

FCC Part 15B
Measurement and Test Report
For
QBEX ELECTRONICS CORPORATION
1606NW 84th Ave, Miami, FL33126, U.S.A.

FCC ID: XFM-S843D

Test Standards: FCC Part 15 Subpart B

Product Description: MID

Tested Model: S843D

Report No.: STR13038272I-3

Tested Date: 2013-03-18 to 2013-03-26

Issued Date: 2012-03-29

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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by SEM.Test Compliance Service Co., Ltd

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: QBEX ELECTRONICS CORPORATION
Address of applicant: 1606NW 84th Ave, Miami, FL33126, U.S.A.

Manufacturer: Shenzhen Switek Co., Ltd.
Address of manufacturer: 4/F, A5 BLDG, Fenghuang 1st Industrial Park,
Fuyong, Bao'an, Shenzhen, China

General Description of EUT	
Product Name:	MID
Trade Name:	/
Model No.:	S843D
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V Li-ion Battery
Rated Current:	/
Rated Power:	DC 5V
Power Adapter Model:	XHY050200LUCH
Highest Internal Frequency:	
Classification of ITE:	Class B Digital Device
Support Interface:	Audio jack,mini USB,HDMI,DC input,TF Card slot

1.2 Test Standards

The following report is prepared on behalf of the QBEX ELECTRONICS CORPORATION 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 C63.4-2003, 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.: 994117**

SEM.Test Compliance Services 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 and the Registration is 994117.

- **Industry Canada (IC) Registration No.: 7673A**

The 3m Semi-anechoic chamber of SEM.Test Compliance Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 7673A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Electronics Service Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 3/F, Jinbao Commerce Building, Xin'an Fanshen Road, Bao'an District, Shenzhen, P.R.C (518101)

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	Downloading	Test Software: CT3
TM2	Playing	Audio output
TM3	Playing	HDMI output

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Line	0.6	Shielded	Without Ferrite
DC Line	1.2	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
PC	Samsung	R20	/
TV	Samsung	ES4078T	/
Earphone	/	T247	/

Special Cable List and Details

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

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 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

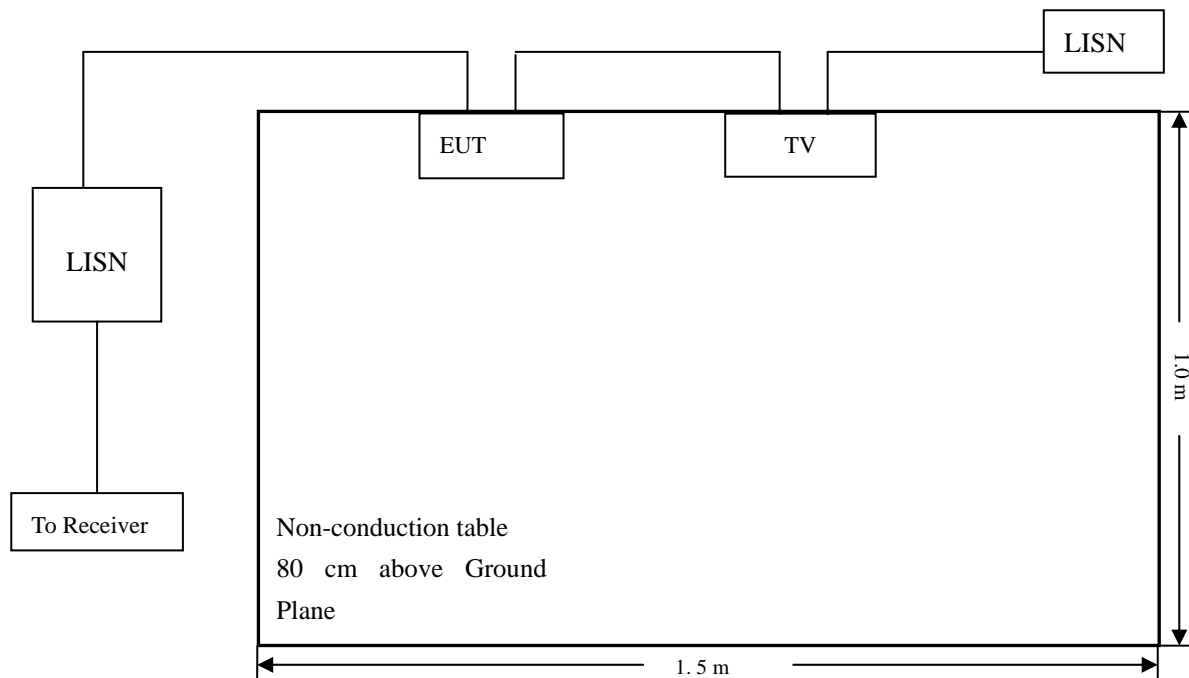
3.2 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2012-03-28	2013-03-27
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2012-03-28	2013-03-27
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2012-03-28	2013-03-27

3.3 Test Procedure

Test is conducting under the description of ANSI C63.4-2003, 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.

3.4 Basic Test Setup Block Diagram



3.5 Environmental Conditions

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

3.6 Summary of Test Results/Plots

According to the data in section 3.7, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

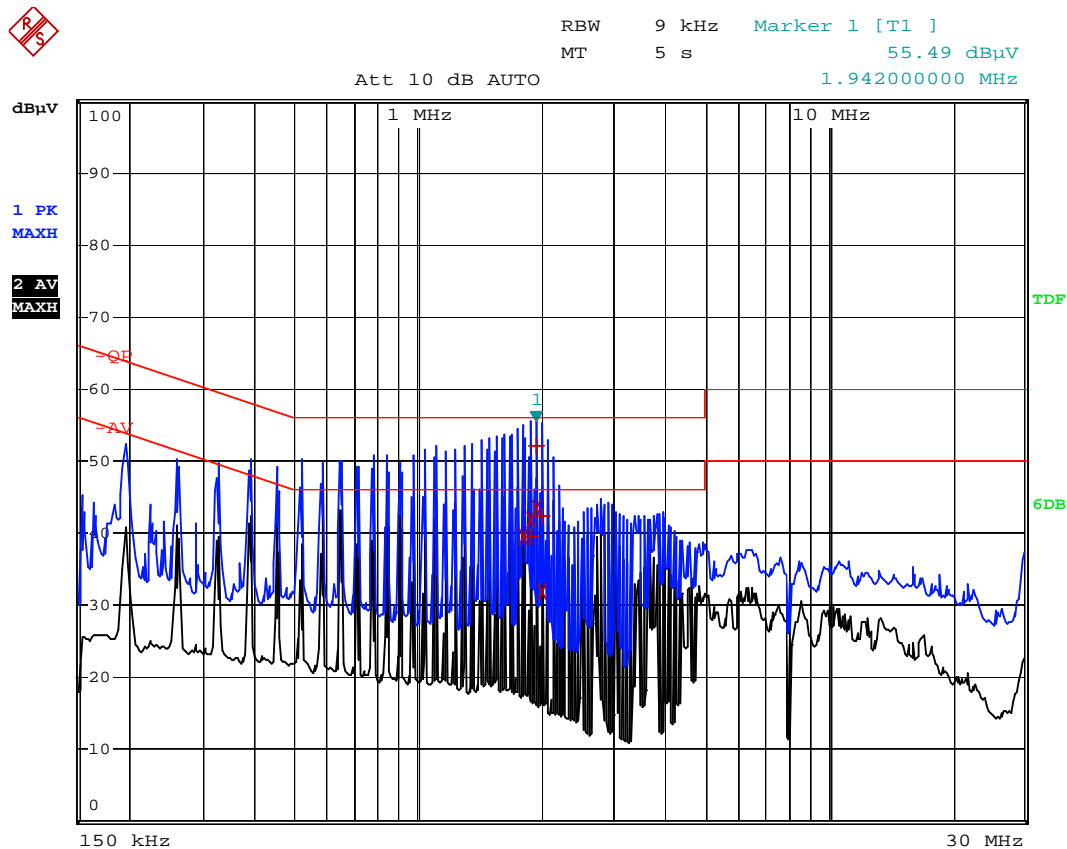
-1.36 dB at **1.882 MHz** in the **Neutral, Peak** detector, **TM2** mode, 0.15-30MHz

3.7 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

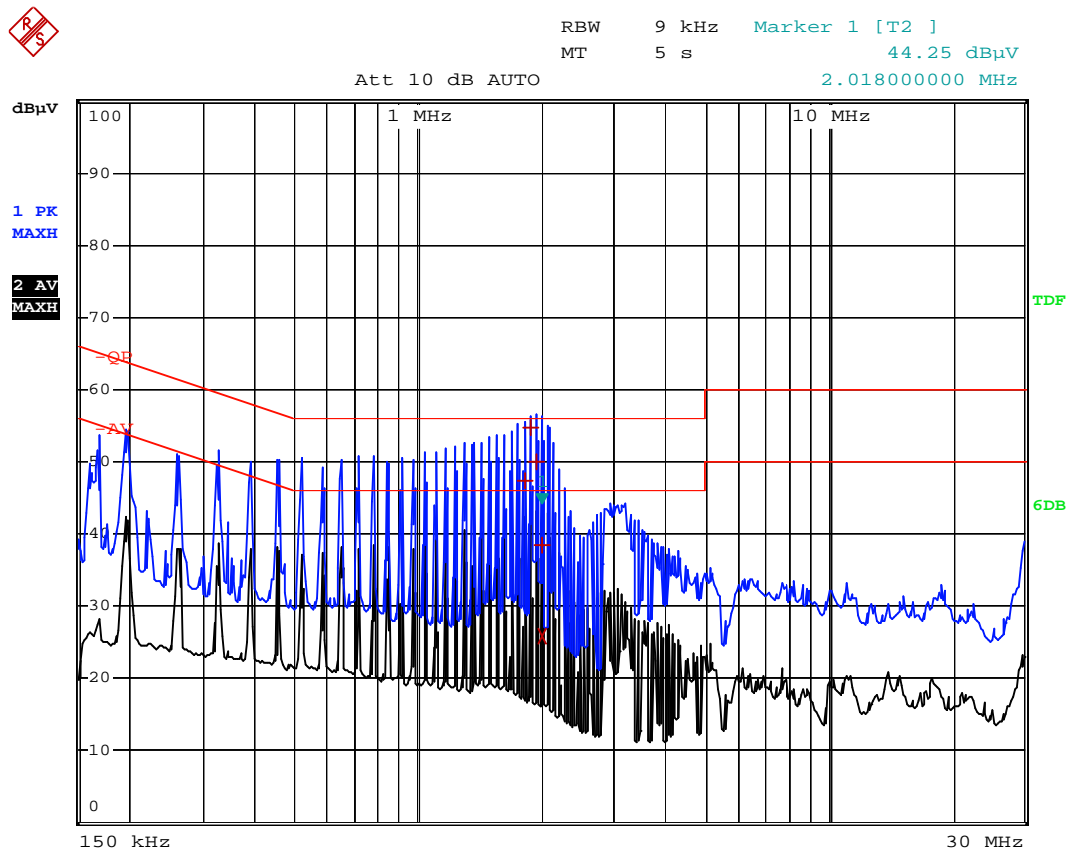
EUT: MID
Tested Model: S843D
Operating Condiation: TM2, Playing
Comment: Audio output

Test Specification: Line



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	1.814 MHz	39.59	-6.40
2 Average	1.878 MHz	41.75	-4.24
1 Quasi Peak	1.882 MHz	39.38	-16.62
1 Quasi Peak	1.942 MHz	52.15	-3.84
2 Average	1.942 MHz	43.55	-2.44
1 Quasi Peak	2.01 MHz	42.32	-13.67
2 Average	2.01 MHz	31.78	-14.22

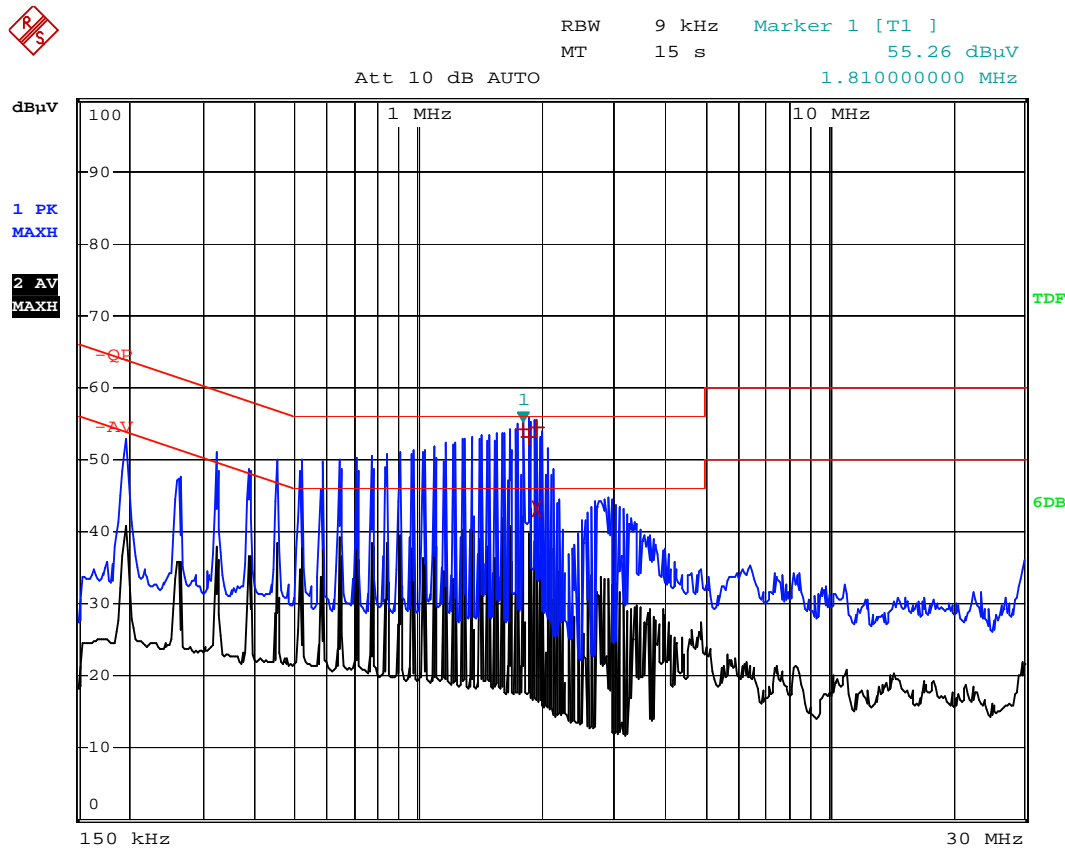
Test Specification: Neutral



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Quasi Peak	1.822 MHz	47.25	-8.74
1 Quasi Peak	1.882 MHz	54.63	-1.36
1 Quasi Peak	1.95 MHz	49.93	-6.06
2 Average	2.018 MHz	25.80	-20.19
1 Quasi Peak	2.018 MHz	38.58	-17.41

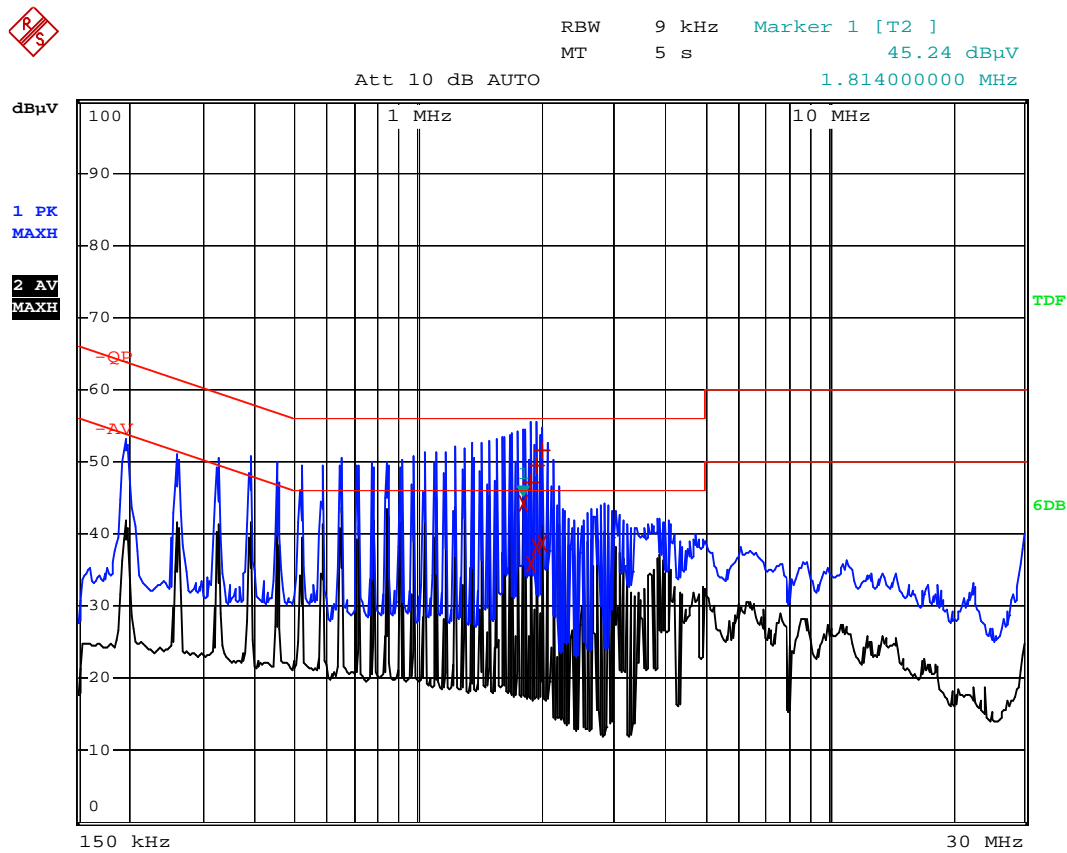
Operating Condiation: Playing
Comment: TM3, HDMI output

Test Specification: Line



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1 Quasi Peak	1.81 MHz	54.18	-1.81
1 Quasi Peak	1.87 MHz	53.25	-2.74
1 Quasi Peak	1.938 MHz	54.41	-1.58
2 Average	1.938 MHz	43.08	-2.91

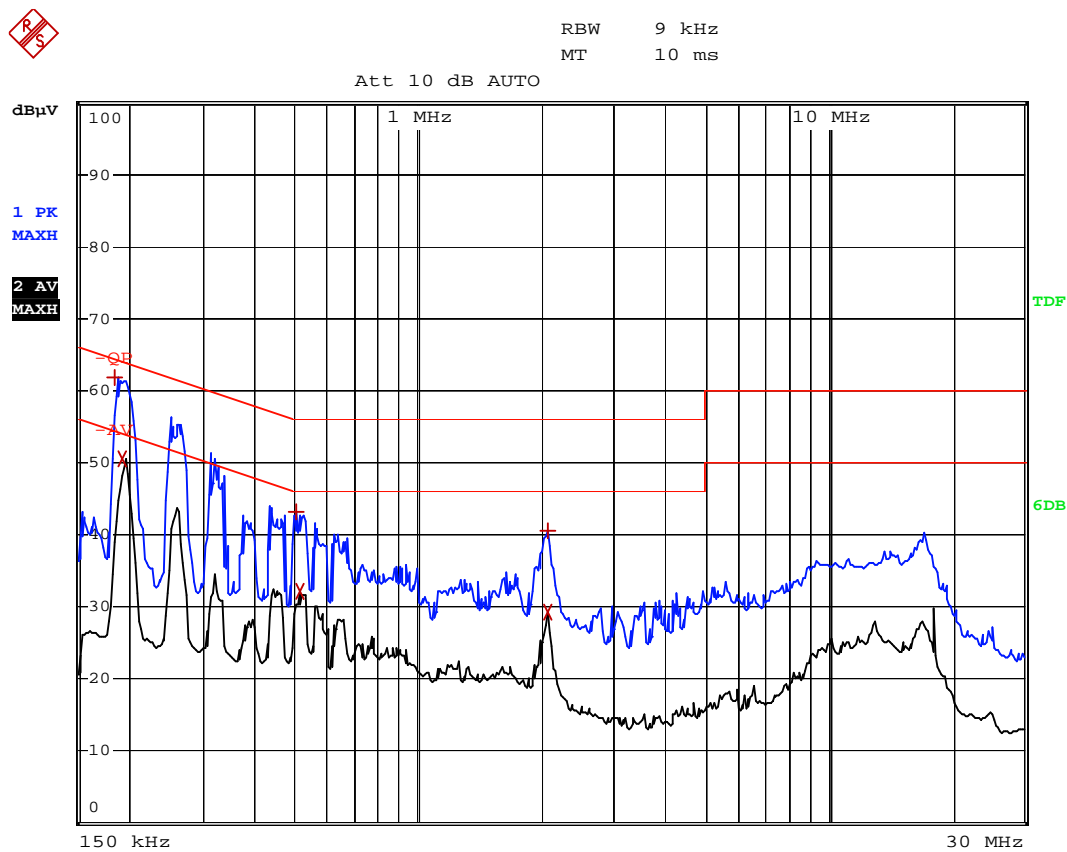
Test Specification: Neutral



EDIT PEAK LIST (Final Measurement Results)			
Trace1:	-QP		
Trace2:	-AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
2 Average	1.814 MHz	44.13	-1.86
1 Quasi Peak	1.882 MHz	47.12	-8.87
2 Average	1.882 MHz	35.76	-10.23
1 Quasi Peak	1.946 MHz	49.46	-6.53
2 Average	1.946 MHz	38.14	-7.85
1 Quasi Peak	2.002 MHz	51.63	-4.36
2 Average	2.01 MHz	38.62	-7.37

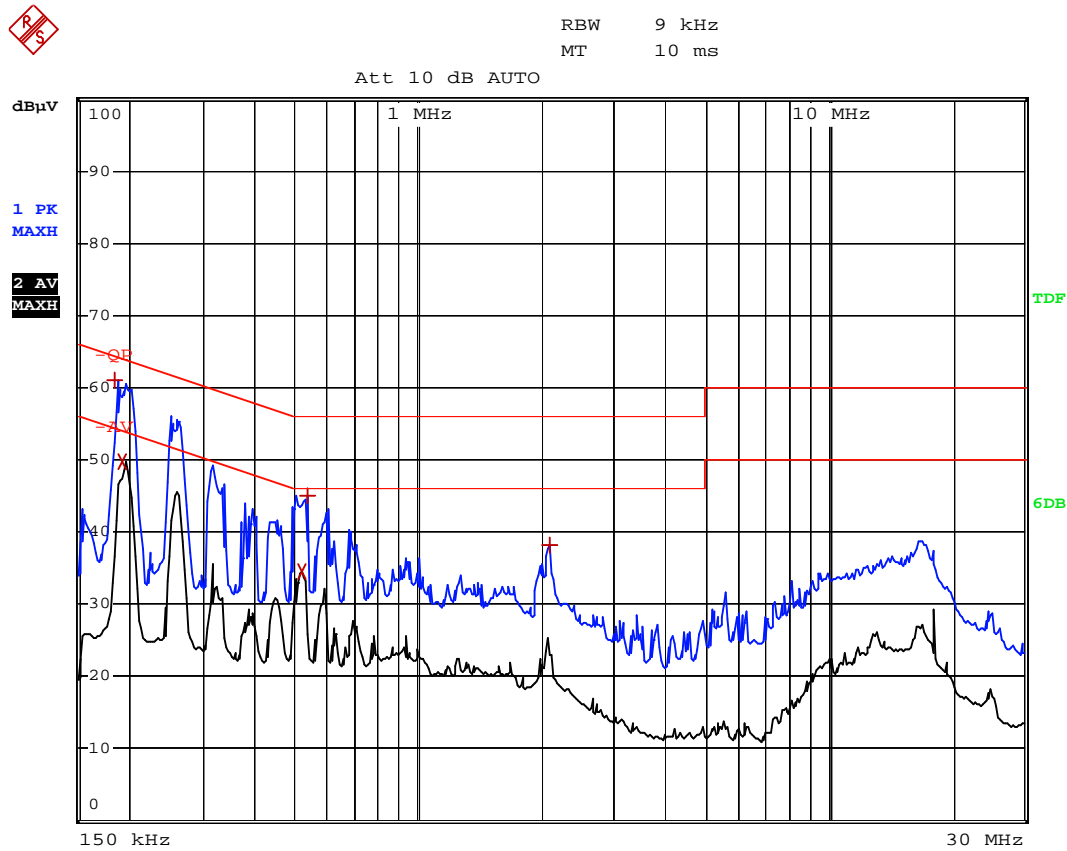
Operating Condiation: TMI, Downloading
Comment: Connect to PC

Test Specification: Line



EDIT PEAK LIST (Prescan Results)				
Trace1:	-QP			
Trace2:	-AV			
Trace3:	---			
TRACE		FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1	Max Peak	186 kHz	61.69	-2.52
2	Average	194 kHz	50.41	-3.45
1	Max Peak	506 kHz	43.17	-12.82
2	Average	514 kHz	32.13	-13.86
1	Max Peak	2.062 MHz	40.55	-15.44
2	Average	2.062 MHz	29.17	-16.82

Test Specification: Neutral



EDIT PEAK LIST (Prescan Results)				
Trace1:		-QP		
Trace2:		-AV		
Trace3:		---		
TRACE		FREQUENCY	LEVEL dBμV	DELTA LIMIT dB
1	Max Peak	186 kHz	60.90	-3.31
2	Average	194 kHz	49.60	-4.25
2	Average	518 kHz	34.51	-11.48
1	Max Peak	534 kHz	44.99	-11.01
1	Max Peak	2.09 MHz	38.07	-17.92

4. Radiated Emissions

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Equipment List and Details

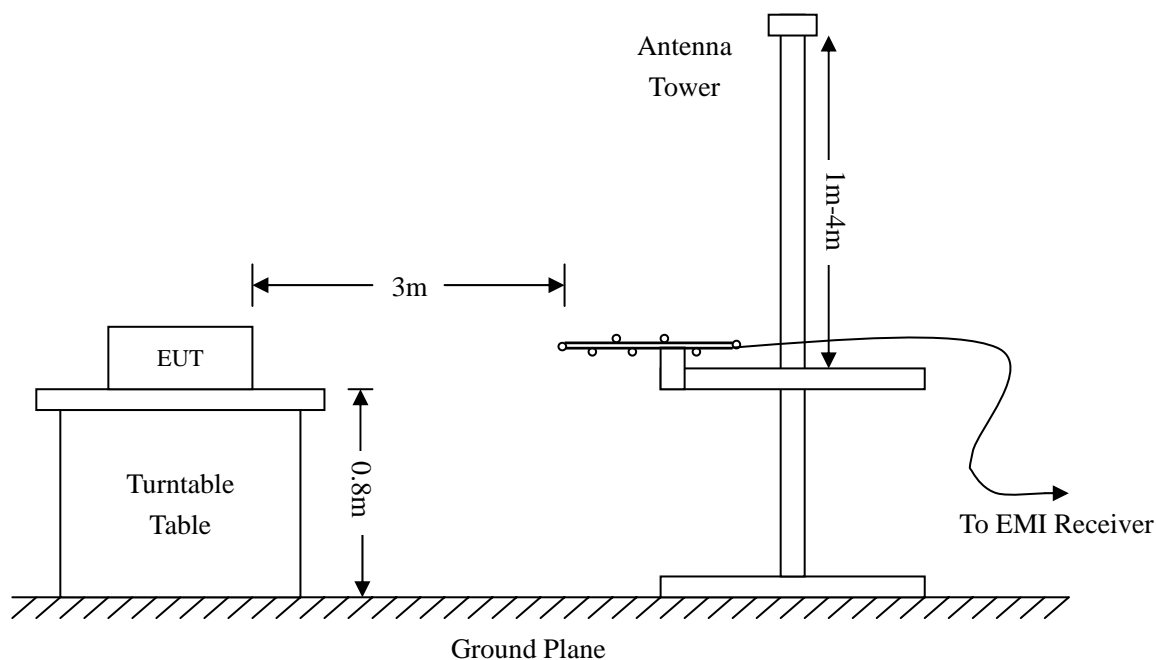
Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Spectrum Analyzer	R&S	FSP	836079/035	2012-03-28	2013-03-27
EMI Test Receiver	R&S	ESVB	825471/005	2012-03-28	2013-03-27
Pre-amplifier	Agilent	8447F	3113A06717	2012-03-28	2013-03-27
Pre-amplifier	Compliance Direction	PAP-0118	24002	2012-03-28	2013-03-27
Trilog Broadband Antenna	SCHWARZBECK	VULB9163	9163-333	2013-02-25	2014-02-24
Horn Antenna	ETS	3117	00086197	2013-02-25	2014-02-24
Loop Antenna	SCHWARZECK	HFRA 5165	9365	2013-02-25	2014-02-24

4.3 Test Procedure

The setup of EUT is according with per ANSI C63.4-2003 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.



4.4 Test Receiver Setup

During the radiated emission test for above 1GHz, the test receiver was set with the following configurations:

For peak detector:

RBW = 1000kHz, VBW = 3000kHz, Sweep Time = Auto

For average detector:

RBW = 1000kHz, VBW = 10Hz, Sweep Time = Auto

4.5 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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

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

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

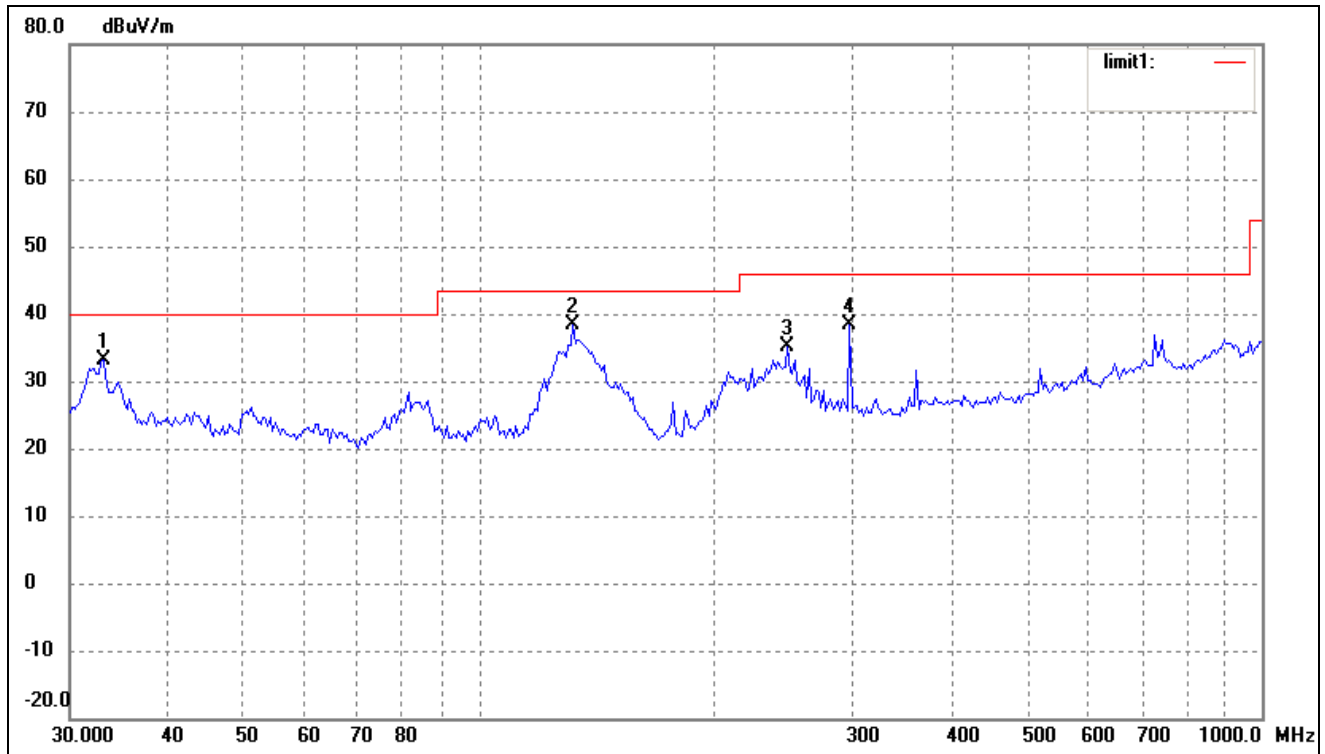
4.6 Environmental Conditions

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

4.7 Summary of Test Results/Plots

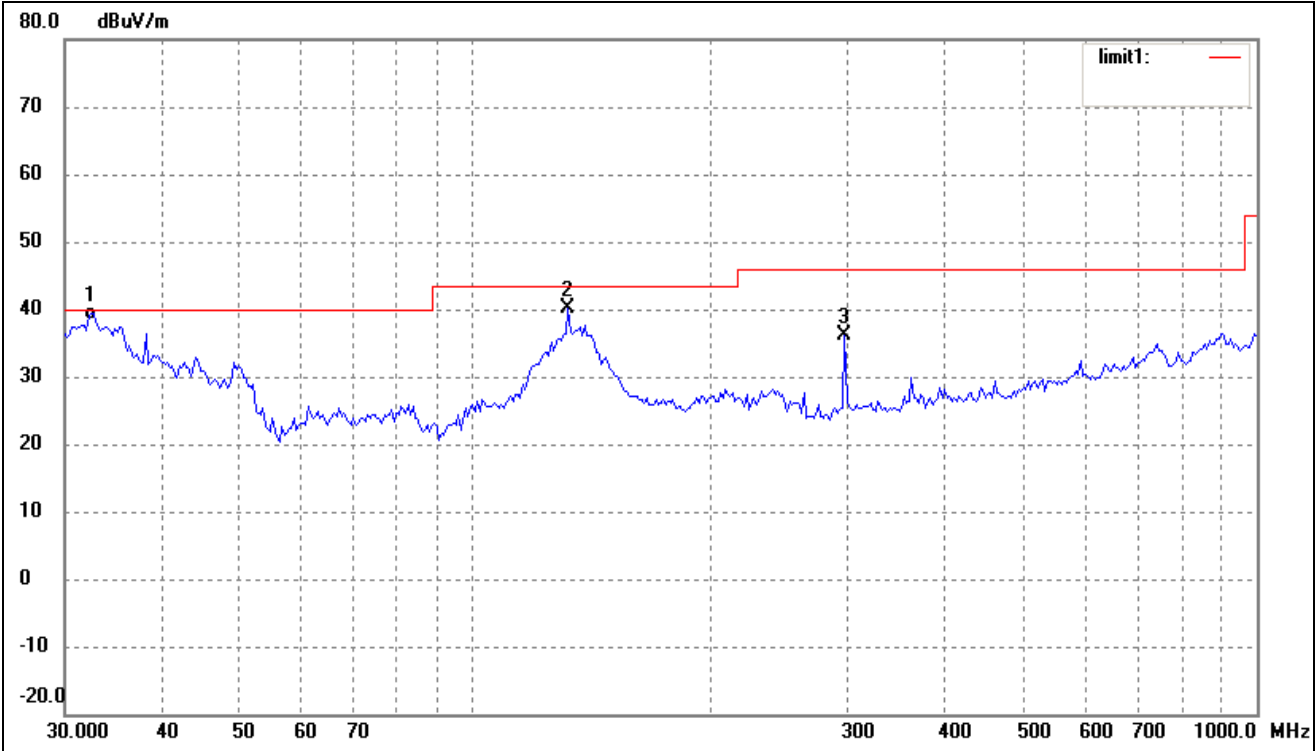
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-1.11 dB at 482.2155 MHz in the Vertical polarization in the TM1 Mode, 9 kHz to 6 GHz, 3Meters

Plot of Radiated Emissions Test Data*EUT: MID**Tested Model: S843D**Operating Condition: TM2, Playing**Comment: Audio output**Test Specification: Horizontal*

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	33.0950	24.56	8.56	33.12	40.00	-6.88	360	100	peak
2	131.7577	34.33	4.00	38.33	43.50	-5.17	360	100	peak
3	247.6819	27.79	7.22	35.01	46.00	-10.99	360	100	peak
4	297.2241	28.35	10.04	38.39	46.00	-7.61	360	100	peak

Test Specification: Vertical

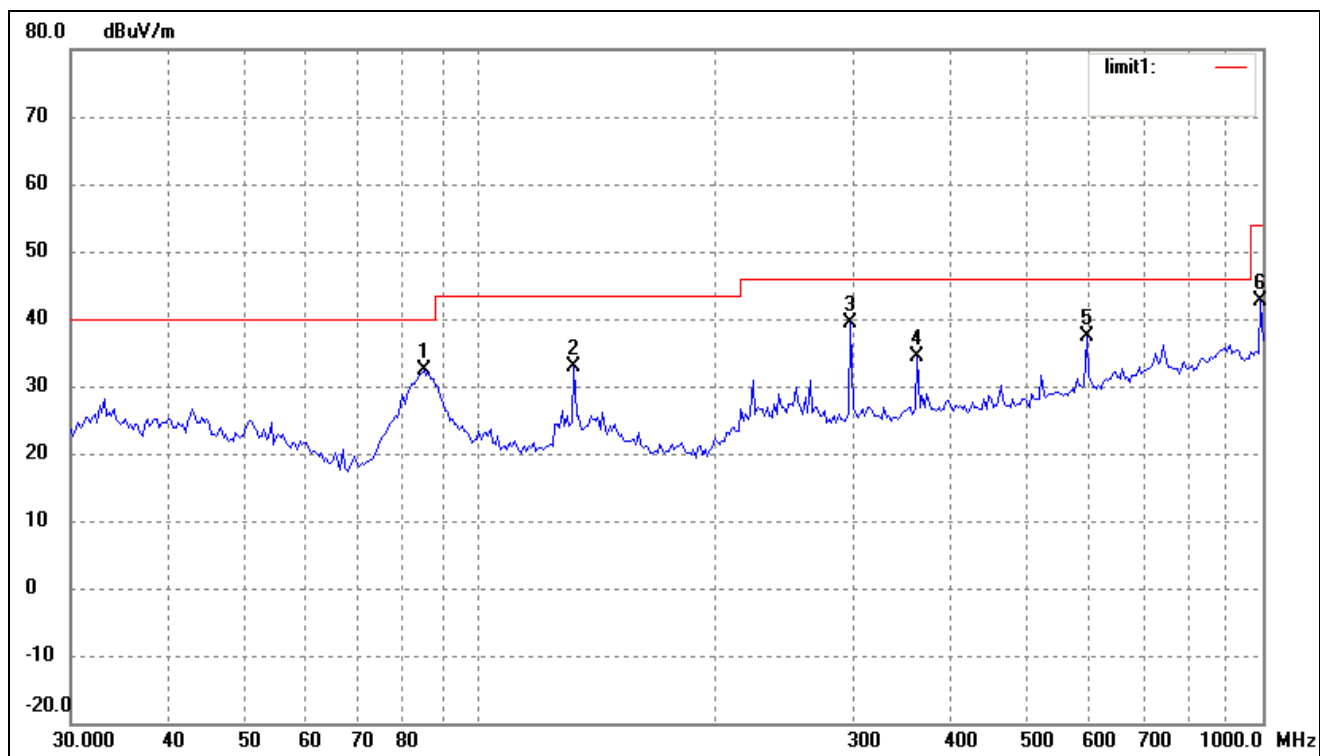


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	32.4059	30.00	8.44	38.44	40.00	-1.56	51	100	QP
2	131.7576	36.18	4.00	40.18	43.50	-3.32	360	100	peak
3	297.2241	26.04	10.04	36.08	46.00	-9.92	360	100	peak

Operating Condition: TM3, Playing

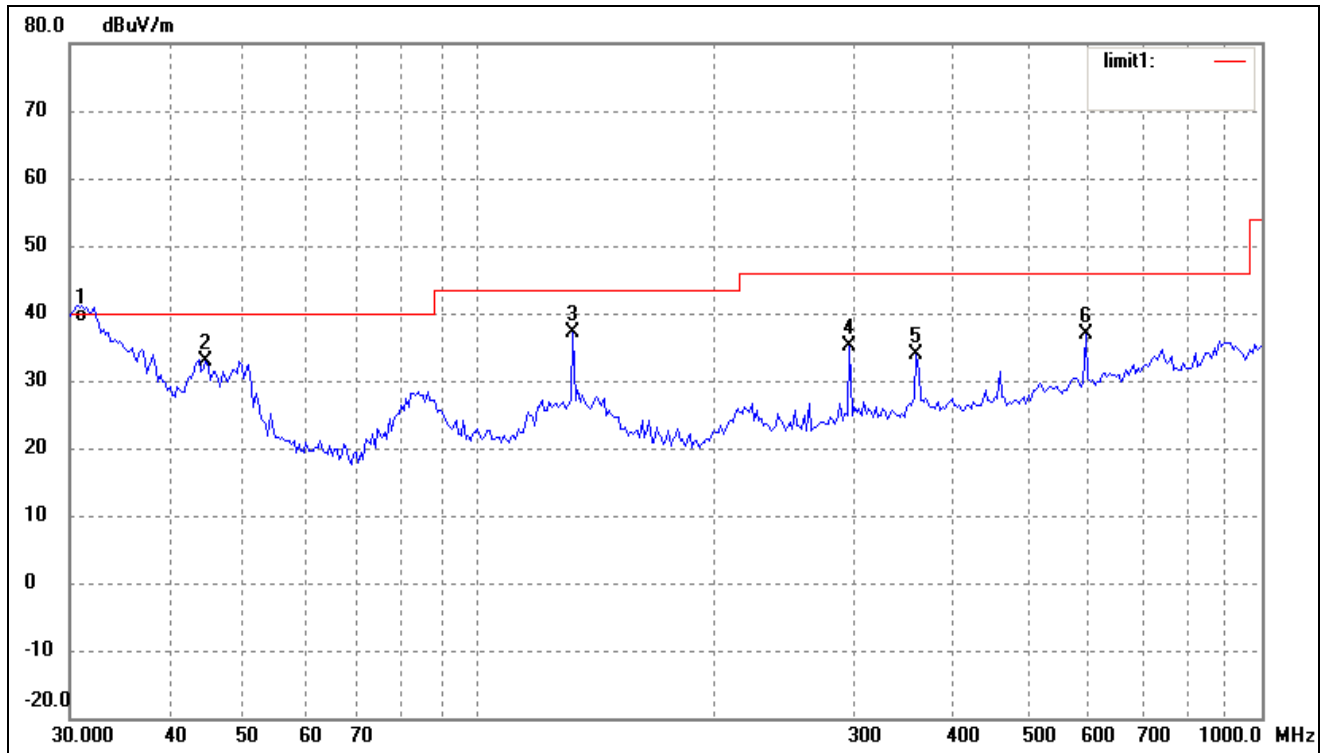
Comment: HDMI output

Test Specification: Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	84.7019	29.38	3.00	32.38	40.00	-7.62	360	100	peak
2	131.7577	28.88	4.00	32.88	43.50	-10.62	360	100	peak
3	297.2241	29.33	10.04	39.37	46.00	-6.63	360	100	peak
4	361.7139	23.74	10.69	34.43	46.00	-11.57	360	100	peak
5	595.1329	22.78	14.63	37.41	46.00	-8.59	360	100	peak
6	993.0114	23.18	19.53	42.71	54.00	-11.29	360	100	peak

Test Specification: Vertical

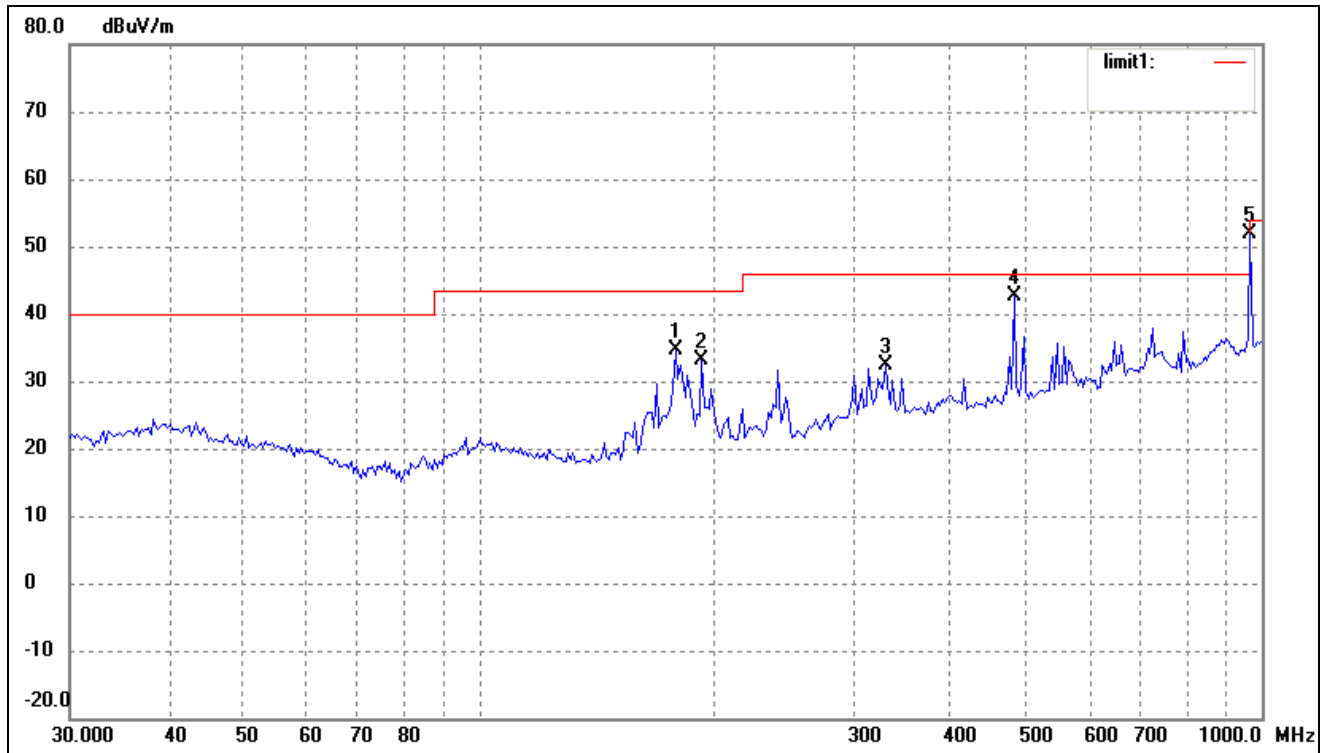


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	31.0706	30.40	8.22	38.62	40.00	-1.38	52	100	QP
2	44.7434	24.70	8.24	32.94	40.00	-7.06	360	100	peak
3	131.7577	33.16	4.00	37.16	43.50	-6.34	360	100	peak
4	297.2241	25.01	10.04	35.05	46.00	-10.95	360	100	peak
5	361.7139	23.19	10.69	33.88	46.00	-12.12	360	100	peak
6	595.1329	22.36	14.63	36.99	46.00	-9.01	360	100	peak

Operating Condition: TM1, Downloading

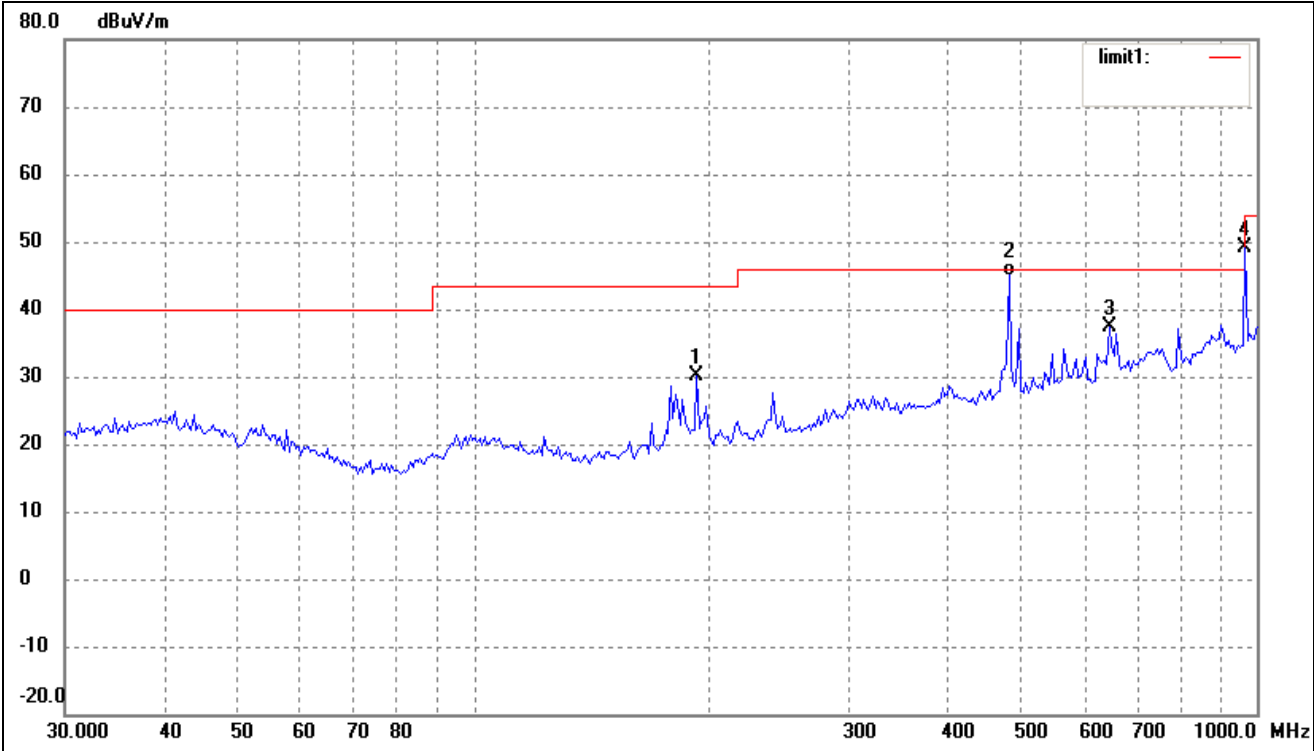
Comment: Connect to PC

Test Specification: Horizontal

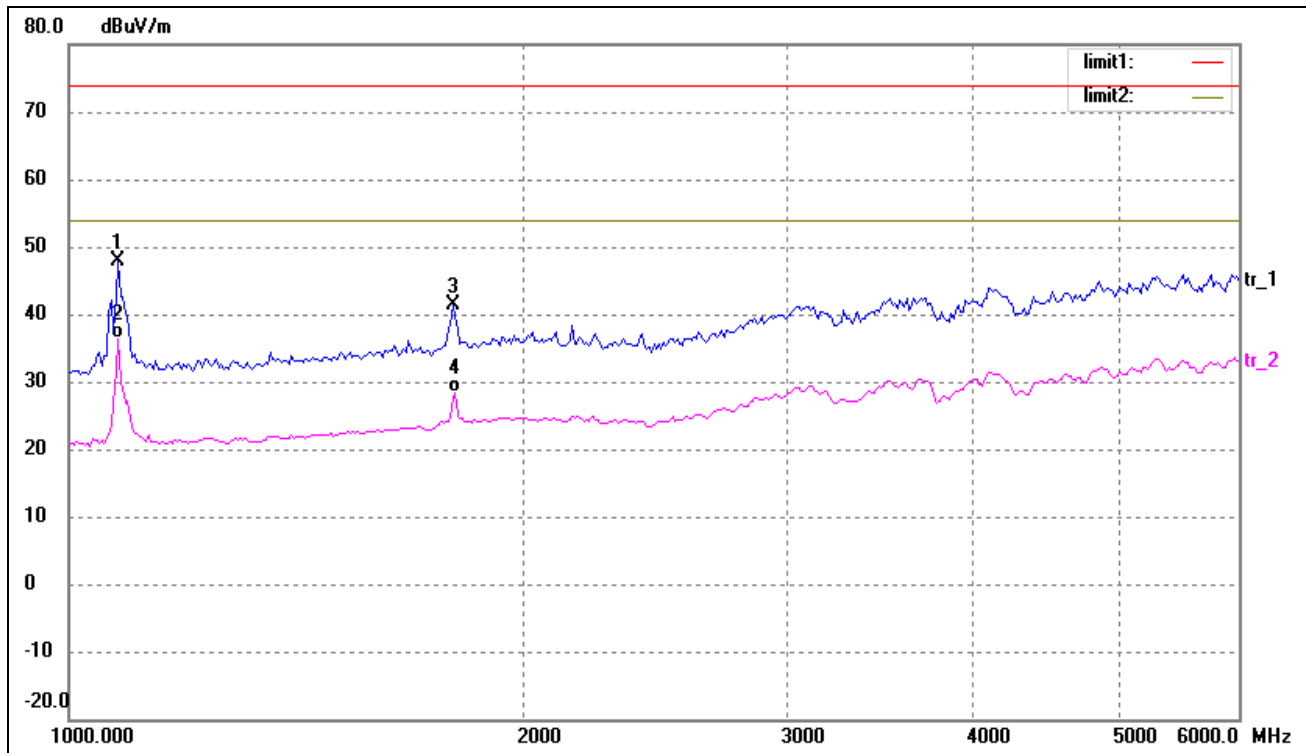


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	178.1327	30.99	3.74	34.73	43.50	-8.77	360	100	peak
2	192.4186	28.93	4.31	33.24	43.50	-10.26	360	100	peak
3	330.1949	22.02	10.28	32.30	46.00	-13.70	360	100	peak
4	482.2156	31.03	11.49	42.52	46.00	-3.48	360	100	peak
5	965.5421	33.60	18.37	51.97	54.00	-2.03	360	100	peak

Test Specification: Vertical

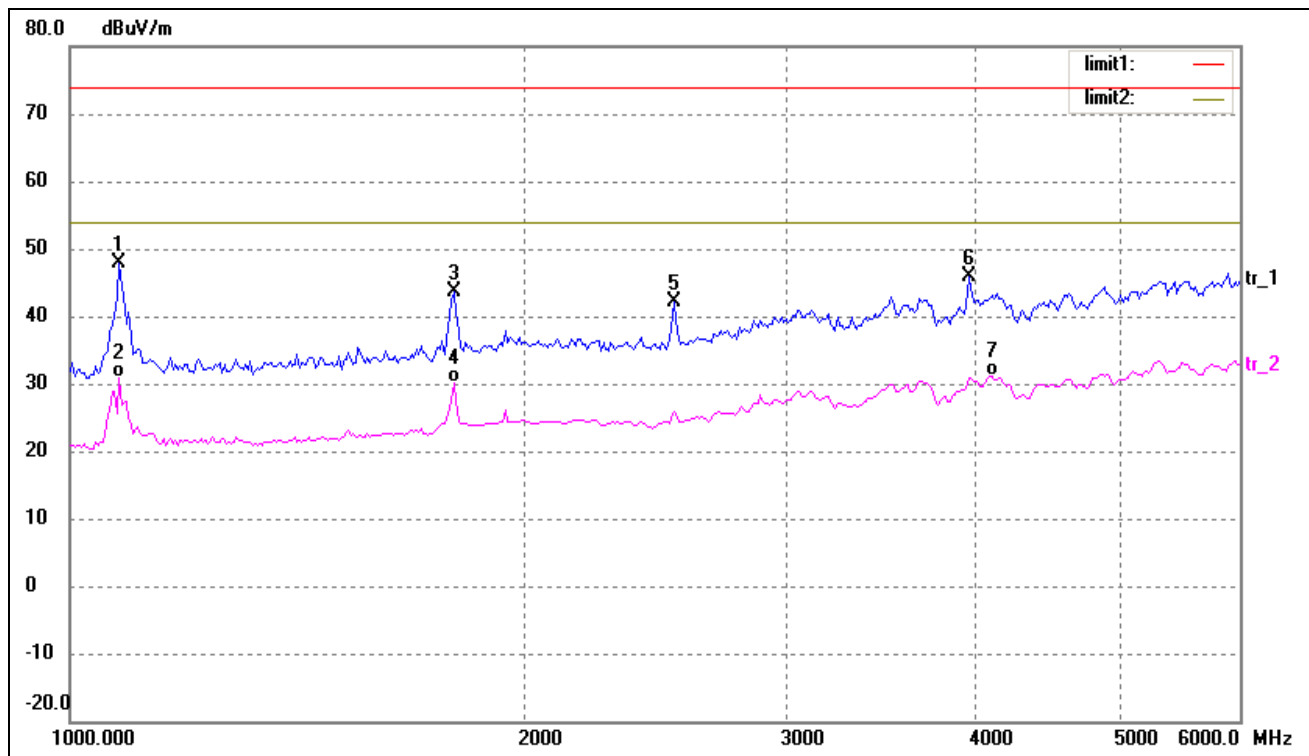


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	192.4185	25.84	4.31	30.15	43.50	-13.35	148	100	peak
2	482.2155	33.40	11.49	44.89	46.00	-1.11	360	100	peak
3	647.3855	22.15	15.16	37.31	46.00	-8.69	360	100	peak
4	965.5421	30.84	18.37	49.21	54.00	-4.79	360	100	peak

Plot of Radiated Emissions Test Data Above 1GHz*EUT: MID**Tested Model: S843D**Operating Condition: TM2, Playing**Comment: Audio output**Test Specification: Horizontal*

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1078.158	63.52	-15.68	47.84	74.00	-26.16	360	100	peak
2	1078.158	52.00	-15.68	36.32	54.00	-17.68	360	100	AVG
3	1799.839	54.18	-12.76	41.42	74.00	-32.58	360	100	peak
4	1806.300	41.11	-12.72	28.39	54.00	-25.61	360	100	AVG

Test Specification: Vertical

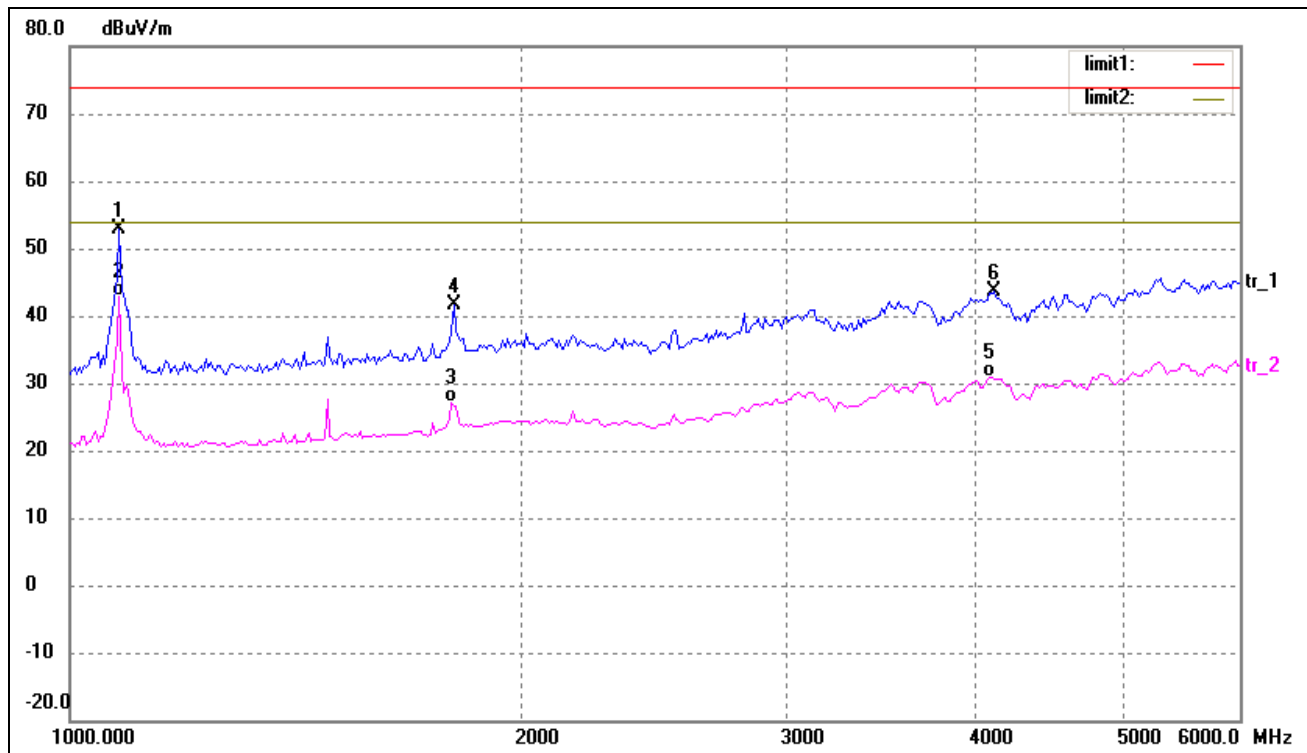


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1078.158	63.63	-15.68	47.95	74.00	-26.05	360	100	peak
2	1078.158	46.59	-15.68	30.91	54.00	-23.09	360	100	AVG
3	1799.839	56.49	-12.76	43.73	74.00	-30.27	360	100	peak
4	1799.839	42.99	-12.76	30.23	54.00	-23.77	360	100	AVG
5	2520.728	53.77	-11.61	42.16	74.00	-31.84	360	100	peak
6	3959.316	50.99	-5.08	45.91	74.00	-28.09	360	100	peak
7	4103.772	36.09	-4.93	31.16	54.00	-22.84	360	100	AVG

Operating Condition: TM3, Playing

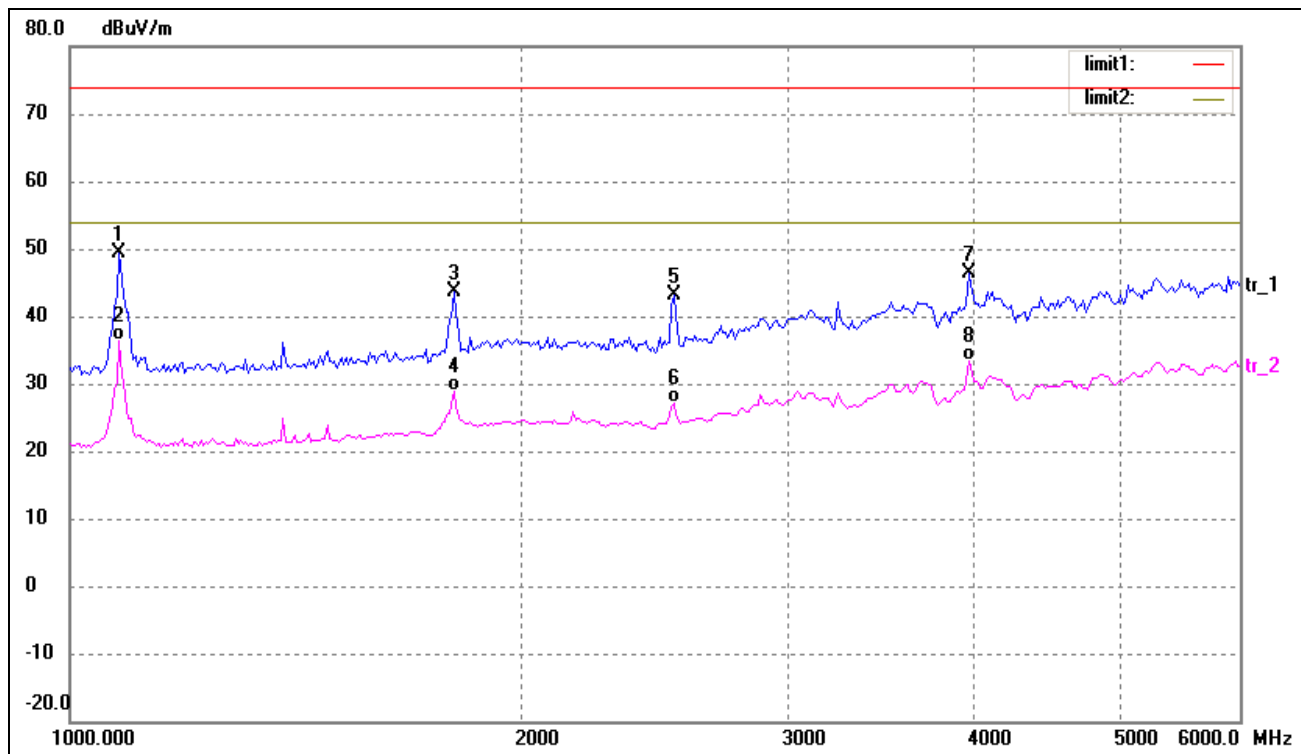
Comment: HDMI output

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1078.158	68.52	-15.68	52.84	74.00	-21.16	360	100	peak
2	1078.158	58.53	-15.68	42.85	54.00	-11.15	360	100	AVG
3	1793.401	39.89	-12.80	27.09	54.00	-26.91	360	100	AVG
4	1799.839	54.36	-12.76	41.60	74.00	-32.40	360	100	peak
5	4089.092	35.90	-4.94	30.96	54.00	-23.04	360	100	AVG
6	4118.504	48.51	-4.92	43.59	74.00	-30.41	360	100	peak

Test Specification: Vertical

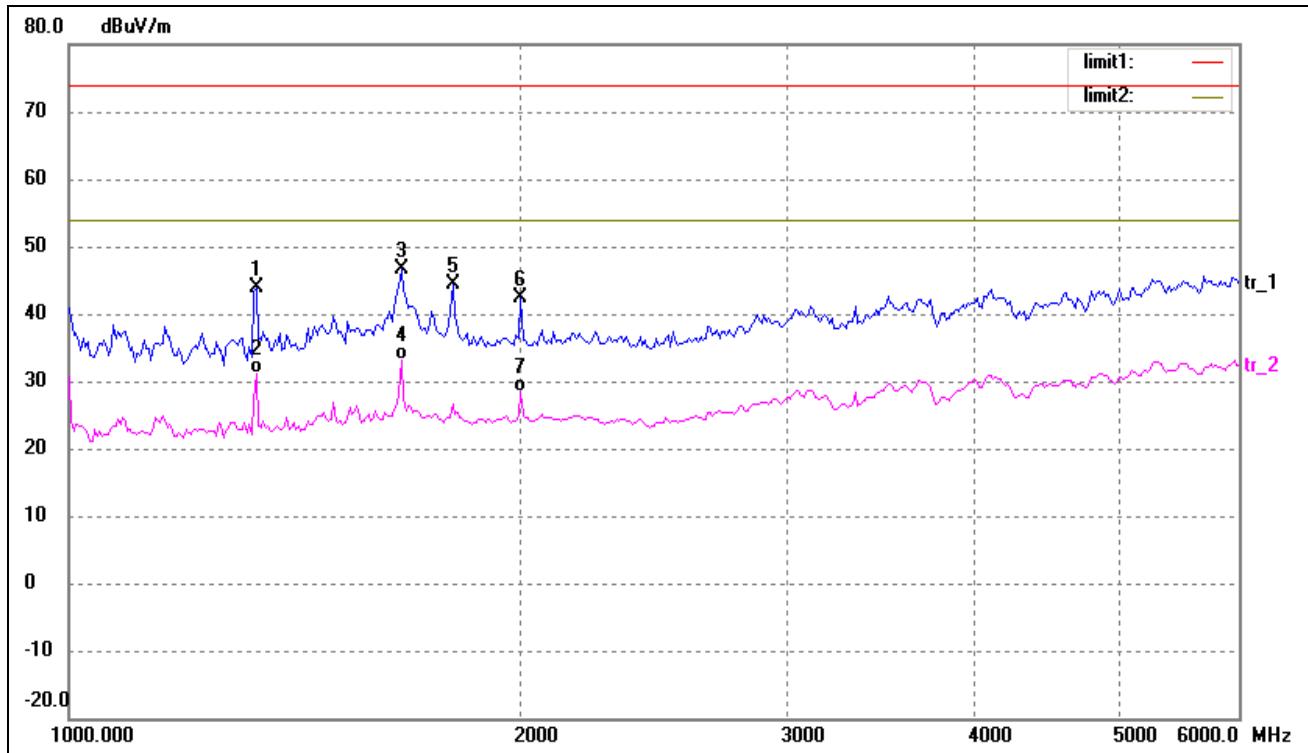


No.	Frequency	Reading	Correct	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	1078.158	65.11	-15.68	49.43	74.00	-24.57	360	100	peak
2	1078.158	52.10	-15.68	36.42	54.00	-17.58	360	100	AVG
3	1799.839	56.27	-12.76	43.51	74.00	-30.49	360	100	peak
4	1799.839	41.61	-12.76	28.85	54.00	-25.15	360	100	AVG
5	2520.728	54.85	-11.61	43.24	74.00	-30.76	360	100	peak
6	2520.728	38.74	-11.61	27.13	54.00	-26.87	360	100	AVG
7	3959.316	51.50	-5.08	46.42	74.00	-27.58	360	100	peak
8	3959.316	38.51	-5.08	33.43	54.00	-20.57	360	100	AVG

Operating Condition: TM1, Downloading

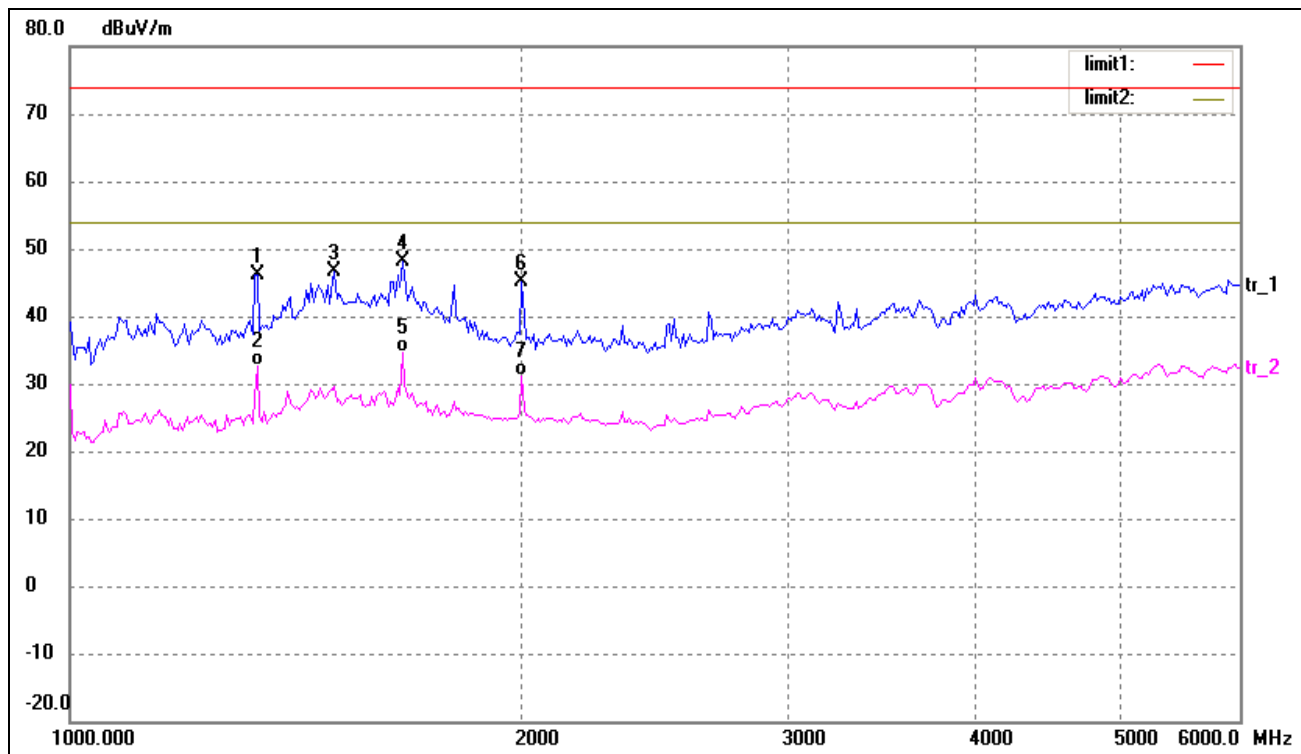
Comment: Connect to PC

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1332.000	58.74	-14.97	43.77	74.00	-30.23	360	100	peak
2	1332.000	45.99	-14.97	31.02	54.00	-22.98	360	100	AVG
3	1663.393	60.21	-13.56	46.65	74.00	-27.35	360	100	peak
4	1663.393	46.71	-13.56	33.15	54.00	-20.85	360	100	AVG
5	1799.839	57.03	-12.76	44.27	74.00	-29.73	360	100	peak
6	1996.946	54.14	-11.65	42.49	74.00	-31.51	360	100	peak
7	1996.946	39.92	-11.65	28.27	54.00	-25.73	360	100	AVG

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	1332.000	61.13	-14.97	46.16	74.00	-27.84	360	100	peak
2	1332.000	47.51	-14.97	32.54	54.00	-21.46	360	100	AVG
3	1499.209	61.08	-14.50	46.58	74.00	-27.42	360	100	peak
4	1663.393	61.65	-13.56	48.09	74.00	-25.91	360	100	peak
5	1663.393	48.29	-13.56	34.73	54.00	-19.27	360	100	AVG
6	1996.946	56.86	-11.65	45.21	74.00	-28.79	360	100	peak
7	1996.946	42.83	-11.65	31.18	54.00	-22.82	360	100	AVG

Note: Testing is carried out with frequency rang 9kHz to 6GHz. The measurements greater than 20dB below the limit from 9kHz to 30MHz..

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