APPLICATION CERTIFICATION FCC Part 15B
On Behalf of
HONG KONG NATURAL SOUND ELECTRONICS LIMITED

MP4
Model No.: ID1839D, Eclipse-V180

FCC ID: PWK-ID1839D

Prepared for	:	HONG KONG NATURAL SOUND ELECTRONICS LIMITED
Address	:	FLAT/RM M 4/F CONTINENTAL MANSION 300 KING'S ROAD HONG KONG
Prepared by	:	ACCURATE TECHNOLOGY CO. LTD
Address	:	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China
		Tel: (0755) 26503290
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Report Number	:	ATE20131824
Date of Test	:	Aug 25, 2013
Date of Report	:	Aug 26, 2013

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Description Page

Test Report Certification

Applicant **:** HONG KONG NATURAL SOUND ELECTRONICS LIMITED

Manufacturer **:** Natural Sound Electronics (Shenzhen) Co., Ltd.

EUT Description **:** MP4

(A) MODEL NO.: ID1839D, Eclipse-V180

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: DC 3.7V (Li-polymer battery) or DC 5V (Power by USB port)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B
ANSI C63.4: 2009

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

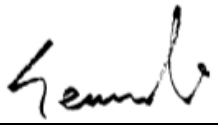
This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : Aug 25, 2013

Prepared by :

(Eric, Engineer)

Approved & Authorized Signer :



(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	MP4
Model Number	:	ID1839D, Eclipse-V180 (Note: These samples are same except for the appearance color is difference. So we prepare the ID1839D for FCC test.)
Power Supply	:	DC 3.7V (Li-polymer battery) or DC 5V (Power by USB port)
Highest operation frequency of the EUT:	:	96MHz
Applicant	:	HONG KONG NATURAL SOUND ELECTRONICS LIMITED
Address	:	FLAT/RM M 4/F CONTINENTAL MANSION 300 KING'S ROAD HONG KONG
Manufacturer	:	Natural Sound Electronics (Shenzhen) Co., Ltd.
Address	:	4th building, Xinyuan industrial zone, Gushu village, Bao'an district, Shenzhen, China
Date of sample received	:	Aug 22, 2013
Date of Test	:	Aug 25, 2013

1.2. Accessory and Auxiliary Equipment

PC	Manufacturer: LENOVO M/N: 4290-RT8 S/N: R9-FW93G 11/08

1.3. Description of Test Facility

EMC Lab	:	Accredited by TUV Rheinland Shenzhen Listed by FCC The Registration Number is 752051 Listed by Industry Canada The Registration Number is 5077A-2 Accredited by China National Accreditation Committee for Laboratories The Certificate Registration Number is L3193
Name of Firm	:	ACCURATE TECHNOLOGY CO. LTD
Site Location	:	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

1.4. Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

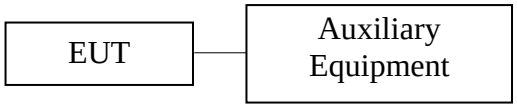
Kind of equipment	Manufacturer	Type	S/N	Calibrated date	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 12, 2013	Jan. 11, 2014
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 12, 2013	Jan. 11, 2014
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 12, 2013	Jan. 11, 2014
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan. 12, 2013	Jan. 11, 2014
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Feb. 06, 2013	Feb. 05, 2014
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Feb. 06, 2013	Feb. 05, 2014
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Feb. 06, 2013	Feb. 05, 2014
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Feb. 06, 2013	Feb. 05, 2014
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 12, 2013	Jan. 11, 2014
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 12, 2013	Jan. 11, 2014

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The modes are used: 1) Playing
2) Transfer data

3.2.Configuration and peripherals



(EUT: MP4)

4. TEST PROCEDURES AND RESULTS

FCC Rules	**Description of Test**	**Result**
Section 15.107	Conducted Emission Test	Compliant
Section 15.109	Radiated Emission Test	Compliant

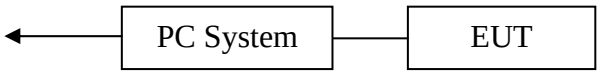
5. CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.107(A)

5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators

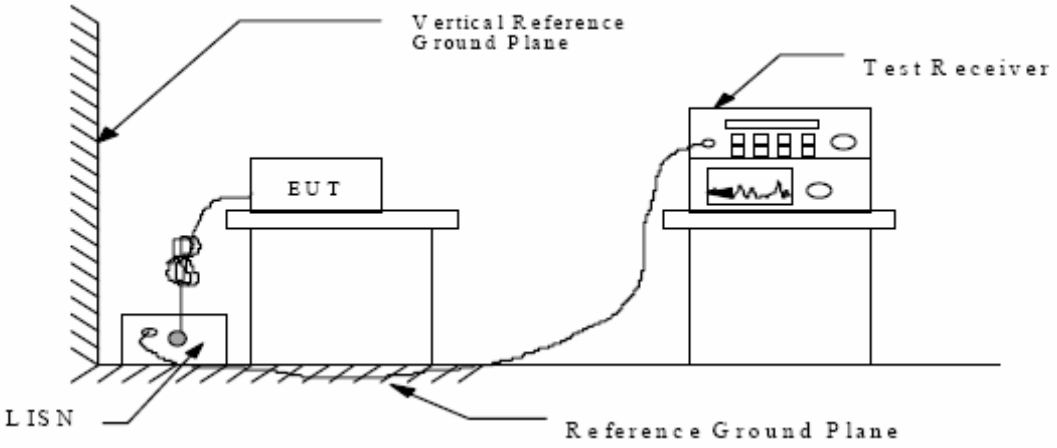
5.1.1.1.For Transfer data

AC 120V/60Hz



(EUT: MP4)

5.1.2.Shielding Room Test Setup Diagram



(EUT: MP4)

5.2.The Emission Limit

5.2.1.Conducted Emission Measurement Limits According to Section 15.107(a)

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

* Decreases with the logarithm of the frequency.

5.3.Configuration of EUT on Measurement

The following equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.3.1.MP4 (EUT)

Model Number : ID1839D
Serial Number : N/A
Manufacturer : Natural Sound Electronics (Shenzhen) Co., Ltd.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in modes (Transfer data) and measure it.

5.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

5.6. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Test mode : Transfer data

MEASUREMENT RESULT: "N-0822-F01_fin"

8/22/2013 9:24AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.152414	51.00	11.5	66	14.9	QP	L1	GND
0.181681	48.20	11.7	64	16.2	QP	L1	GND
0.449637	42.50	12.5	57	14.4	QP	L1	GND

MEASUREMENT RESULT: "N-0822-F01_fin2"

8/22/2013 9:24AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150600	33.40	11.5	56	22.6	AV	L1	GND
0.444284	28.30	12.5	47	18.7	AV	L1	GND
1.938212	26.10	12.4	46	19.9	AV	L1	GND

MEASUREMENT RESULT: "H0822-F01_fin"

8/22/2013 9:04AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	50.50	11.5	66	15.5	QP	N	GND
0.485068	39.20	12.6	56	17.1	QP	N	GND
1.915138	37.60	12.4	56	18.4	QP	N	GND

MEASUREMENT RESULT: "H0822-F01_fin2"

8/22/2013 9:04AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	33.40	11.5	56	22.6	AV	N	GND
0.446062	28.80	12.5	47	18.1	AV	N	GND
1.961563	24.00	12.4	46	22.0	AV	N	GND

Emissions attenuated more than 20 dB below the permissible value are not reported. The spectral diagrams are attached as below.

ACCURATE TECHNOLOGY CO.,LTD

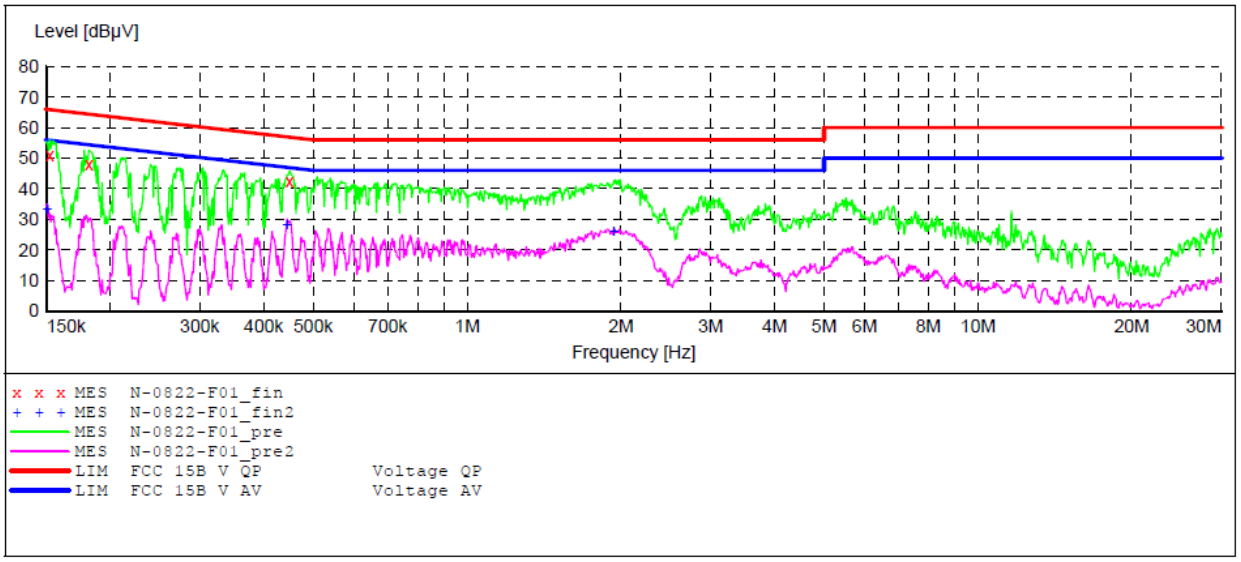
CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: MP4 M/N: ID1839D
Manufacturer: Natural Sound
Operating Condition: Transfer data
Test Site: 1#Shielding Room
Operator: Alen
Test Specification: L 120V/60Hz
Comment: Report No:ATE20131824
Start of Test: 8/22/2013 / 9:22:30AM

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak Average	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "N-0822-F01_fin"

8/22/2013 9:24AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.152414	51.00	11.5	66	14.9	QP	L1	GND
0.181681	48.20	11.7	64	16.2	QP	L1	GND
0.449637	42.50	12.5	57	14.4	QP	L1	GND

MEASUREMENT RESULT: "N-0822-F01_fin2"

8/22/2013 9:24AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150600	33.40	11.5	56	22.6	AV	L1	GND
0.444284	28.30	12.5	47	18.7	AV	L1	GND
1.938212	26.10	12.4	46	19.9	AV	L1	GND

ACCURATE TECHNOLOGY CO.,LTD

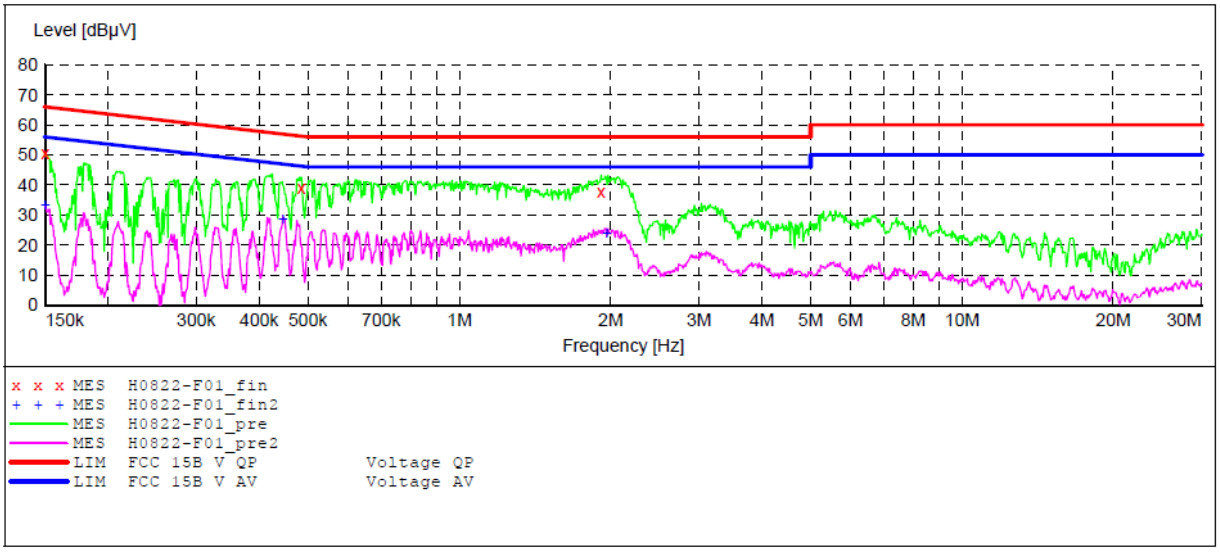
CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: MP4 M/N: ID1839D
Manufacturer: Natural Sound
Operating Condition: Transfer data
Test Site: 1#Shielding Room
Operator: Alen
Test Specification: N 120V/60Hz
Comment: Report No:ATE20131824
Start of Test: 8/22/2013 / 9:02:42AM

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak Average	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "H0822-F01_fin"

8/22/2013 9:04AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	50.50	11.5	66	15.5	QP	N	GND
0.485068	39.20	12.6	56	17.1	QP	N	GND
1.915138	37.60	12.4	56	18.4	QP	N	GND

MEASUREMENT RESULT: "H0822-F01_fin2"

8/22/2013 9:04AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	33.40	11.5	56	22.6	AV	N	GND
0.446062	28.80	12.5	47	18.1	AV	N	GND
1.961563	24.00	12.4	46	22.0	AV	N	GND

6. RADIATED EMISSION FOR FCC PART 15 SECTION 15.109(A)

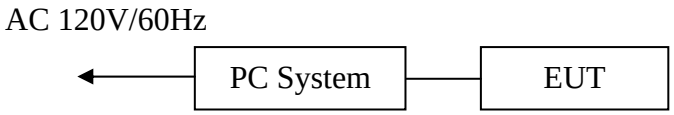
6.1.Block Diagram of Test Setup

6.1.1.Block diagram of connection between the EUT and simulators

6.1.1.1.For playing

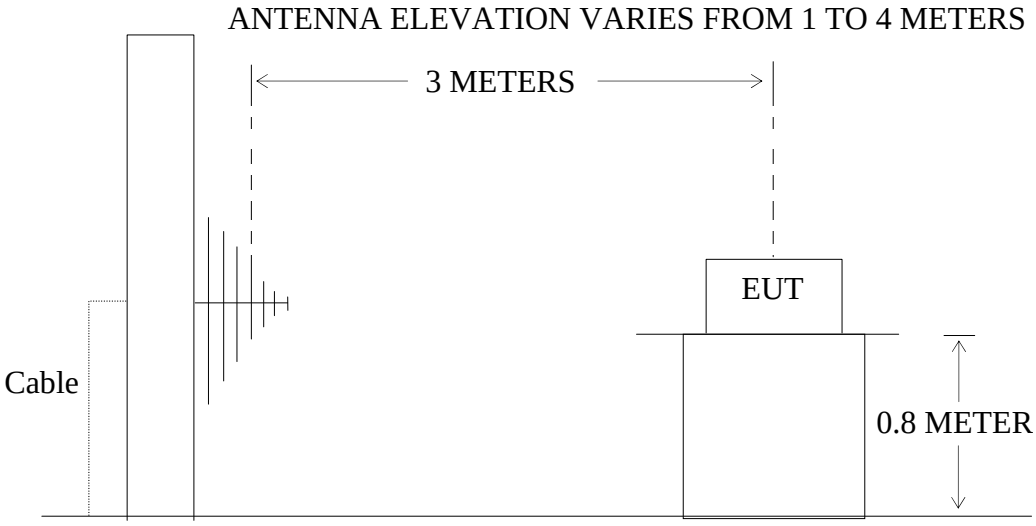
(EUT: MP4)

6.1.1.2.For Transfer data



(EUT: MP4)

6.1.2.Semi-Anechoic Chamber Test Setup Diagram



GROUND PLANE

(EUT: MP4)

6.2.The Emission Limit For Section 15.109 (a)

6.2.1.Radiation Emission Measurement Limits According to Section 15.109 (a).

Frequency (MHz)	Limit	
	Field Strength of Quasi-peak Value (microvolts/m)	Field Strength of Quasi-peak Value (dBμV/m)
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

6.3.EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.3.1.MP4 (EUT)

Model Number : ID1839D
Serial Number : N/A
Manufacturer : Natural Sound Electronics (Shenzhen) Co., Ltd.

6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

6.4.2.Turn on the power of all equipment.

6.4.3. Let the EUT work in (Playing, Transfer data) mode measures it.

6.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2009 on radiated emission measurement.

The bandwidth of test receiver is set at 120kHz in 30-1000MHz

The frequency range from 30MHz to 1000MHz is checked.

The highest frequency of the internal sources of the EUT is less than 108MHz;
The measurement shall only be made up to 1GHz.

6.6. The Emission Measurement Result

PASS.

Test mode: Playing

Polarization: Horizontal

No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	278.3308	51.12	-9.89	41.23	46.00	-4.77	QP
2	372.5747	49.04	-7.47	41.57	46.00	-4.43	QP
3	463.2561	47.35	-5.60	41.75	46.00	-4.25	QP

Polarization: Vertical

No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	189.1075	38.68	-12.66	26.02	43.50	-17.48	QP
2	383.1960	46.41	-7.31	39.10	46.00	-6.90	QP
3	463.2561	41.23	-5.60	35.63	46.00	-10.37	QP

Test mode: Transfer data

Polarization: Horizontal

No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	117.6813	52.10	-13.14	38.96	43.50	-4.54	QP
2	246.1237	52.07	-10.80	41.27	46.00	-4.73	QP
3	741.8155	43.29	-1.17	42.12	46.00	-3.88	QP

Polarization: Vertical

No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	248.7317	50.18	-10.78	39.40	46.00	-6.60	QP
2	478.1394	46.54	-5.38	41.16	46.00	-4.84	QP
3	600.8138	44.18	-2.96	41.22	46.00	-4.78	QP

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

3. The spectral diagrams are attached as below display the measurement of peak values

ACCURATE TECHNOLOGY CO., LTD.
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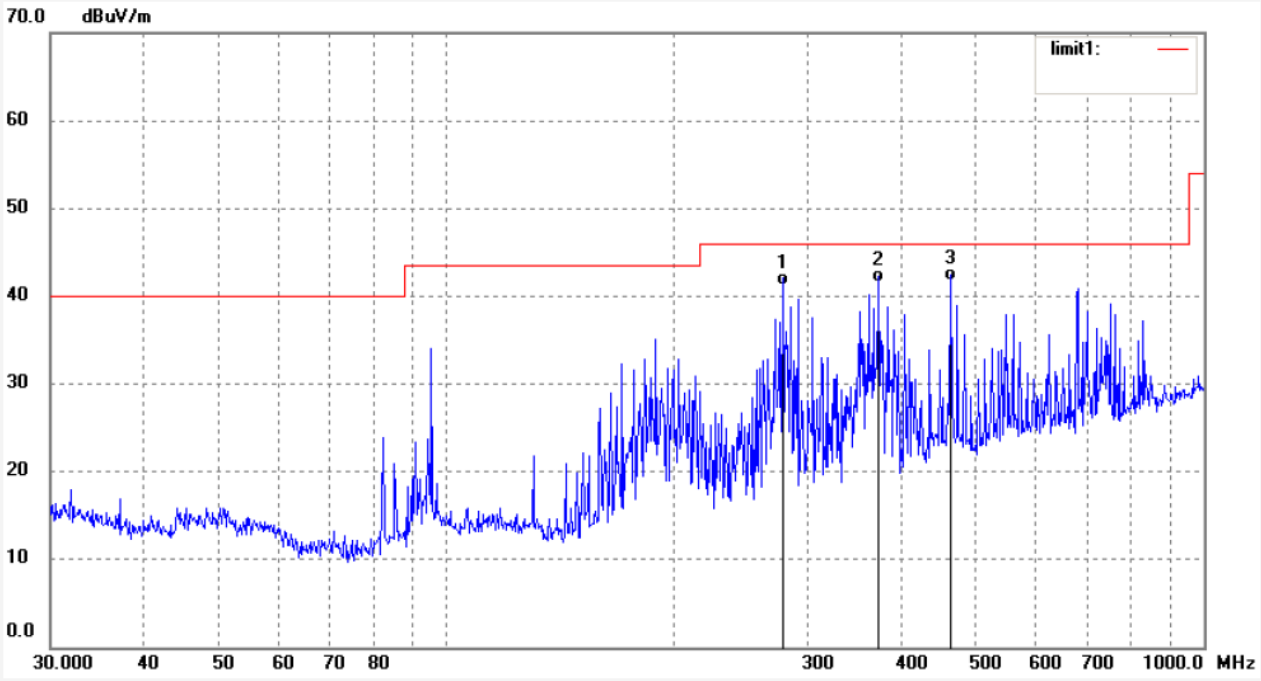
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: ALEN #1391	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 3.7V
Test item: Radiation Test	Date: 13/08/24/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 14/00/15
EUT: MP4	Engineer Signature:
Mode: Playing	Distance: 3m
Model: ID1839D	
Manufacturer: Natural Sound	

Note: Report No:ATE20131824



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	278.3308	51.12	-9.89	41.23	46.00	-4.77	QP			
2	372.5747	49.04	-7.47	41.57	46.00	-4.43	QP			
3	463.2561	47.35	-5.60	41.75	46.00	-4.25	QP			

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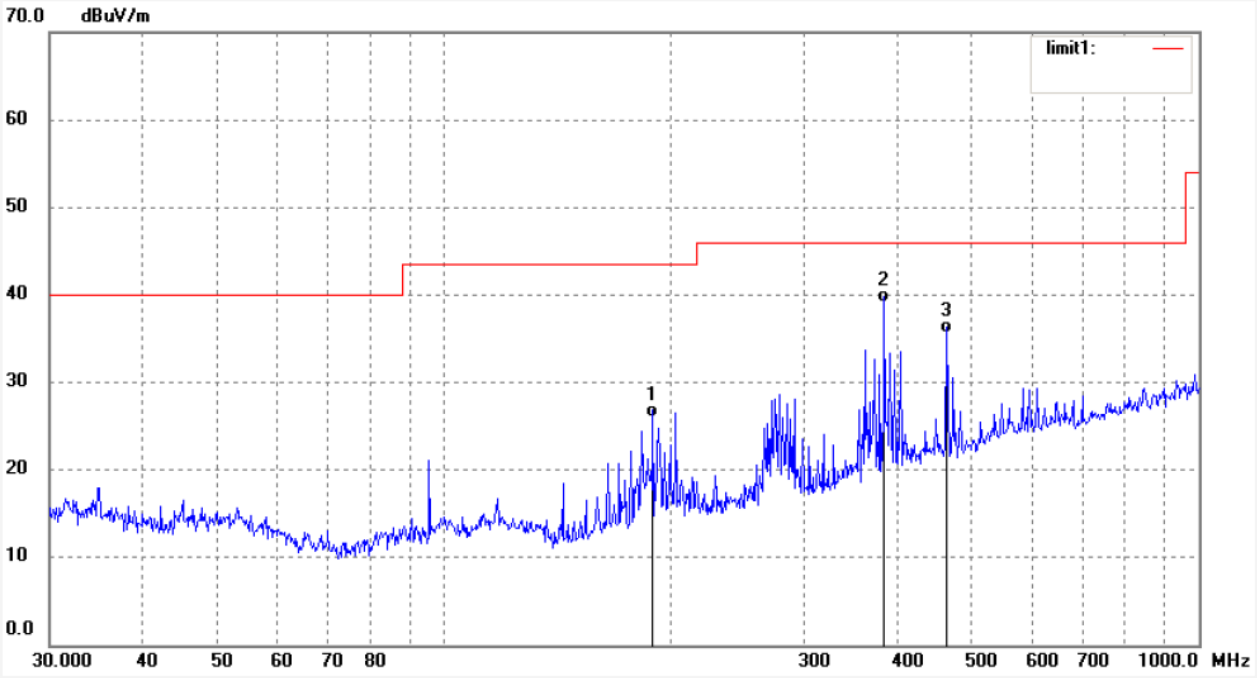
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: ALEN #1392
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: MP4
Mode: Playing
Model: ID1839D
Manufacturer: Natural Sound

Polarization: Vertical
Power Source: DC 3.7V
Date: 13/08/24/
Time: 14/02/23
Engineer Signature:
Distance: 3m

Note: Report No:ATE20131824



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	189.1075	38.68	-12.66	26.02	43.50	-17.48	QP			
2	383.1960	46.41	-7.31	39.10	46.00	-6.90	QP			
3	463.2561	41.23	-5.60	35.63	46.00	-10.37	QP			

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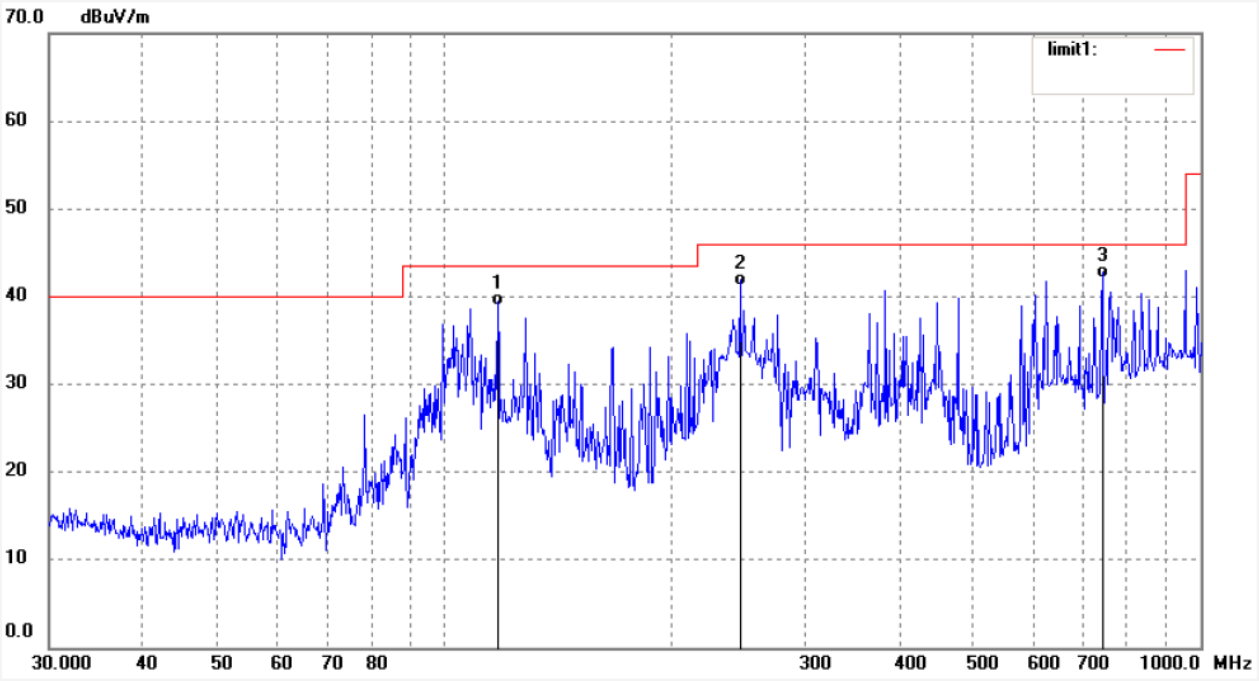
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: ALEN #1393	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: USB 5V
Test item: Radiation Test	Date: 13/08/24/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 14/05/32
EUT: MP4	Engineer Signature:
Mode: Transfer data	Distance: 3m
Model: ID1839D	
Manufacturer: Natural Sound	

Note: Report No:ATE20131824



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	117.6813	52.10	-13.14	38.96	43.50	-4.54	QP			
2	246.1237	52.07	-10.80	41.27	46.00	-4.73	QP			
3	741.8155	43.29	-1.17	42.12	46.00	-3.88	QP			

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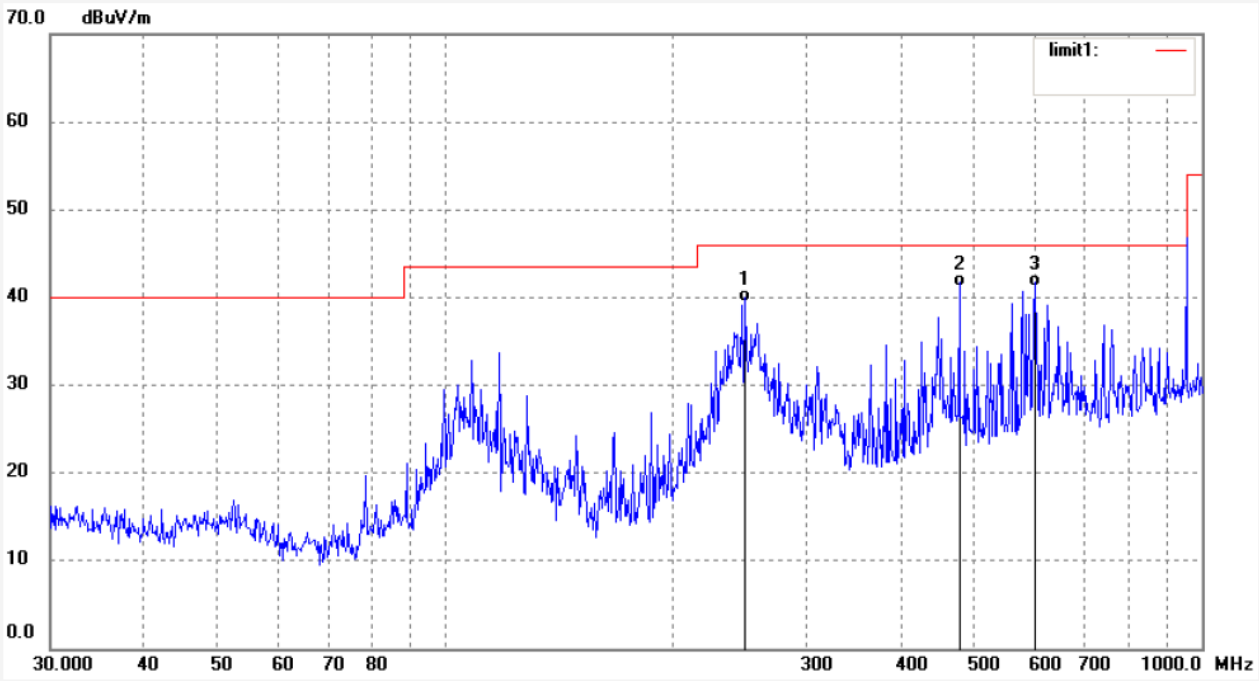
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: ALEN #1394	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: USB 5V
Test item: Radiation Test	Date: 13/08/24/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 14/06/39
EUT: MP4	Engineer Signature:
Mode: Transfer data	Distance: 3m
Model: ID1839D	
Manufacturer: Natural Sound	

Note: Report No:ATE20131824



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	248.7317	50.18	-10.78	39.40	46.00	-6.60	QP			
2	478.1394	46.54	-5.38	41.16	46.00	-4.84	QP			
3	600.8138	44.18	-2.96	41.22	46.00	-4.78	QP			