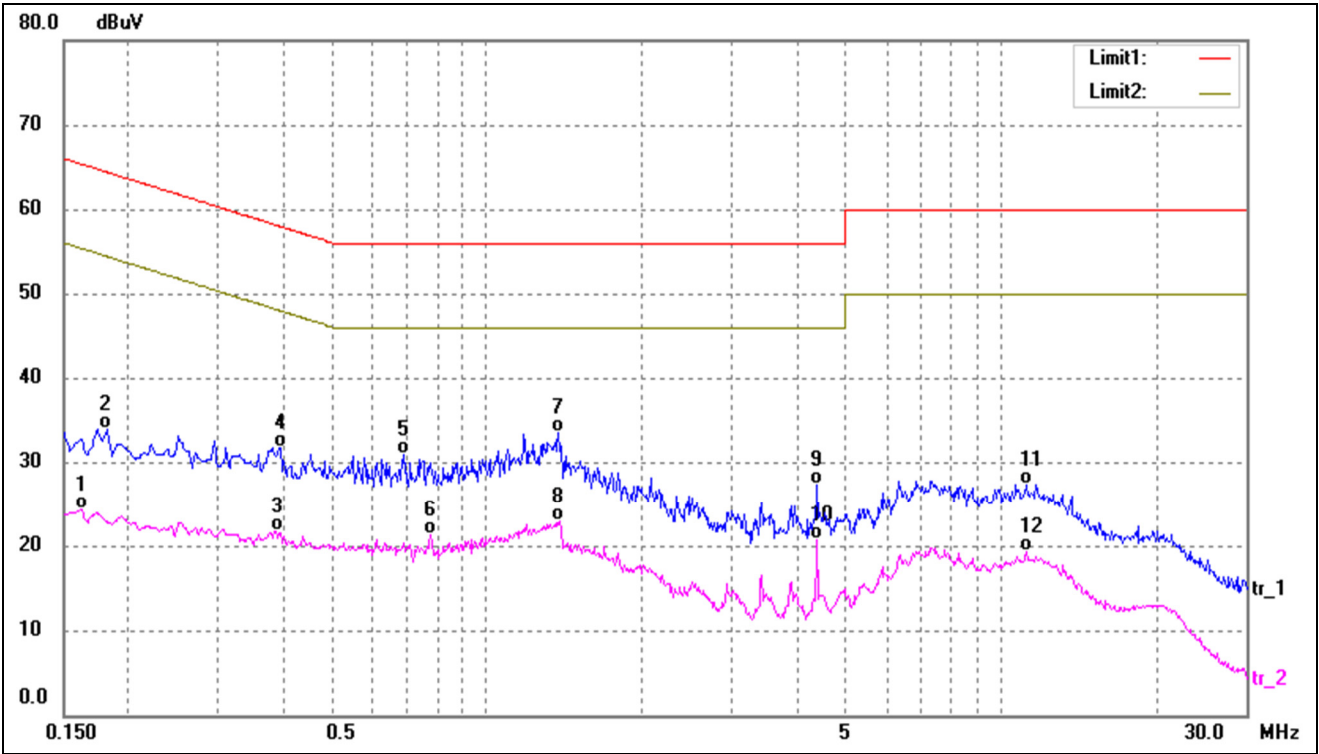
8.4 Summary of Test Results/Plots

Test Mode	TM1(AC120V 60Hz)	Polarity:	Neutral
-----------	------------------	-----------	---------



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	24.60	9.74	34.34	65.78	-31.44	QP
2	0.1660	14.45	9.70	24.15	55.15	-31.00	AVG
3	0.2900	22.67	9.63	32.30	60.52	-28.22	QP
4	0.2980	12.46	9.64	22.10	50.30	-28.20	AVG
5	0.6340	20.16	9.70	29.86	56.00	-26.14	QP
6	0.6900	10.97	9.69	20.66	46.00	-25.34	AVG
7	1.3300	13.49	9.65	23.14	46.00	-22.86	AVG
8*	1.3900	23.77	9.65	33.42	56.00	-22.58	QP
9	4.4140	17.77	9.68	27.45	56.00	-28.55	QP
10	4.4140	10.50	9.68	20.18	46.00	-25.82	AVG
11	11.2020	17.38	9.90	27.28	60.00	-32.72	QP
12	11.2700	8.89	9.91	18.80	50.00	-31.20	AVG

Test Mode	TM1(AC120V 60Hz)	Polarity:	Line
-----------	------------------	-----------	------



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1620	14.57	9.71	24.28	55.36	-31.08	AVG
2	0.1819	24.24	9.64	33.88	64.39	-30.51	QP
3	0.3860	12.11	9.68	21.79	48.15	-26.36	AVG
4	0.3940	22.07	9.69	31.76	57.98	-26.22	QP
5	0.6860	21.13	9.69	30.82	56.00	-25.18	QP
6	0.7780	11.62	9.69	21.31	46.00	-24.69	AVG
7*	1.3779	23.83	9.65	33.48	56.00	-22.52	QP
8	1.3860	13.25	9.65	22.90	46.00	-23.10	AVG
9	4.4020	17.59	9.68	27.27	56.00	-28.73	QP
10	4.4020	10.98	9.68	20.66	46.00	-25.34	AVG
11	11.2060	17.48	9.90	27.38	60.00	-32.62	QP
12	11.2060	9.34	9.90	19.24	50.00	-30.76	AVG

APPENDIX PHOTOGRAPHS

Please refer to “ANNEX”

***** END OF REPORT *****