FCC 47 CFR Part 15 Subpart B

TEST REPORT

For

Berkley Jensen 46in Lighted Candy Cane

MODEL NUMBER: 294881

FCC ID: 2ATJQ294881

REPORT NUMBER: 4790374461.1-EMC-1

ISSUE DATE: May 11, 2022

Prepared for

Meizhou Hongfeng Arts And Crafts Co. Ltd
Guanpu Shejiang Town,Meixian,Guangdong, China

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	May 11, 2022	Initial Issue	

Summary of Test Results

Emission			
Standard	**Test Item**	**Limit**	**Result**
FCC 47 CFR Part 15 Subpart B	Conducted emissions	FCCPart 15.107	Pass
	Radiated emissions below 1GHz	FCC Part 15.109	Pass (NOTE 1)

Note:
1. If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
*The measurement result for the sample received is <Pass> according to <FCC 47 CFR Part 15 Subpart B, ICES-003 Issue 7> when <Accuracy Method> decision rule is applied.

CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Meizhou Hongfeng Arts And Crafts Co. Ltd
Address:	Guanpu Shejiang Town,Meixian,Guangdong, China

Manufacturer Information

Company Name:	Meizhou Hongfeng Arts And Crafts Co. Ltd
Address:	Guanpu Shejiang Town,Meixian,Guangdong, China

EUT Information

EUT Name:	Berkley Jensen 46in Lighted Candy Cane
Model:	294881
Brand:	May 8, 2022
Sample Received Date:	
Sample Status:	Normal
Sample ID:	4895093
Date of Tested:	May 9, 2022

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC 47 CFR Part 15 Subpart B	**Pass**

Prepared By:

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Checked By:

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Stephen Guo

Laboratory Manager

2. TEST METHODOLOGY

All tests were performed in accordance with the standard FCC 47 CFR Part 15 Subpart B.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Recognized No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note:
All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions	0.009 MHz - 0.15 MHz	2	4
	0.15MHz - 30MHz	2	3.63
Radiated emissions below 1GHz	9kHz - 30MHz	2	2.2
	30MHz -1GHz	2	4.13
Note 1: This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of k=2.			
Note 2: According to the standard CISPR 16-4-2, the MU for the Conducted emissions from the AC mains power ports using AMN should not exceed 3.8 in range of 9kHz to 150kHz and 3.4 in range of 150kHz to 30MHz. We have considered the test results containing the value of Ulab (in dB) for the measurement instrumentation actually used for the measurements.			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Berkley Jensen 46in Lighted Candy Cane
EUT Description	Berkley Jensen 46in Lighted Candy Cane
Model	294881
Ratings	AC/DC adapter: AC 120V~60Hz, 0.20A DC 30V / 0.12A
Highest Internal Frequency	55 kHz

5.2. TEST MODE

Test Mode	Description
M01	Running
M02	Standby

5.3. SUPPORT UNITS FOR SYSTEM TEST

The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
/	/	/	/	/	/

The following cables were used to form a representative test configuration during the tests.

Item	Type of cable	Shielded Type	Ferrite Core	Length
/	/	/	/	/

6. MEASURING EQUIPMENT AND SOFTWARE USED

Test Equipment of Conducted emissions					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
EMI Test Receiver	ROHDE & SCHWARZ	ESR3	101961	Oct.30, 2021	Oct.29, 2022
Two-Line V-Network	ROHDE & SCHWARZ	ENV216	101983	Oct.30, 2021	Oct.29, 2022
Test Software for Conducted Emission	Farad	EZ-EMC	Ver.UL-3A1	N/A	N/A

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Apr. 24, 2020	Apr. 23, 2023
MXE EMI Receiver	KEYSIGHT	N9038A	MY56400036	Oct. 31, 2021	Oct. 30, 2022
Amplifier	hp	8447D	2944A09099	Oct. 31, 2021	Oct. 30, 2022
Test Software for Conducted Emission	Farad	EZ-EMC	Ver.UL-3A1	N/A	N/A

7. EMISSION TEST

7.1. Conducted emissions

LIMITS

CFR 47 FCC Part15 Subpart B				
FREQUENCY (MHz)	Class A (dBμV)		Class B (dBμV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46*
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

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.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

TEST PROCEDURE

1. The testing follows the guidelines in ANSI C63.4-2014.

2. The EUT was placed on a 12mm insulating material 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.

3. Excess I/O cables shall be bundled in the center. If bundling is not possible, the cables shall be arranged in a serpentine fashion. Bundling shall not exceed 40 cm in length.

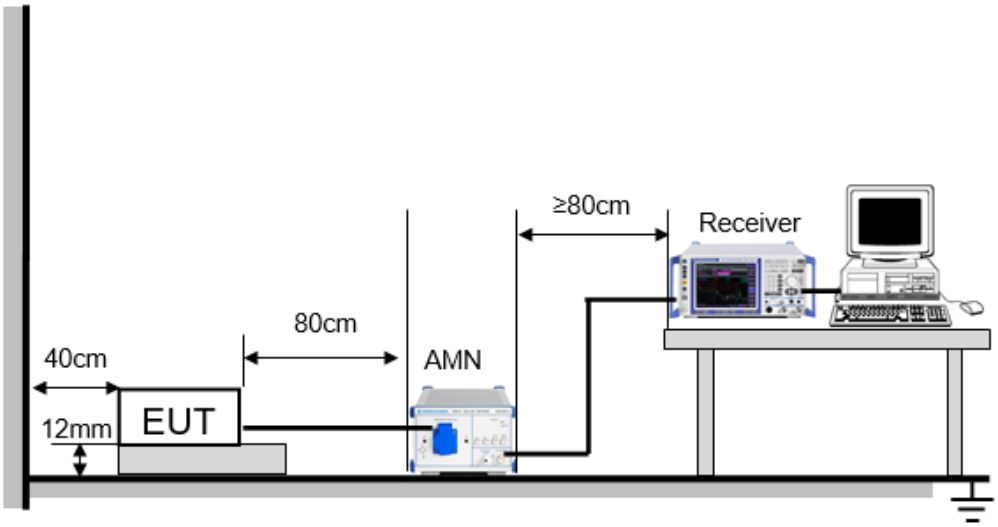
4. Excess power cords shall be bundled in the center or shortened to appropriate length.

5. 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. If bundling is not possible, the cables shall be arranged in a serpentine fashion.

6. LISN at least 80 cm from nearest part of EUT.

7. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.1℃	Relative Humidity	69.5%
Atmosphere Pressure	101kPa		

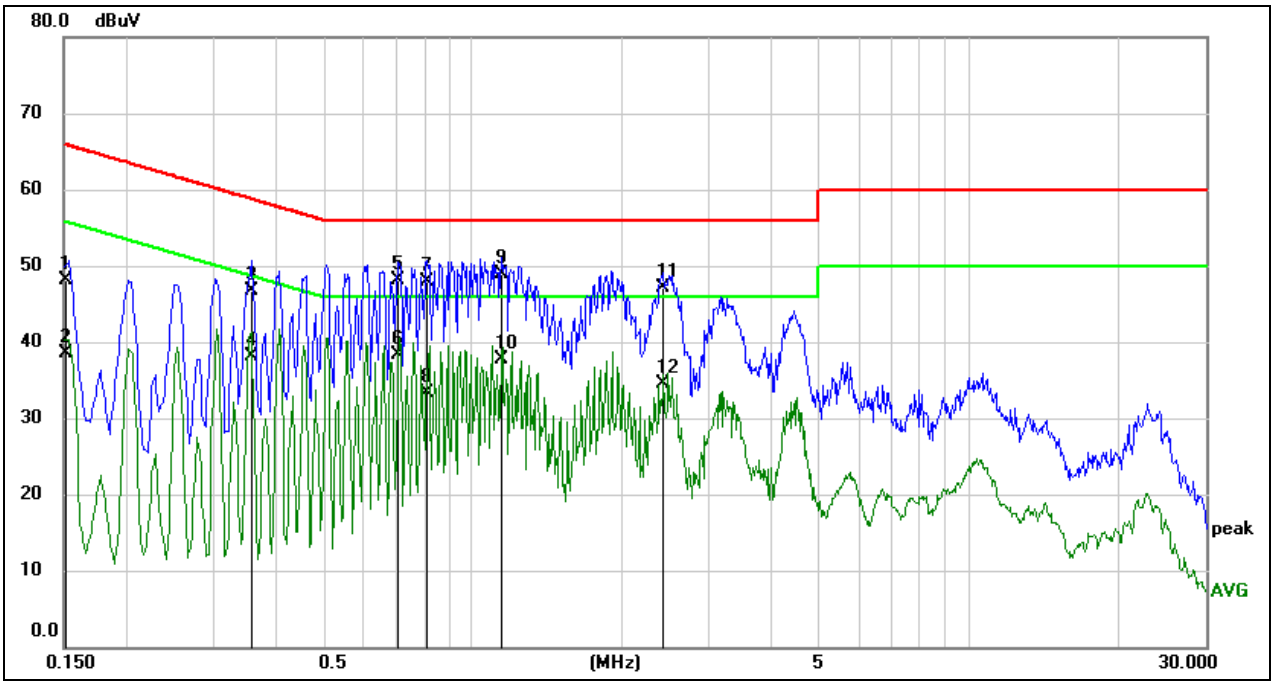
TEST MODE

Pre-test Mode:	M01 & M02
Final Test Mode:	M01

Note: All test modes had been tested, but only the worst data recorded in the report.

TEST RESULTS

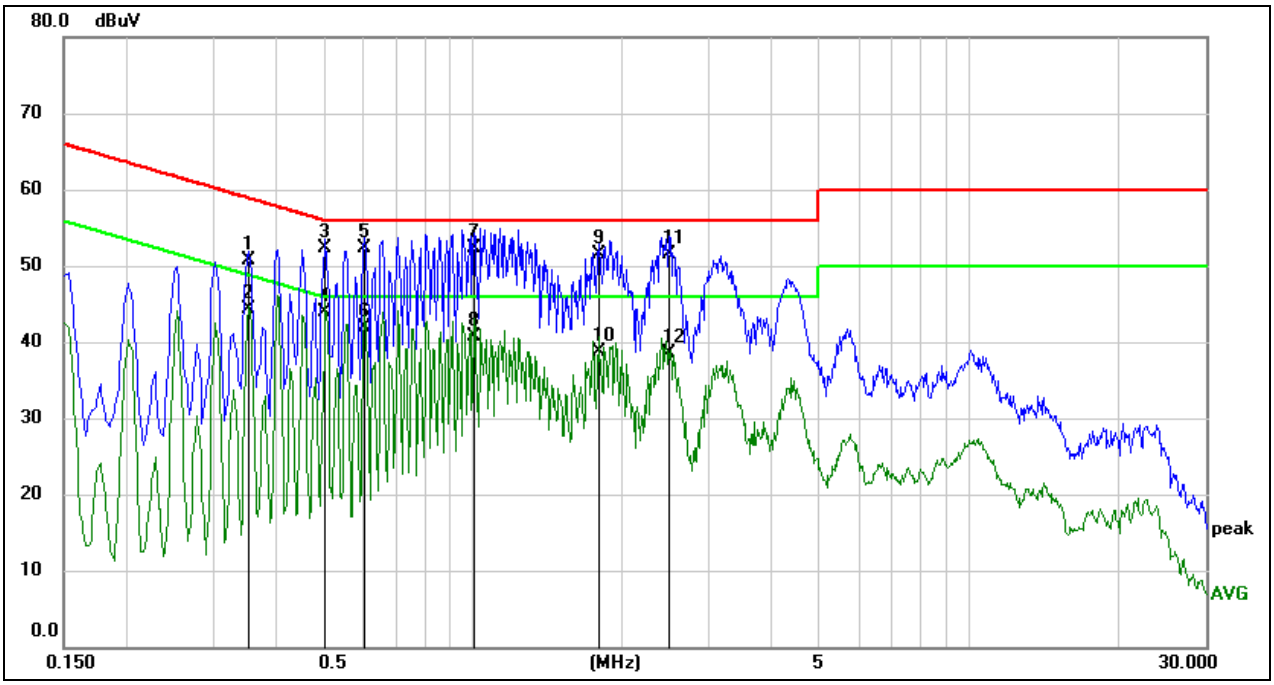
Test Mode:	M01	Line:	Line
Test Voltage:	AC 120V_60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1512	38.52	9.59	48.11	65.93	-17.82	QP
2	0.1512	28.85	9.59	38.44	55.93	-17.49	AVG
3	0.3581	37.29	9.43	46.72	58.77	-12.05	QP
4	0.3581	28.62	9.43	38.05	48.77	-10.72	AVG
5	0.7126	38.43	9.60	48.03	56.00	-7.97	QP
6	0.7126	28.69	9.60	38.29	46.00	-7.71	AVG
7	0.8083	38.32	9.60	47.92	56.00	-8.08	QP
8	0.8083	23.78	9.60	33.38	46.00	-12.62	AVG
9	1.1455	39.34	9.61	48.95	56.00	-7.05	QP
10	1.1455	28.09	9.61	37.70	46.00	-8.30	AVG
11	2.4239	37.55	9.63	47.18	56.00	-8.82	QP
12	2.4239	24.91	9.63	34.54	46.00	-11.46	AVG

Remark: Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
Margin = Result - Limit

Test Mode:	M01	Line:	Neutral
Test Voltage:	AC 120V_60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.3543	41.33	9.44	50.77	58.86	-8.09	QP
2	0.3543	34.77	9.44	44.21	48.86	-4.65	AVG
3	0.5058	43.03	9.31	52.34	56.00	-3.66	QP
4	0.5058	34.68	9.31	43.99	46.00	-2.01	AVG
5	0.6053	42.83	9.46	52.29	56.00	-3.71	QP
6	0.6053	32.50	9.46	41.96	46.00	-4.04	AVG
7	1.0110	42.63	9.61	52.24	56.00	-3.76	QP
8	1.0110	31.00	9.61	40.61	46.00	-5.39	AVG
9	1.7953	41.80	9.62	51.42	56.00	-4.58	QP
10	1.7953	29.17	9.62	38.79	46.00	-7.21	AVG
11	2.4985	41.79	9.62	51.41	56.00	-4.59	QP
12	2.4985	28.95	9.62	38.57	46.00	-7.43	AVG

Remark: Result = Reading +Correct (Insertion Loss + Cable Loss + Attenuator Factor)
Margin = Result - Limit

7.2. Radiated emissions below 1GHz

LIMITS

Below 1 GHz

CFR 47 FCC Part 15 Subpart B		
Frequency (MHz)	Class A	Class B
	Field strength (dBuV/m) (at 3 m)	Field strength (dBuV/m) (at 3 m)
30 - 88	49.5	40
88 - 216	53.9	43.5
216 - 960	56.9	46
Above 960	60	54

Test Frequency Range of Radiated Disturbance Measurement

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	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

NOTE:

(1) The limit for radiated test was performed according to CFR 47 FCC Part15 Subpart B /ICES-003 Issue 7;
(2) The tighter limit applies at the band edges;
(3) Emission level (dBuV/m) = 20log Emission level (uV/m),
3m Emission level = 10 m Emission level + 20log(10 m/3 m);

TEST PROCEDURE

The setting of the spectrum analyser

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak and QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.4-2014.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp was used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. Excess I/O cables shall be bundled in the center. If bundling is not possible, the cables shall be arranged in a serpentine fashion. Bundling shall not exceed 40 cm in length.

4. Excess power cords shall be bundled in the center or shortened to appropriate length.

5. 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. If bundling is not possible, the cables shall be arranged in a serpentine fashion.

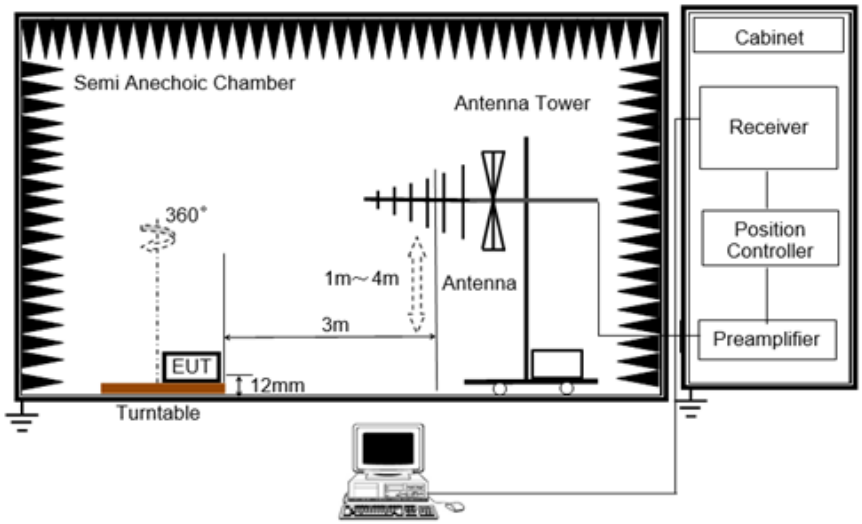
6. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

7. The EUT and all cables shall be insulated, if required, from the ground plane by up to 12mm of insulating material.

8. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

TEST SETUP

Below 1G and above 30MHz



TEST ENVIRONMENT

Temperature	24.3℃	Relative Humidity	67%
Atmosphere Pressure	1003kPa		

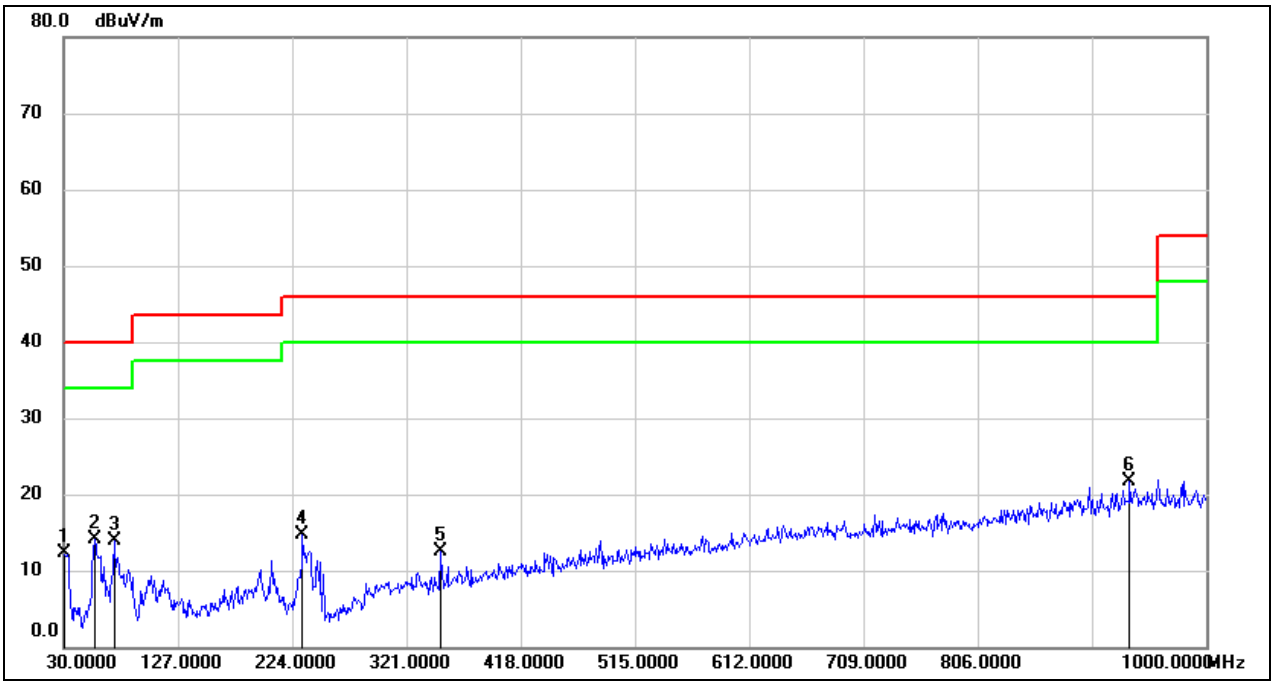
TEST MODE

Pre-test Mode:	M01 & M02
Final Test Mode:	M01

Note: All test modes had been tested, but only the worst data recorded in the report.

TEST RESULTS

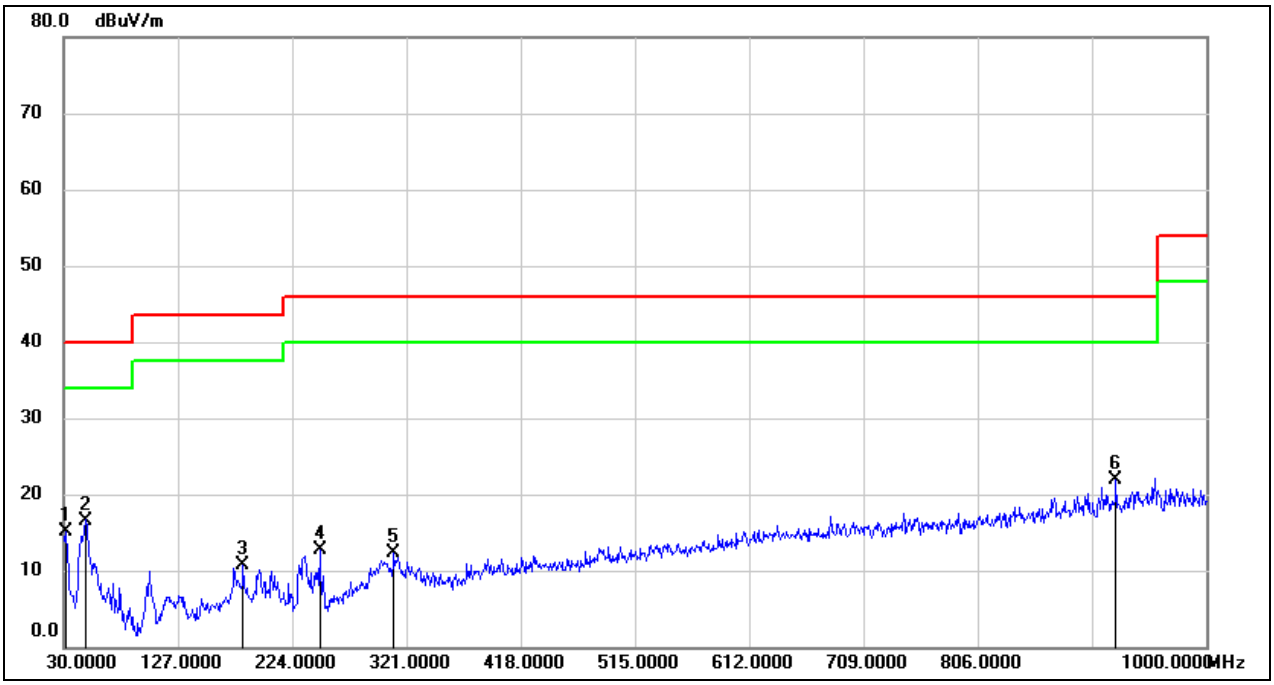
Test Mode:	M01	Polarity:	Horizontal
Test Voltage:	AC120V_60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	31.19	-18.94	12.25	40.00	-27.75	QP
2	56.1900	34.80	-20.61	14.19	40.00	-25.81	QP
3	72.6800	34.58	-20.76	13.82	40.00	-26.18	QP
4	232.7300	33.58	-18.79	14.79	46.00	-31.21	QP
5	350.1000	26.87	-14.32	12.55	46.00	-33.45	QP
6	935.0100	26.28	-4.64	21.64	46.00	-24.36	QP

Note: 1. Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result - Limit

Test Mode:	M01	Polarity:	Vertical
Test Voltage:	AC120V_60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	34.21	-19.13	15.08	40.00	-24.92	QP
2	48.4300	37.23	-20.63	16.60	40.00	-23.40	QP
3	182.2899	27.50	-16.79	10.71	43.50	-32.79	QP
4	247.2800	31.70	-18.99	12.71	46.00	-33.29	QP
5	310.3299	27.30	-15.07	12.23	46.00	-33.77	QP
6	923.3700	26.76	-4.76	22.00	46.00	-24.00	QP

Note: 1. Result = Reading +Correct (Amplifier Factor + Cable Loss + Antenna Factor)
2. Margin = Result – Limit

END OF REPORT