FCC Part 15B
Measurement and Test Report

For

Guizhou CVIM Technology Co., Ltd.

4th Floor, 5th R&D Building, Zunyi Software Park, Xiazi Town, Xinpu New District, Zunyi, Guizhou

FCC ID: 2AKWS-CAN

FCC Rule(s):	FCC Part 15 Subpart B
Product Description:	SMART PROJETOR
Tested Model:	CAN
Report No.:	STRD1806071I-4
Sample Receipt Date:	2018-06-13
Tested Date:	2018-06-13 to 2018-06-28
Issued Date:	2018-06-28
Tested By:	Long Tang/ Engineer
Reviewed By:	Silin Chen / EMC Manager
Approved & Authorized By:	Jandy So / PSQ Manager

Prepared By:

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	Guizhou CVIM Technology Co., Ltd.
Address of applicant:	4th Floor, 5th R&D Building, Zunyi Software Park, Xiazi Town, Xinpu New District, Zunyi, Guizhou
Manufacturer:	Guizhou CVIM Technology Co., Ltd.
Address of manufacturer:	4th Floor, 5th R&D Building, Zunyi Software Park, Xiazi Town, Xinpu New District, Zunyi, Guizhou

General Description of EUT	
Product Name:	SMART PROJECTOR
Trade Name:	wowoto
Model No.:	CAN
Adding Model(s):	CAN Pro
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 CAN, but the circuit and the electronic construction do not change, declared by the manufacturer.	

Technical Characteristics of EUT	
Rated Voltage:	Battery: DC 11.1V
Battery Capacity:	2600mAh
Rated Power:	/
Power Adapter Model:	MOEDL: ADP40KD AB Input: 100-240V~50-60Hz, 1.2A Output: 19Vdc 2.1A
Lowest Internal Frequency:	32.768kHz
Highest Internal Frequency:	2480MHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the Guizhou CVIM Technology Co., Ltd. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

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

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

FCC – Registration No.: 125990

Shenzhen SEM Test Technology Co., Ltd. Laboratory has been recognized to perform compliance testing on equipment subject to the Commissions Declaration Of Conformity (DOC). The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	USB3.0 Playing	Connect to USB
TM2	AV Playing	Connect to DVD
TM3	HDMI Playing	Connect to DVD
TM4	/	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
AD/DC ADAPTER	DELTA	ADP-65JH AB	/
Remote Control	/	RM-16	/
DVD	Sony	BDP-S485	/

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
AC LINE	1.5	Unshielded	Without Core
HDMI Cable	1.5	Shielded	With Core
AV Cable	0.2	Unshielded	Without Core

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ±3.74dB
		0.15-30MHz ±3.34dB
Radiated Emissions	Radiated	30-200MHz ±4.52dB
		0.2-1GHz ±5.56dB
		1-6GHz ±3.84dB
		6-18GHz ±3.92dB

1.7 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2018-05-22	2019-05-21
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2018-05-22	2019-05-21
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2018-05-22	2019-05-21
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2018-05-22	2019-05-21
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2018-05-22	2019-05-21
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2017-06-08	2020-06-07
SEMT-1042	Horn Antenna	ETS	3117	00086197	2017-06-08	2020-06-07
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2017-06-08	2020-06-07
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2018-05-22	2019-05-21
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2018-05-22	2019-05-21
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2018-05-22	2019-05-21

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	Compliant

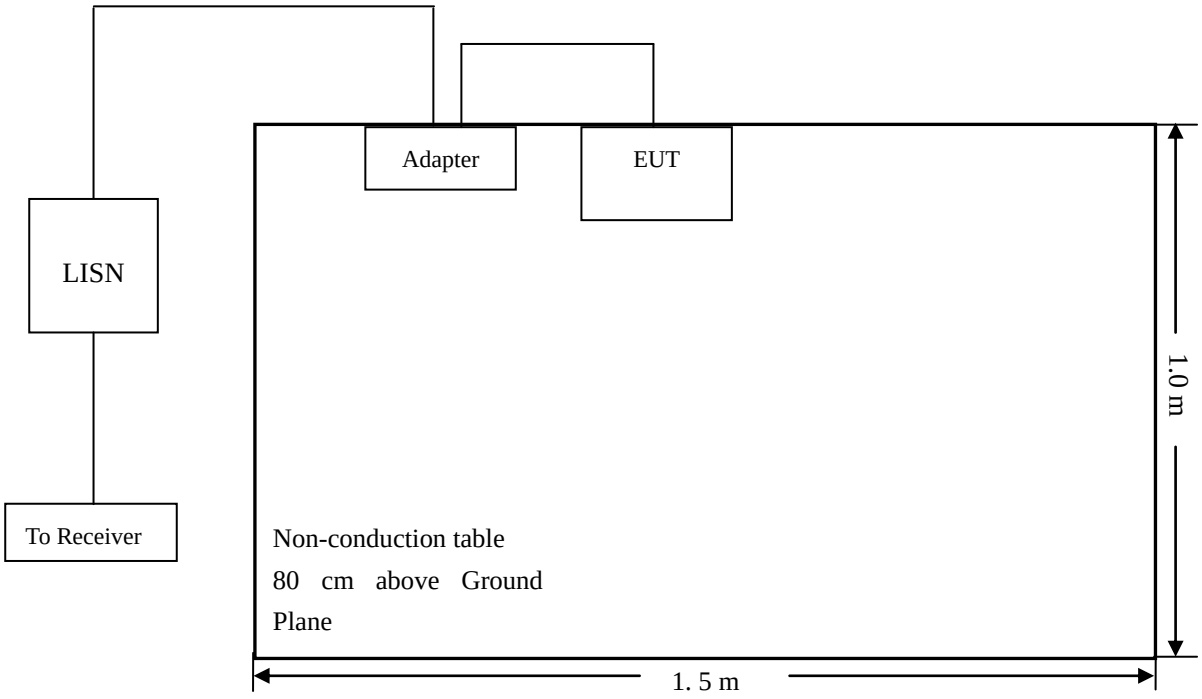
N/A: not applicable

3. Conducted Emissions

3.1 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.2 Basic Test Setup Block Diagram



3.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.4 Summary of Test Results/Plots

According to the data in section 3.5, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

-5.71 dB at **0.1660 MHz** in the **Line**, **QP** detector, 0.15-30MHz

3.5 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

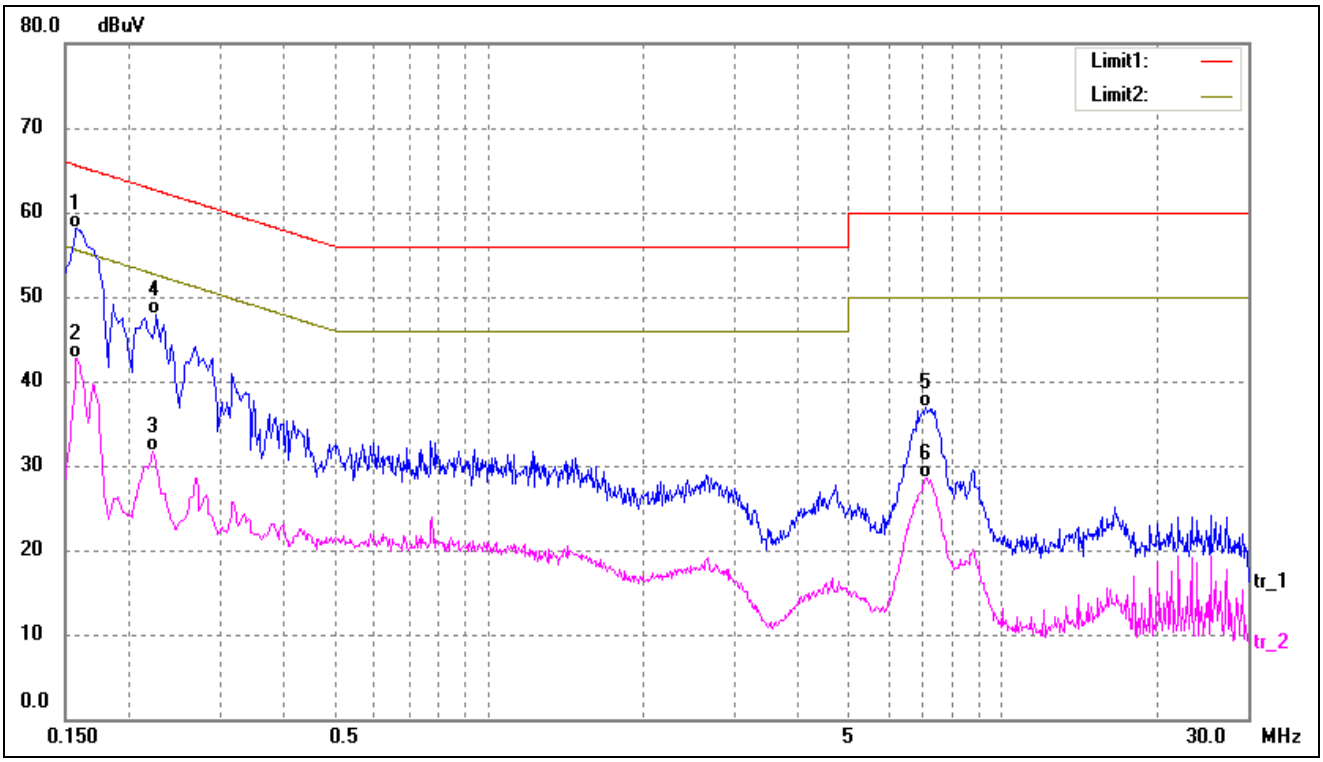
EUT: *SMART PROJECTOR*

Tested Model: *CAN*

Operating Condition: *TM1*

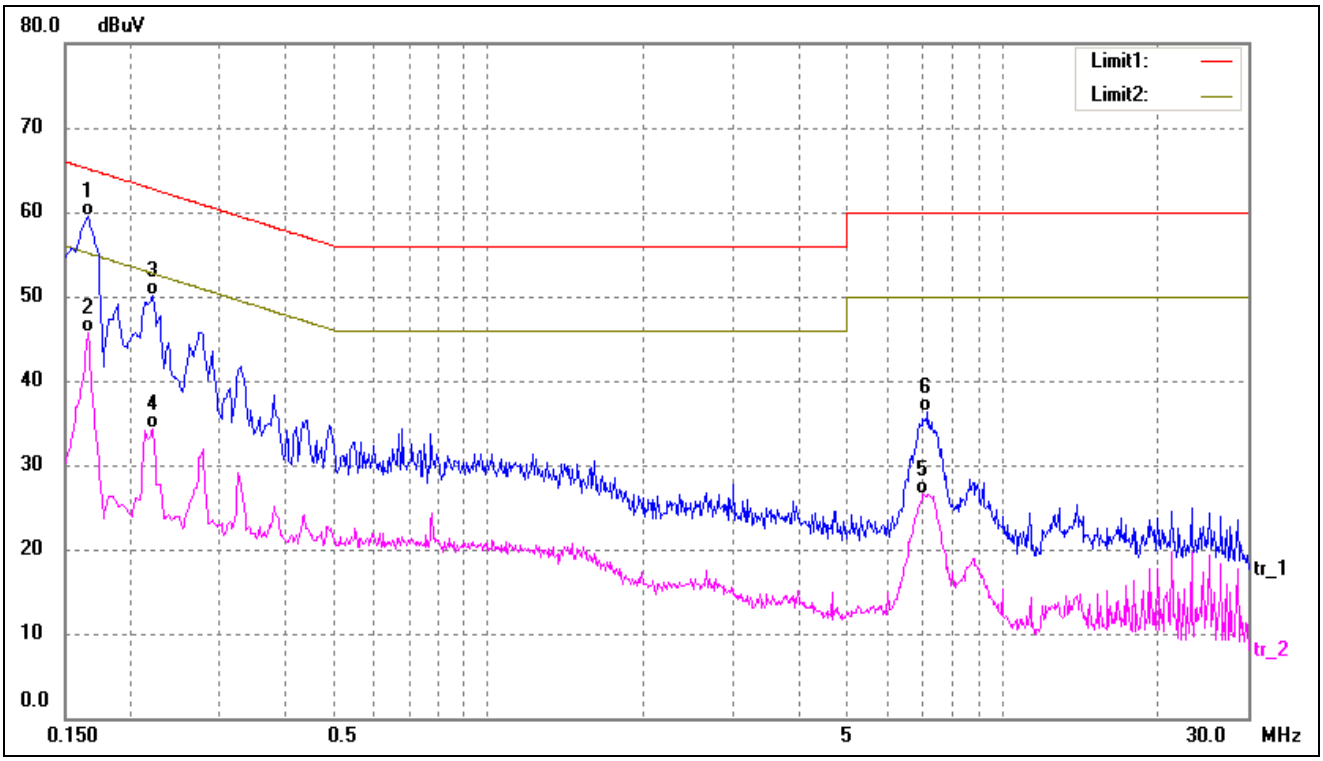
Comment: *AC 120V/60Hz; Battery: DC 11.1V*

Test Specification: *Neutral*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1580	48.03	10.10	58.13	65.56	-7.43	QP
2	0.1580	32.70	10.10	42.80	55.56	-12.76	AVG
3	0.2220	21.52	10.14	31.66	52.74	-21.08	AVG
4	0.2260	37.76	10.14	47.90	62.59	-14.69	QP
5	7.0780	26.16	10.84	37.00	60.00	-23.00	QP
6	7.0780	17.63	10.84	28.47	50.00	-21.53	AVG

Test Specification: *Line*

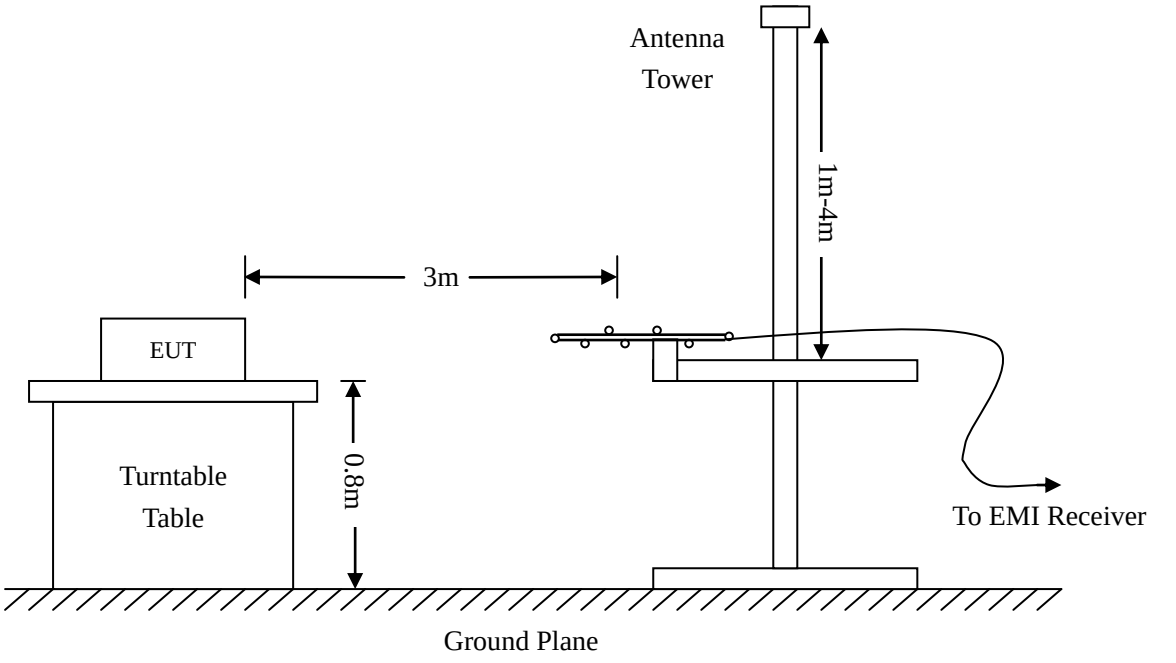


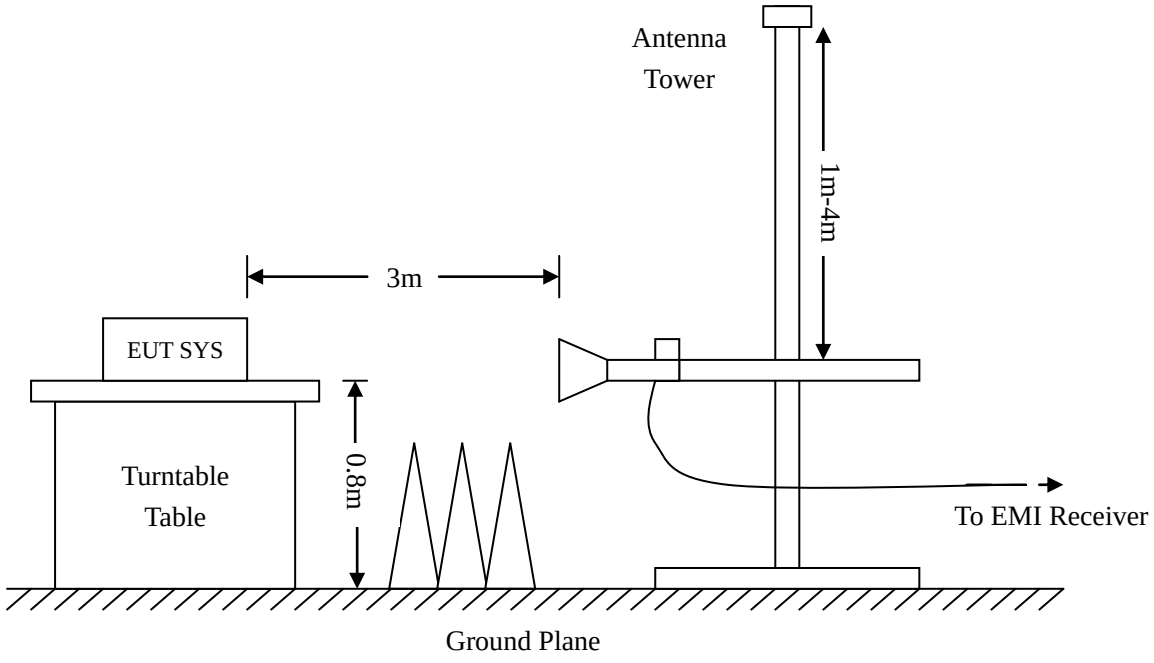
No.	Frequency	Reading	Correct	Result	Limit	Margin	Detector
	(MHz)	(dBuV)	(dB/m)	(dBuV)	(dBuV)	(dB)	
1*	0.1660	49.33	10.11	59.44	65.15	-5.71	QP
2	0.1660	35.59	10.11	45.70	55.15	-9.45	AVG
3	0.2220	39.99	10.14	50.13	62.74	-12.61	QP
4	0.2220	24.17	10.14	34.31	52.74	-18.43	AVG
5	7.0460	15.74	10.84	26.58	50.00	-23.42	AVG
6	7.1700	25.37	10.85	36.22	60.00	-23.78	QP

4. Radiated Emissions

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.





4.2 Test Receiver Setup

Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

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:

Corr. Ampl. = Indicated Reading – Corr. Factor

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 for a Class B device. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15.109(a) Limit

4.4 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-0.33 dB at **234.1684 MHz** in the **Horizontal** polarization, **TM2** mode, **9 kHz** to **1 GHz**, **3Meters**

Plot of Radiated Emissions Test Data

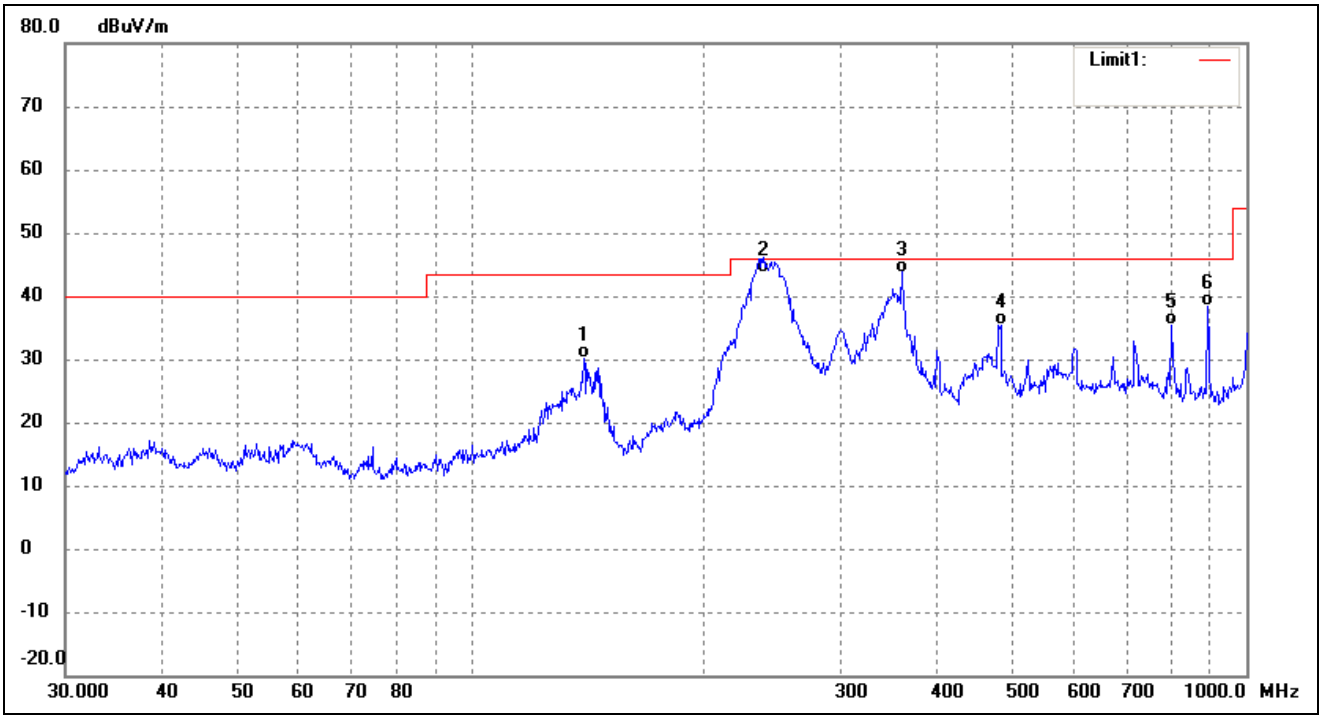
EUT: *SMART PROJECTOR*

Tested Model: *CAN*

Operating Condition: *TM1*

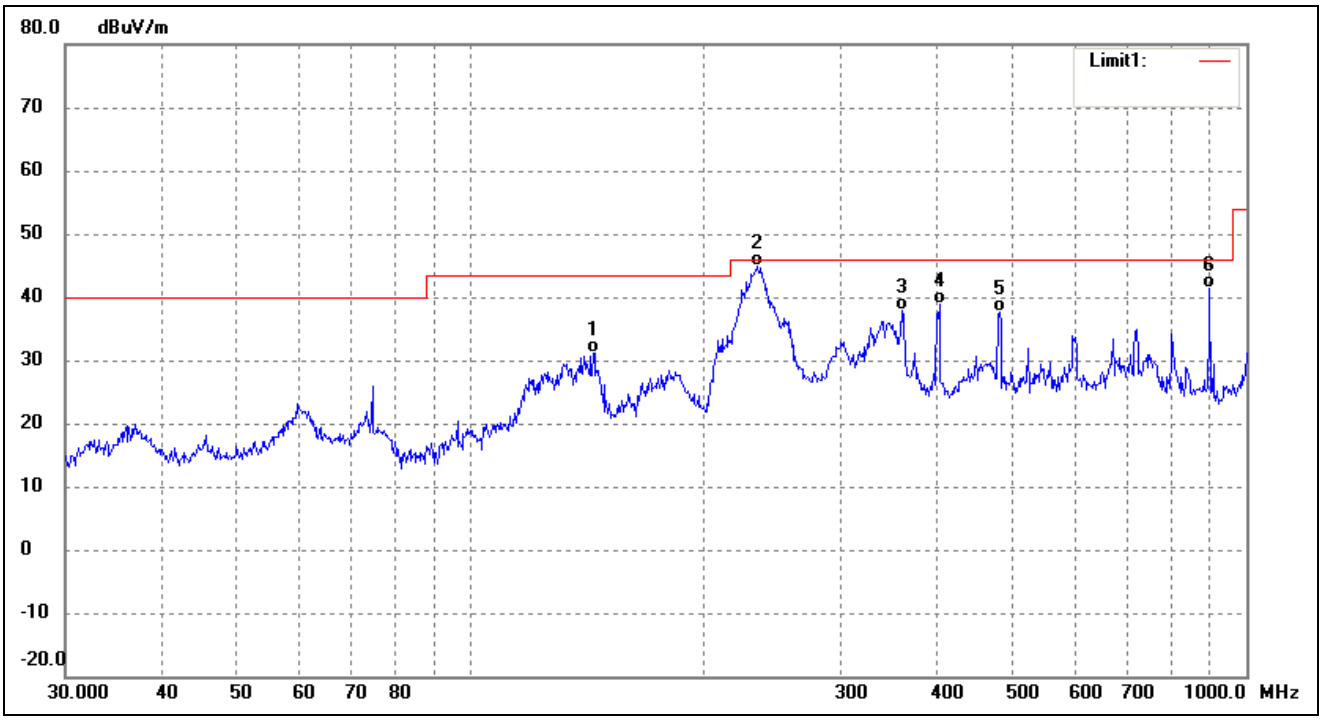
Comment: *AC 120V/60Hz; Battery: DC 11.1V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	139.8508	49.31	-19.13	30.18	43.50	-13.32	310	100	QP
2	238.3102	55.63	-12.06	43.57	46.00	-2.43	199	100	QP
3	359.1860	52.02	-8.27	43.75	46.00	-2.25	114	100	QP
4	482.2156	43.73	-8.24	35.49	46.00	-10.51	95	100	QP
5	801.7863	40.15	-4.71	35.44	46.00	-10.56	140	100	QP
6	890.7278	41.93	-3.61	38.32	46.00	-7.68	235	100	QP

Test Specification: *Vertical*

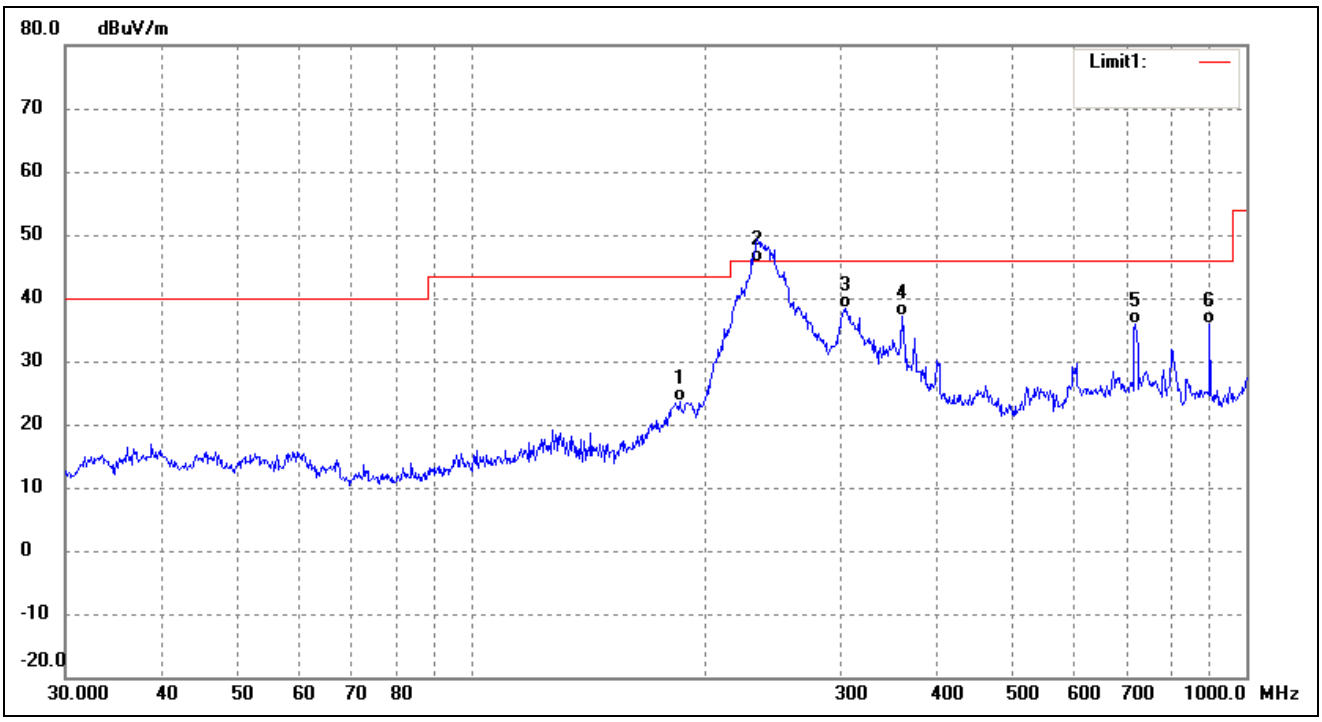


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	143.8295	50.35	-19.22	31.13	43.50	-12.37	336	100	QP
2	234.1684	57.34	-12.44	44.90	46.00	-1.10	91	100	QP
3	359.1860	46.12	-8.27	37.85	46.00	-8.15	341	100	QP
4	401.8385	46.53	-7.77	38.76	46.00	-7.24	96	100	QP
5	480.5276	45.91	-8.29	37.62	46.00	-8.38	168	100	QP
6	896.9965	45.24	-3.83	41.41	46.00	-4.59	319	100	QP

Plot of Radiated Emissions Test Data

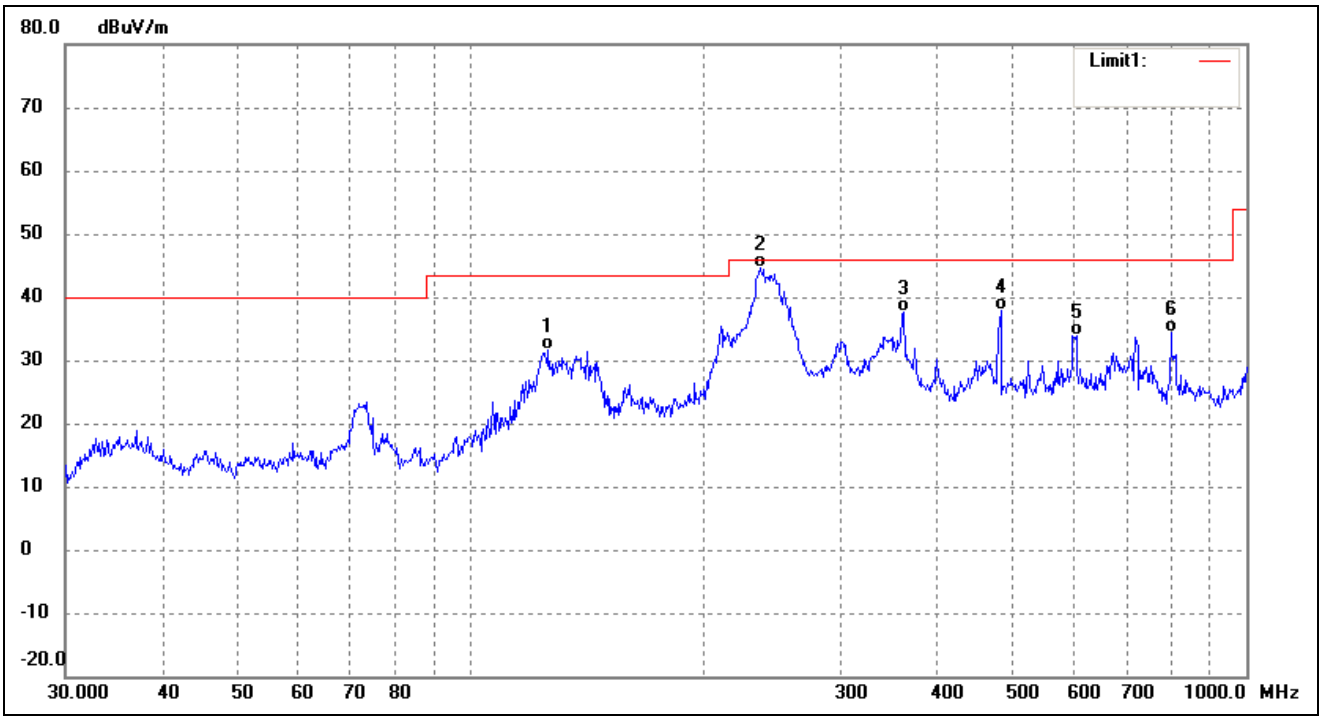
EUT: *SMART PROJECTOR*
Tested Model: *CAN*
Operating Condition: *TM2*
Comment: *AC 120V/60Hz; Battery: DC 11.1V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	185.7882	42.94	-19.34	23.60	43.50	-19.90	162	100	QP
2	234.1684	58.11	-12.44	45.67	46.00	-0.33	316	100	QP
3	303.5437	46.28	-7.92	38.36	46.00	-7.64	96	100	QP
4	359.1860	45.40	-8.27	37.13	46.00	-8.87	250	100	QP
5	719.1995	39.50	-3.58	35.92	46.00	-10.08	67	100	QP
6	896.9965	39.64	-3.83	35.81	46.00	-10.19	212	100	QP

Test Specification: *Vertical*

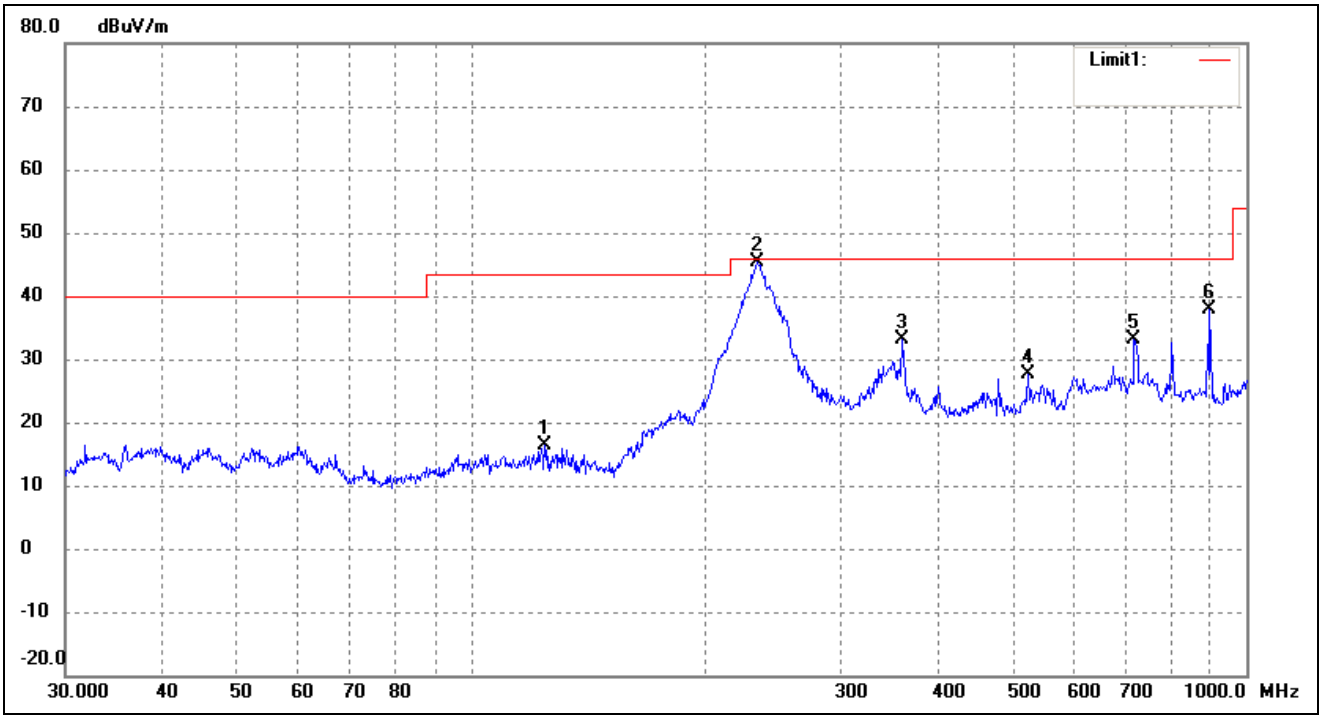


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	125.8864	49.85	-18.24	31.61	43.50	-11.89	322	100	QP
2	235.8164	56.86	-12.29	44.57	46.00	-1.43	92	100	QP
3	361.7139	45.85	-8.27	37.58	46.00	-8.42	163	100	QP
4	482.2156	46.18	-8.24	37.94	46.00	-8.06	107	100	QP
5	603.5392	36.79	-2.80	33.99	46.00	-12.01	181	100	QP
6	798.9797	39.12	-4.69	34.43	46.00	-11.57	283	100	QP

Plot of Radiated Emissions Test Data

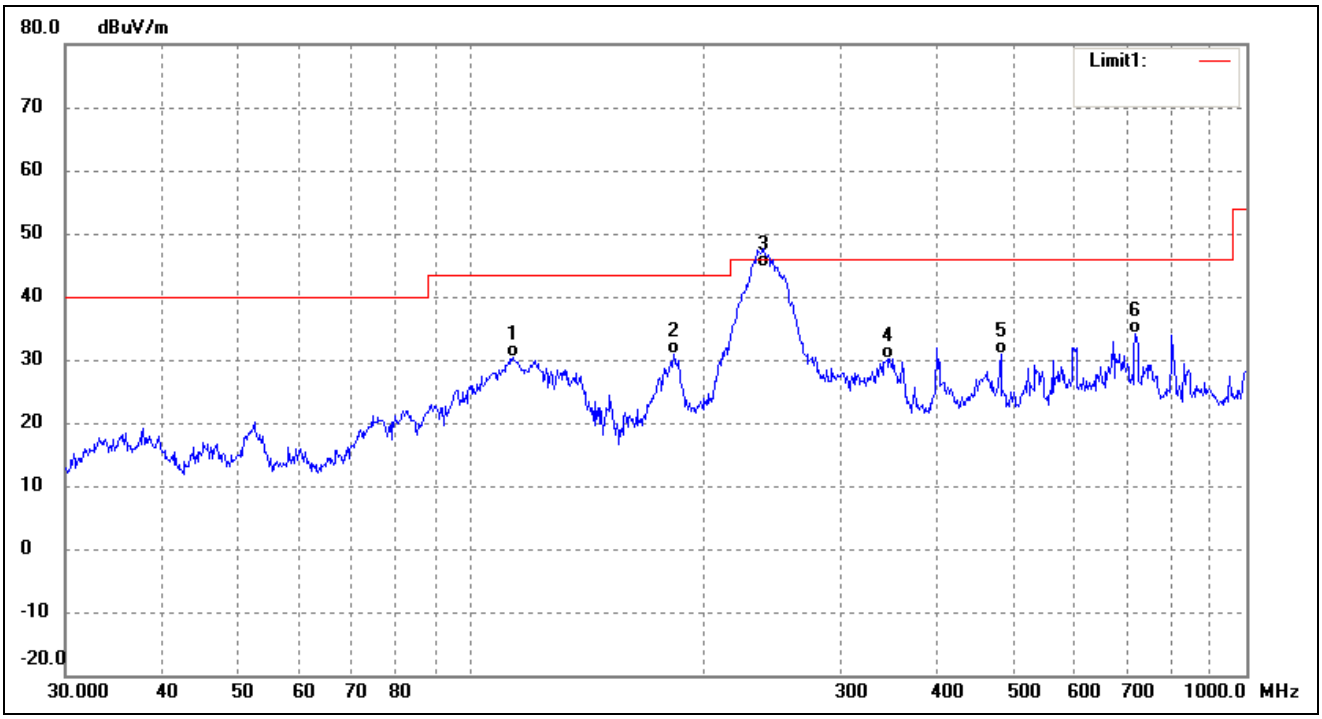
EUT: *SMART PROJECTOR*
Tested Model: *CAN*
Operating Condition: *TM3*
Comment: *AC 120V/60Hz; Battery: DC 11.1V*

Test Specification: *Horizontal*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	124.5690	34.62	-18.16	16.46	43.50	-27.04	79	100	QP
2	234.1684	57.85	-12.44	45.41	46.00	-0.59	193	100	QP
3	359.1860	41.31	-8.27	33.04	46.00	-12.96	54	100	QP
4	522.7180	34.77	-7.25	27.52	46.00	-18.48	135	100	QP
5	716.6820	36.74	-3.66	33.08	46.00	-12.92	185	100	QP
6	896.9965	41.82	-3.83	37.99	46.00	-8.01	200	100	QP

Test Specification: *Vertical*



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	( )	(cm)	
1	113.3163	48.23	-17.94	30.29	43.50	-13.21	161	100	QP
2	182.5592	50.43	-19.49	30.94	43.50	-12.56	173	100	QP
3	238.3102	56.74	-12.06	44.68	46.00	-1.32	88	100	QP
4	344.3855	38.68	-8.55	30.13	46.00	-15.87	131	100	QP
5	482.2156	39.07	-8.24	30.83	46.00	-15.17	177	100	QP
6	719.1995	37.60	-3.58	34.02	46.00	-11.98	330	100	QP

Note: Testing is carried out with frequency rang 30MHz to the 12.75GHz, which above 1GHz are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

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