

APPLICATION FOR VERIFICATION
On Behalf of
InnoVISION Multimedia Limited

Inno3D 3D Printer S1
Model No.: I3DPS1BK

FCC ID: 2AD8V-I3DP-S100

Prepared for : InnoVISION Multimedia Limited
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Report No. : ATE20160778
Date of Test : Apr 29, 2016-May 12, 2016
Date of Report : May 12, 2016

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Test Report Declaration

Applicant : InnoVISION Multimedia Limited
Manufacturer : InnoVISION Multimedia Limited
EUT Description : Inno3D 3D Printer S1
(A) MODEL NO.: I3DPS1BK
(B) SERIAL NO.: N/A
(C) POWER SUPPLY: AC 100-240V~50/60Hz 1.8A

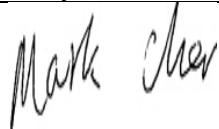
Measurement Procedure Used:


FCC Rules and Regulations Part 15 Subpart B ANSI C63.4: 2014

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 Class B limits both radiated and conducted emissions. 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 : Apr 29, 2016-May 12, 2016
Date of Report : May 12, 2016

Prepared by : 
(Mark Chen, Engineer)

Approved & Authorized Signer : 
(Sean Liu, Manager)

1. TEST RESULTS SUMMARY

Test Items	Test Standard	Test Results
Power Line Conducted Emission	FCC Part 15B	Pass
Radiated Emission	FCC Part 15B	Pass

2. GENERAL INFORMATION

2.1.Product of Device (EUT)

EUT	: Inno3D 3D Printer S1
Model Number	: I3DPS1BK
Power Supply	: AC 120V/60Hz
Adapter	: Model: FSP120-AAAN2 Input: 100-240V~, 1.8A, 50-60Hz Output: 24V--- 5A
Remark(s)	: The EUT highest operating frequency provided by Manufacturer is 75MHz, the radiated emission measurement shall be made up to 1GHz
Trade Mark	: N/A
Applicant	: InnoVISION Multimedia Limited
Address	: Unit A&B, 21/F., Mai Wah Ind. Bldg., 1-7 Wah Sing Street, Kwai Chung, Hong Kong
Manufacturer	: InnoVISION Multimedia Limited
Address	: Unit A&B, 21/F., Mai Wah Ind. Bldg., 1-7 Wah Sing Street, Kwai Chung, Hong Kong
Date of sample received	: Apr 29, 2016
Date of Test	: Apr 29, 2016-May 12, 2016

2.2.Accessory and Auxiliary Equipment

Notebook PC	: Manufacturer: LENOVO M/N: 4290-RT8 S/N: R9-FW93G 11/08
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2.3. Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen, May 10, 2004

Listed by FCC

The Registration Number is 253065

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-1

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&D, Changyuan New Material Port, Keyuan Rd., Science & Industry Park, Nanshan District, Shenzhen 518057, P.R. China

2.4. Measurement Uncertainty

Conducted emission expanded uncertainty : U=2.23dB, k=2

Power disturbance expanded uncertainty : U=2.92dB, k=2

Radiated emission expanded uncertainty : U=3.08dB, k=2
(9kHz-30MHz)

Radiated emission expanded uncertainty : U=4.42dB, k=2
(30MHz-1000MHz)

Radiated emission expanded uncertainty : U=4.06dB, k=2
(Above 1GHz)

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. The Equipments Used to Measure Conducted Disturbance

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan.9, 2016	1 Year
2.	Test Receiver	Rohde & Schwarz	ESPI	100396/003	Jan.9, 2016	1 Year
3.	Test Receiver	Rohde & Schwarz	ESPI	101526/003	Jan.9, 2016	1 Year
4.	Test Receiver	Rohde & Schwarz	ESR	101817	Jan.9, 2016	1 Year
5.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan.9, 2016	1 Year
6.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100305	Jan.9, 2016	1 Year
7.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100310	Jan.9, 2016	1 Year
8.	L.I.S.N.	Rohde & Schwarz	ESH3-Z6	100132	Jan.9, 2016	1 Year
9.	L.I.S.N.	Rohde & Schwarz	ESH3-Z6	100979	Jan.9, 2016	1 Year
10.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100305	Jan.9, 2016	1 Year
11.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100312	Jan.9, 2016	1 Year
12.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	Jan.9, 2016	1 Year
13.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283936	Jan.9, 2016	1 Year
14.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	Jan.9, 2016	1 Year
15.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.9, 2016	1 Year
16.	VOLTAGE PROBE	Schwarzbeck	TK9416	N/A	Jan.9, 2016	1 Year
17.	RF CURRENT PROBE	Rohde & Schwarz	EZ-17	100048	Jan.9, 2016	1 Year
18.	8-Wire Impedance Stabilisation Network	Schwarzbeck	CAT5 8158	8158-0035	Jan.9, 2016	1 Year
19.	RF Coaxial Cable	SUHNER	N-2m	No.2	Jan.9, 2016	1 Year
20.	RF Coaxial Cable	SUHNER	N-2m	No.3	Jan.9, 2016	1 Year
21.	RF Coaxial Cable	SUHNER	N-2m	No.14	Jan.9, 2016	1 Year

3.2. The Equipments Used to Measure Radiated Disturbance

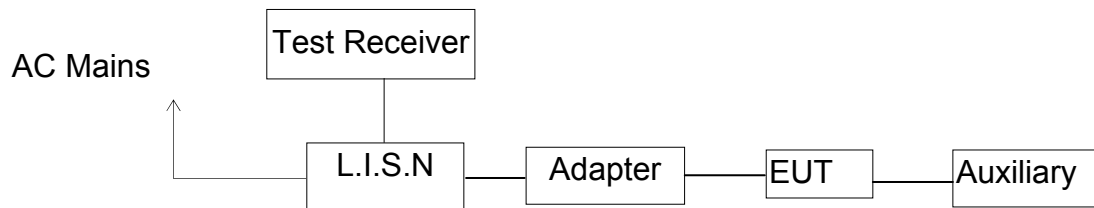
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan.9, 2016	1 Year
2.	Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan.9, 2016	1 Year
3.	Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan.9, 2016	1 Year
4.	Test Receiver	Rohde& Schwarz	ESPI	100396/003	Jan.9, 2016	1 Year
5.	Test Receiver	Rohde& Schwarz	ESPI	101526/003	Jan.9, 2016	1 Year
6.	Test Receiver	Rohde& Schwarz	ESR	101817	Jan.9, 2016	1 Year
7.	Bilog Antenna	Schwarzbeck	VULB9163	9163-194	Jan.14, 2016	1 Year
8.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan.14, 2016	1 Year
9.	Log.-Per.Antenna	Schwarzbeck	VUSLP 9111B	9111B-074	Jan.14, 2016	1 Year
10.	Biconical Broad Band Antenna	Schwarzbeck	VHBB 9124+BBA 9106	9124-617	Jan.14, 2016	1 Year
11.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan.14, 2016	1 Year
12.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan.14, 2016	1 Year
13.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan.14, 2016	1 Year
14.	Vertical Active Monopole Antenna	Schwarzbeck	VAMP 9243	9243-370	Jan.14, 2016	1 Year
15.	RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	Jan.9, 2016	1 Year
16.	Pre-Amplifier	Agilent	8447D	294A10619	Jan.9, 2016	1 Year
17.	Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	Jan.9, 2016	1 Year
18.	50 Coaxial Switch	Anritsu Corp	MP59B	6200237248	Jan.9, 2016	1 Year
19.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.9, 2016	1 Year
20.	RF Coaxial Cable	Schwarzbeck	N-5m	No.1	Jan.9, 2016	1 Year
21.	RF Coaxial Cable	Schwarzbeck	N-1m	No.6	Jan.9, 2016	1 Year
22.	RF Coaxial Cable	Schwarzbeck	N-1m	No.7	Jan.9, 2016	1 Year
23.	RF Coaxial Cable	SUHNER	N-3m	No.8	Jan.9, 2016	1 Year
24.	RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	Jan.9, 2016	1 Year
25.	RF Coaxial Cable	SUHNER	N-6m	No.10	Jan.9, 2016	1 Year
26.	RF Coaxial Cable	RESENBERGER	N-12m	No.11	Jan.9, 2016	1 Year
27.	RF Coaxial Cable	RESENBERGER	N-0.5m	No.12	Jan.9, 2016	1 Year
28.	RF Coaxial Cable	SUHNER	N-2m	No.13	Jan.9, 2016	1 Year
29.	RF Coaxial Cable	SUHNER	N-0.5m	No.15	Jan.9, 2016	1 Year
30.	RF Coaxial Cable	SUHNER	N-2m	No.16	Jan.9, 2016	1 Year
31.	RF Coaxial Cable	RESENBERGER	N-6m	No.17	Jan.9, 2016	1 Year

4. POWER LINE CONDUCTED MEASUREMENT

4.1. Block Diagram of Test Setup

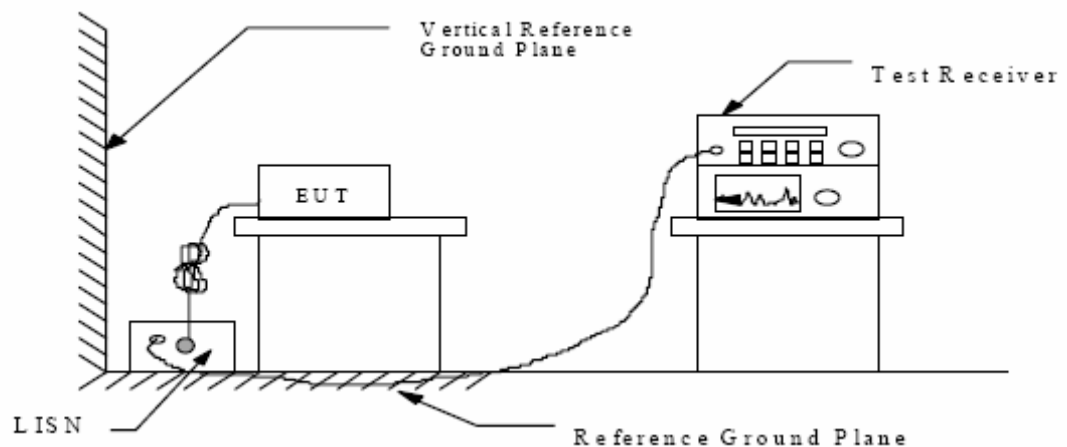
4.1.1. Block diagram of connection between the EUT and simulators

4.1.1.1. For SD Card Printer/USB Printer



(EUT: Inno3D 3D Printer S1)

4.1.2. Shielding Room Test Setup Diagram



(EUT: Inno3D 3D Printer S1)

4.2. The Emission Limit

4.2.1. 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.

4.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

4.3.1. Inno3D 3D Printer S1 (EUT)

Model Number: I3DPS1BK

Serial Number: N/A

Manufacturer: InnoVISION Multimedia Limited

4.4. Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 3.2.

4.4.2. Turn on the power of all equipment.

4.4.3. Let the EUT work in test mode and measure it.

4.5. 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: 2014 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.

4.6. Power Line Conducted Emission Measurement Results

PASS.

Test Mode: SD Card Printer (120V/60HZ)								
MEASUREMENT RESULT: "IQOAA007_fin"								
2016-5-3 9:47								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.398000	35.60	11.3	58	22.3	QP	L1	GND	
0.948000	34.60	11.6	56	21.4	QP	L1	GND	
15.230000	37.80	11.9	60	22.2	QP	L1	GND	
MEASUREMENT RESULT: "IQOAA007_fin2"								
2016-5-3 9:47								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.398000	27.50	11.3	48	20.4	AV	L1	GND	
0.944000	29.90	11.6	46	16.1	AV	L1	GND	
15.171500	30.80	11.9	50	19.2	AV	L1	GND	
MEASUREMENT RESULT: "IQOAA008_fin"								
2016-5-3 9:52								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.402000	37.90	11.3	58	19.9	QP	N	GND	
0.854000	38.10	11.6	56	17.9	QP	N	GND	
1.264000	33.50	11.6	56	22.5	QP	N	GND	
MEASUREMENT RESULT: "IQOAA008_fin2"								
2016-5-3 9:52								
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE	
0.396000	36.70	11.3	48	11.2	AV	N	GND	
0.856000	34.50	11.6	46	11.5	AV	N	GND	
1.254000	29.50	11.6	46	16.5	AV	N	GND	

Test Mode: USB Printer(120V/60HZ)

MEASUREMENT RESULT: "IQOAA006_fin"

2016-5-3 9:44

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.396000	38.00	11.3	58	19.9	QP	L1	GND
0.938000	34.70	11.6	56	21.3	QP	L1	GND
15.432500	36.80	11.9	60	23.2	QP	L1	GND

MEASUREMENT RESULT: "IQOAA006_fin2"

2016-5-3 9:44

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.396000	35.90	11.3	48	12.0	AV	L1	GND
0.856000	27.80	11.6	46	18.2	AV	L1	GND
0.942000	28.70	11.6	46	17.3	AV	L1	GND

MEASUREMENT RESULT: "IQOAA005_fin"

2016-5-3 9:39

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.386000	38.70	11.2	58	19.4	QP	N	GND
0.954000	35.80	11.6	56	20.2	QP	N	GND
1.156000	35.50	11.6	56	20.5	QP	N	GND

MEASUREMENT RESULT: "IQOAA005_fin2"

2016-5-3 9:39

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.386000	34.50	11.2	48	13.6	AV	N	GND
0.856000	30.70	11.6	46	15.3	AV	N	GND
0.942000	32.50	11.6	46	13.5	AV	N	GND

Test Mode: SD Card Printer (240V/60HZ)

MEASUREMENT RESULT: "IQOAA011_fin"

2016-5-3 10:08

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.820000	37.50	11.6	56	18.5	QP	L1	GND
1.306000	38.00	11.6	56	18.0	QP	L1	GND
1.378000	37.50	11.6	56	18.5	QP	L1	GND

MEASUREMENT RESULT: "IQOAA011_fin2"

2016-5-3 10:08

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.818000	35.10	11.6	46	10.9	AV	L1	GND
0.894000	33.70	11.6	46	12.3	AV	L1	GND
1.304000	34.20	11.6	46	11.8	AV	L1	GND

MEASUREMENT RESULT: "IQOAA012_fin"

2016-5-3 10:11

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.812000	38.00	11.6	56	18.0	QP	N	GND
1.312000	39.00	11.6	56	17.0	QP	N	GND
1.786000	39.10	11.7	56	16.9	QP	N	GND

MEASUREMENT RESULT: "IQOAA012_fin2"

2016-5-3 10:11

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.486000	35.60	11.5	46	10.6	AV	N	GND
0.818000	37.20	11.6	46	8.8	AV	N	GND
1.302000	36.40	11.6	46	9.6	AV	N	GND

Test Mode: USB Printer (240V/60HZ)

MEASUREMENT RESULT: "IQOAA010_fin"

2016-5-3 10:01

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.660000	31.70	11.5	56	24.3	QP	L1	GND
0.818000	37.80	11.6	56	18.2	QP	L1	GND
1.380000	36.20	11.6	56	19.8	QP	L1	GND

MEASUREMENT RESULT: "IQOAA010_fin2"

2016-5-3 10:01

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.816000	33.70	11.6	46	12.3	AV	L1	GND
1.300000	31.30	11.6	46	14.7	AV	L1	GND
1.380000	31.10	11.6	46	14.9	AV	L1	GND

MEASUREMENT RESULT: "IQOAA009_fin"

2016-5-3 9:58

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.816000	40.00	11.6	56	16.0	QP	N	GND
1.222000	39.00	11.6	56	17.0	QP	N	GND
1.380000	38.80	11.6	56	17.2	QP	N	GND

MEASUREMENT RESULT: "IQOAA009_fin2"

2016-5-3 9:58

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.816000	35.20	11.6	46	10.8	AV	N	GND
1.226000	32.10	11.6	46	13.9	AV	N	GND
1.304000	34.30	11.6	46	11.7	AV	N	GND

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

The spectral diagrams are shown in the following pages.

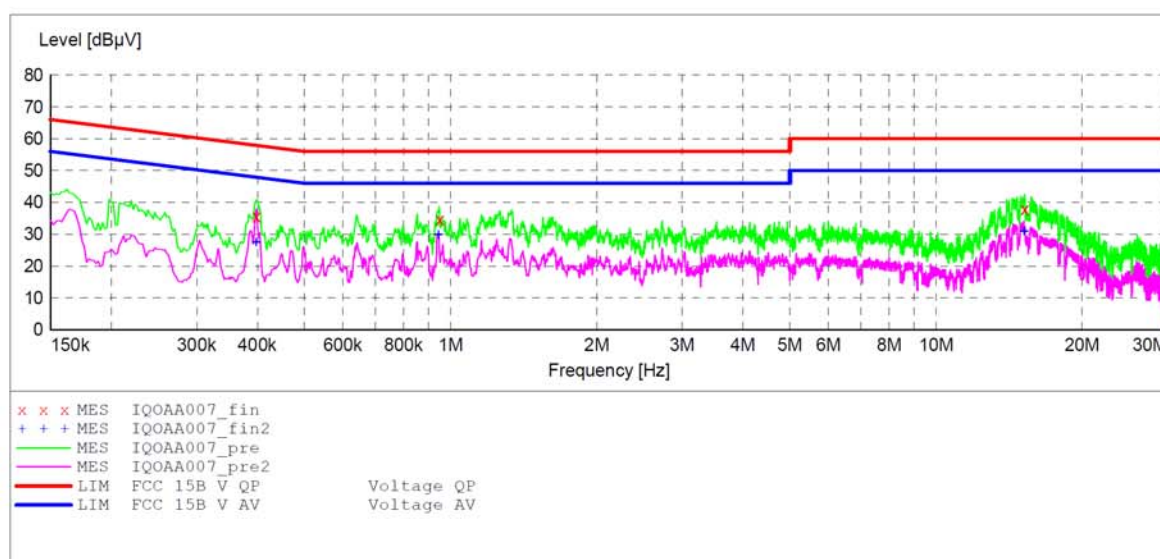
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART15B

EUT: Inno3D 3D Printer S1 M/N:I3DPS1BK
 Manufacturer: InnoVISION Multimedia Limited
 Operating Condition: SD Card Printer
 Test Site: 2#Shielding Room
 Operator: star
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20160778
 Start of Test: 2016-5-3 / 9:46:06

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

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN(ESH3-Z5)
 Average



MEASUREMENT RESULT: "IQOAA007_fin"

2016-5-3 9:47

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.398000	35.60	11.3	58	22.3	QP	L1	GND
0.948000	34.60	11.6	56	21.4	QP	L1	GND
15.230000	37.80	11.9	60	22.2	QP	L1	GND

MEASUREMENT RESULT: "IQOAA007_fin2"

2016-5-3 9:47

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.398000	27.50	11.3	48	20.4	AV	L1	GND
0.944000	29.90	11.6	46	16.1	AV	L1	GND
15.171500	30.80	11.9	50	19.2	AV	L1	GND

ACCURATE TECHNOLOGY CO., LTD

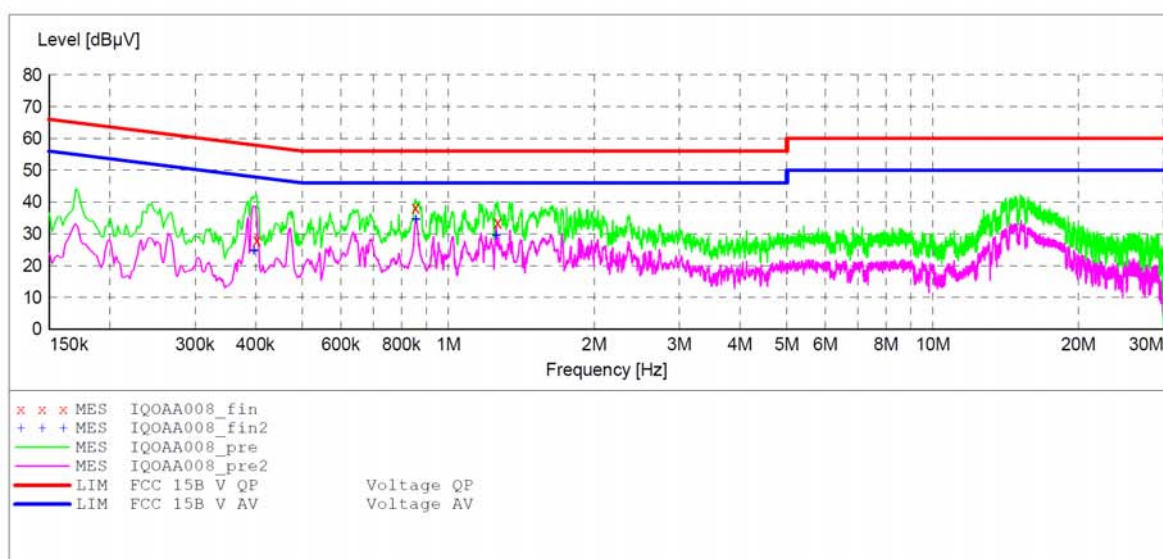
CONDUCTED EMISSION STANDARD FCC PART15B

EUT: Inno3D 3D Printer S1 M/N:I3DPS1BK
 Manufacturer: InnoVISION Multimedia Limited
 Operating Condition: SD Card Printer
 Test Site: 2#Shielding Room
 Operator: star
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20160778
 Start of Test: 2016-5-3 / 9:51:45

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

Short Description: _SUB_STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	LISN(ESH3-Z5)
			Average			



MEASUREMENT RESULT: "IQOAA008_fin"

2016-5-3 9:52

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.402000	37.90	11.3	58	19.9	QP	N	GND
0.854000	38.10	11.6	56	17.9	QP	N	GND
1.264000	33.50	11.6	56	22.5	QP	N	GND

MEASUREMENT RESULT: "IQOAA008_fin2"

2016-5-3 9:52

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.396000	36.70	11.3	48	11.2	AV	N	GND
0.856000	34.50	11.6	46	11.5	AV	N	GND
1.254000	29.50	11.6	46	16.5	AV	N	GND

ACCURATE TECHNOLOGY CO., LTD

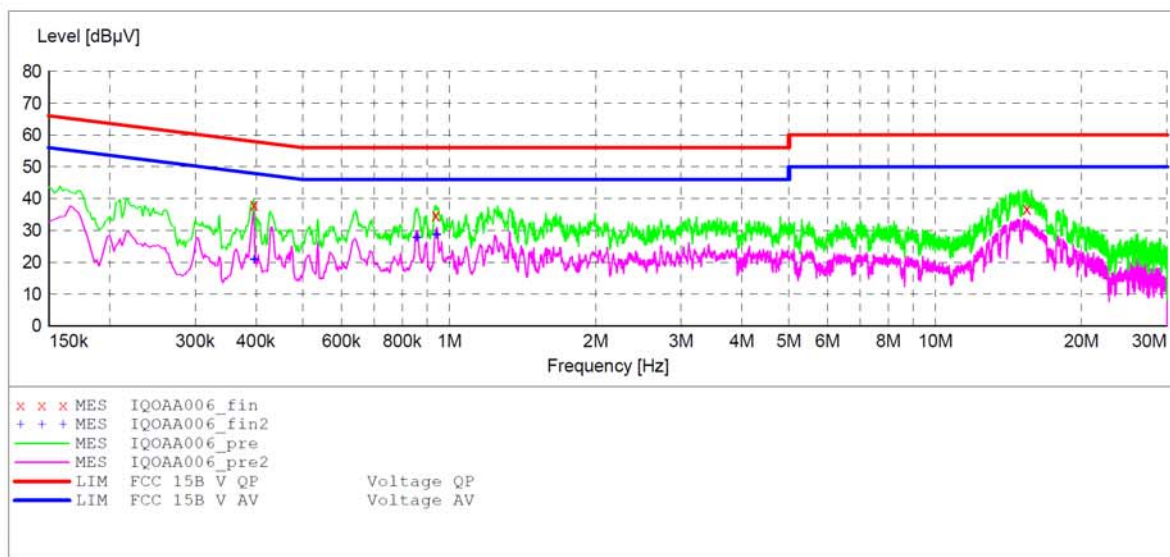
CONDUCTED EMISSION STANDARD FCC PART15B

EUT: Inno3D 3D Printer S1 M/N:I3DPS1BK
 Manufacturer: InnoVISION Multimedia Limited
 Operating Condition: USB Printer
 Test Site: 2#Shielding Room
 Operator: star
 Test Specification: L 120V/60Hz
 Comment: Report NO.:ATE20160778
 Start of Test: 2016-5-3 / 9:44:03

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

Short Description: _SUB_STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	LISN(ESH3-Z5)
Average						



MEASUREMENT RESULT: "IQOAA006_fin"

2016-5-3 9:44

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.396000	38.00	11.3	58	19.9	QP	L1	GND
0.938000	34.70	11.6	56	21.3	QP	L1	GND
15.432500	36.80	11.9	60	23.2	QP	L1	GND

MEASUREMENT RESULT: "IQOAA006_fin2"

2016-5-3 9:44

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.396000	35.90	11.3	48	12.0	AV	L1	GND
0.856000	27.80	11.6	46	18.2	AV	L1	GND
0.942000	28.70	11.6	46	17.3	AV	L1	GND

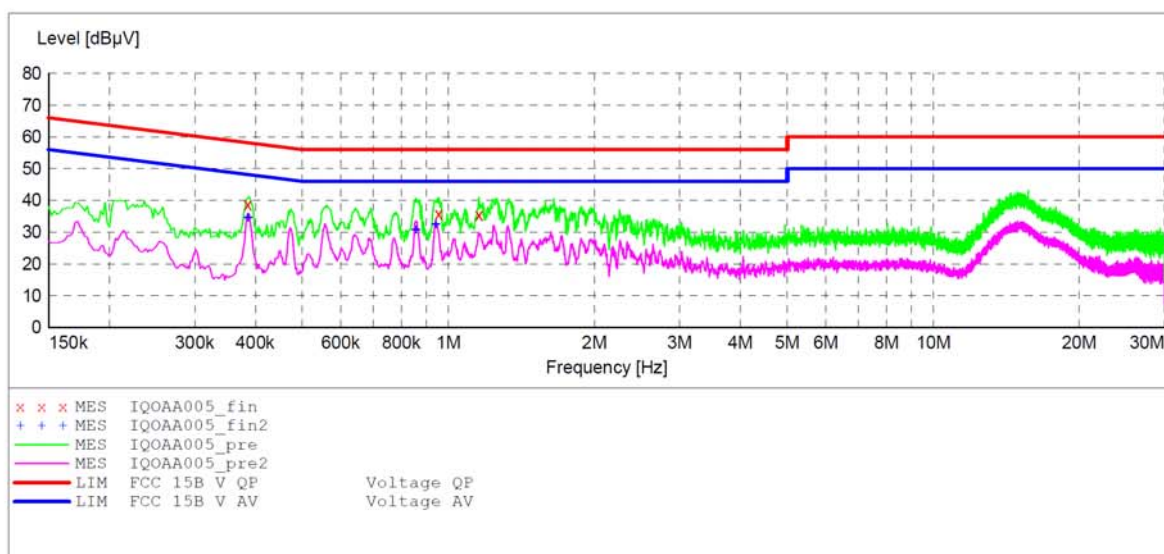
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART15B

EUT: Inno3D 3D Printer S1 M/N:I3DPS1BK
 Manufacturer: InnoVISION Multimedia Limited
 Operating Condition: USB Printer
 Test Site: 2#Shielding Room
 Operator: star
 Test Specification: N 120V/60Hz
 Comment: Report NO.:ATE20160778
 Start of Test: 2016-5-3 / 9:38:00

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

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN (ESH3-Z5)
 Average



MEASUREMENT RESULT: "IQOAA005_fin"

2016-5-3 9:39

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.386000	38.70	11.2	58	19.4	QP	N	GND
0.954000	35.80	11.6	56	20.2	QP	N	GND
1.156000	35.50	11.6	56	20.5	QP	N	GND

MEASUREMENT RESULT: "IQOAA005_fin2"

2016-5-3 9:39

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.386000	34.50	11.2	48	13.6	AV	N	GND
0.856000	30.70	11.6	46	15.3	AV	N	GND
0.942000	32.50	11.6	46	13.5	AV	N	GND

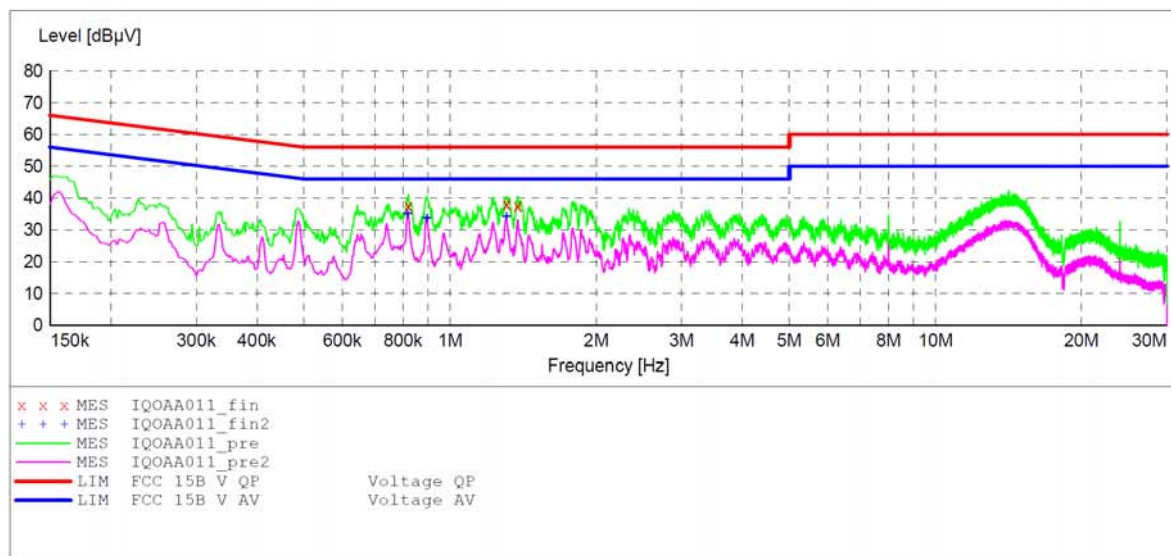
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART15B

EUT: Inno3D 3D Printer S1 M/N:I3DPS1BK
 Manufacturer: InnoVISION Multimedia Limited
 Operating Condition: SD Card Printer
 Test Site: 2#Shielding Room
 Operator: star
 Test Specification: L 240V/60Hz
 Comment: Report NO.:ATE20160778
 Start of Test: 2016-5-3 / 10:07:02

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

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN(ESH3-Z5)
 Average



MEASUREMENT RESULT: "IQOAA011_fin"

2016-5-3 10:08

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.820000	37.50	11.6	56	18.5	QP	L1	GND
1.306000	38.00	11.6	56	18.0	QP	L1	GND
1.378000	37.50	11.6	56	18.5	QP	L1	GND

MEASUREMENT RESULT: "IQOAA011_fin2"

2016-5-3 10:08

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.818000	35.10	11.6	46	10.9	AV	L1	GND
0.894000	33.70	11.6	46	12.3	AV	L1	GND
1.304000	34.20	11.6	46	11.8	AV	L1	GND

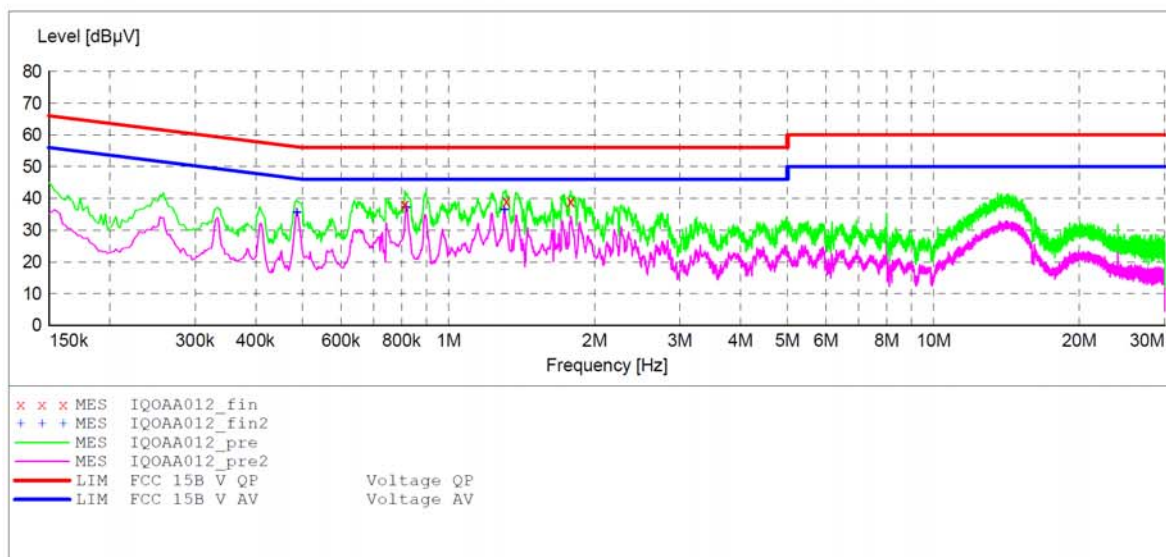
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART15B

EUT: Inno3D 3D Printer S1 M/N:I3DPS1BK
 Manufacturer: InnoVISION Multimedia Limited
 Operating Condition: SD Card Printer
 Test Site: 2#Shielding Room
 Operator: star
 Test Specification: N 240V/60Hz
 Comment: Report NO.:ATE20160778
 Start of Test: 2016-5-3 / 10:09:13

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

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz LISN(ESH3-Z5)
 Average



MEASUREMENT RESULT: "IQOAA012_fin"

2016-5-3 10:11

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.812000	38.00	11.6	56	18.0	QP	N	GND
1.312000	39.00	11.6	56	17.0	QP	N	GND
1.786000	39.10	11.7	56	16.9	QP	N	GND

MEASUREMENT RESULT: "IQOAA012_fin2"

2016-5-3 10:11

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.486000	35.60	11.5	46	10.6	AV	N	GND
0.818000	37.20	11.6	46	8.8	AV	N	GND
1.302000	36.40	11.6	46	9.6	AV	N	GND

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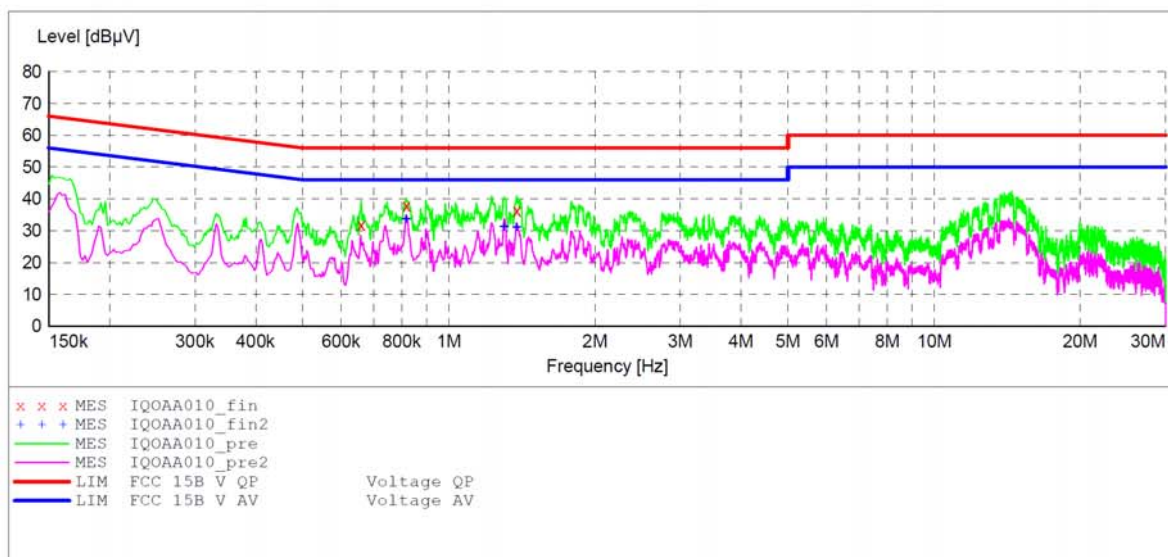
CONDUCTED EMISSION STANDARD FCC PART15B

EUT: Inno3D 3D Printer S1 M/N:I3DPS1BK
 Manufacturer: InnoVISION Multimedia Limited
 Operating Condition: USB Printer
 Test Site: 2#Shielding Room
 Operator: star
 Test Specification: L 240V/60Hz
 Comment: Report NO.:ATE20160778
 Start of Test: 2016-5-3 / 9:59:24

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

Short Description: _SUB_STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	LISN(ESH3-Z5)
Average						



MEASUREMENT RESULT: "IQOAA010_fin"

2016-5-3 10:01

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.660000	31.70	11.5	56	24.3	QP	L1	GND
0.818000	37.80	11.6	56	18.2	QP	L1	GND
1.380000	36.20	11.6	56	19.8	QP	L1	GND

MEASUREMENT RESULT: "IQOAA010_fin2"

2016-5-3 10:01

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.816000	33.70	11.6	46	12.3	AV	L1	GND
1.300000	31.30	11.6	46	14.7	AV	L1	GND
1.380000	31.10	11.6	46	14.9	AV	L1	GND

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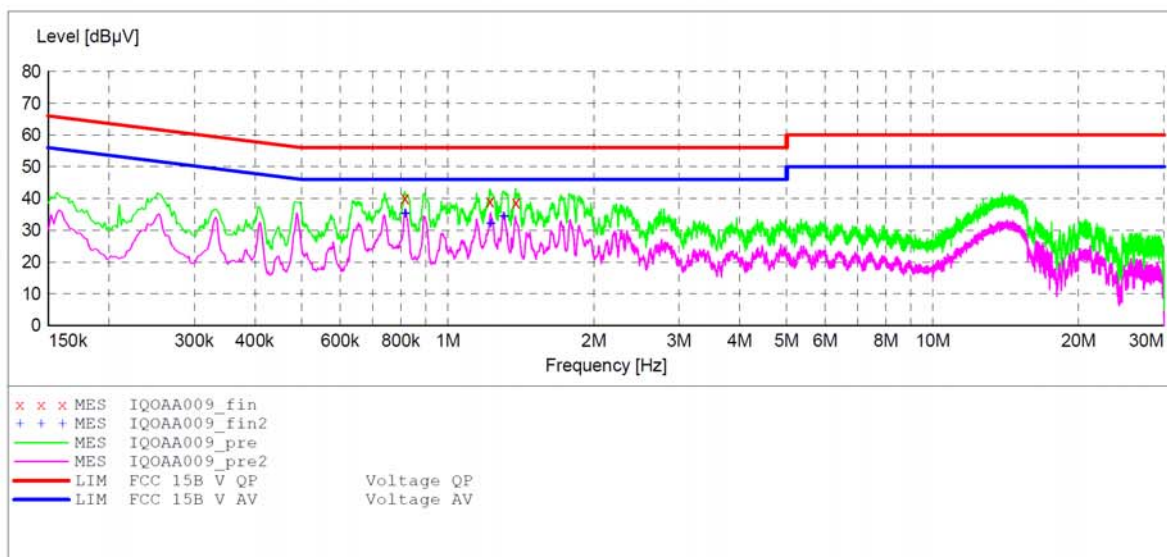
CONDUCTED EMISSION STANDARD FCC PART15B

EUT: Inno3D 3D Printer S1 M/N:I3DPS1BK
 Manufacturer: InnoVISION Multimedia Limited
 Operating Condition: USB Printer
 Test Site: 2#Shielding Room
 Operator: star
 Test Specification: N 240V/60Hz
 Comment: Report NO.:ATE20160778
 Start of Test: 2016-5-3 / 9:56:11

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

Short Description: _SUB_STD_VTERM2 1.70

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	LISN(ESH3-Z5)
			Average			



MEASUREMENT RESULT: "IQOAA009_fin"

2016-5-3 9:58

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.816000	40.00	11.6	56	16.0	QP	N	GND
1.222000	39.00	11.6	56	17.0	QP	N	GND
1.380000	38.80	11.6	56	17.2	QP	N	GND

MEASUREMENT RESULT: "IQOAA009_fin2"

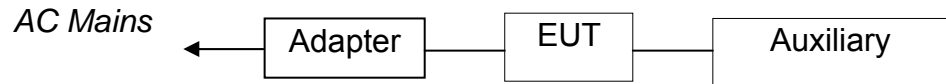
2016-5-3 9:58

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.816000	35.20	11.6	46	10.8	AV	N	GND
1.226000	32.10	11.6	46	13.9	AV	N	GND
1.304000	34.30	11.6	46	11.7	AV	N	GND

5. RADIATED EMISSION MEASUREMENT

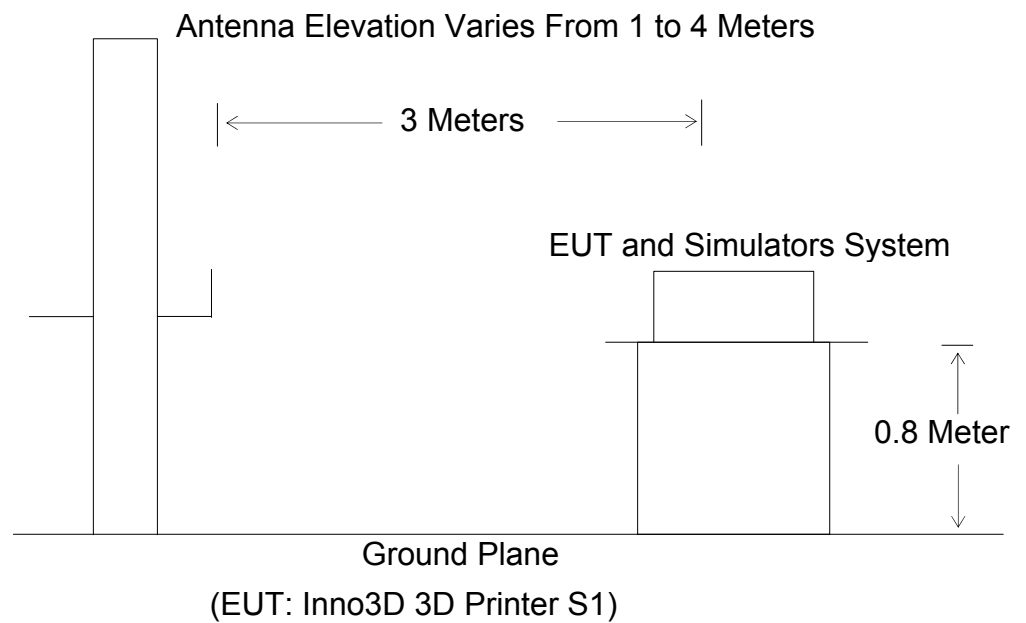
5.1. Block Diagram of Test Setup

5.1.1. Block diagram of connection between the EUT and simulators



(EUT: Inno3D 3D Printer S1)

5.1.2. Semi-Anechoic Chamber Test Setup Diagram



5.2.The Emission Limit For Section 15.109 (a)

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

Frequency MHz	Distance Meters	Field Strengths Limit	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V/m})$
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
960-1000	3	500	54.0
Remark: (1) Emission level $\text{dB}(\mu\text{V}) = 20 \log$ Emission level $\mu\text{V/m}$. (2)The smaller limit shall apply at the cross point between two frequency bands. (3)Distance is the distance in meters between the measuring instrument antenna and the closest point of any part of the device or system.			

5.3.EUT Configuration on Measurement

The following equipment is installed on Radiated 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.Inno3D 3D Printer S1 (EUT)

Model Number: I3DPS1BK

Serial Number: N/A

Manufacturer: InnoVISION Multimedia Limited

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 4.2.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in test mode (SD Card Printer, USB Printer) and measure it.

5.5. 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: 2014 on radiated emission measurement.

The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120kHz from 30MHz to 5000MHz.

The frequency range from 30MHz to 5000MHz is checked.

5.6. Radiated Emission Noise Measurement Result

PASS.

Model Number: I3DPS1BK								
Test mode: SD Card Printer								
Horizontal	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	207.1968	51.41	-18.50	32.91	43.50	-10.59	QP
	2	222.2807	51.85	-18.38	33.47	46.00	-12.53	QP
	3	312.5482	56.06	-15.99	40.07	46.00	-5.93	QP
Vertical	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	47.3688	51.54	-20.01	31.53	40.00	-8.47	QP
	2	143.7760	58.49	-22.20	36.29	43.50	-7.21	QP
	3	190.4411	56.30	-19.41	36.89	43.50	-6.61	QP
Test mode: USB Printer								
Horizontal	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	129.3923	59.00	-21.71	37.29	43.50	-6.21	QP
	2	379.1780	53.94	-14.15	39.79	46.00	-6.21	QP
	3	955.3509	43.51	-3.35	40.16	46.00	-5.84	QP
Vertical	No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	1	47.3688	51.36	-20.01	31.35	40.00	-8.65	QP
	2	143.7760	58.11	-22.20	35.91	43.50	-7.59	QP
	3	584.1611	51.12	-10.27	40.85	46.00	-5.15	QP



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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

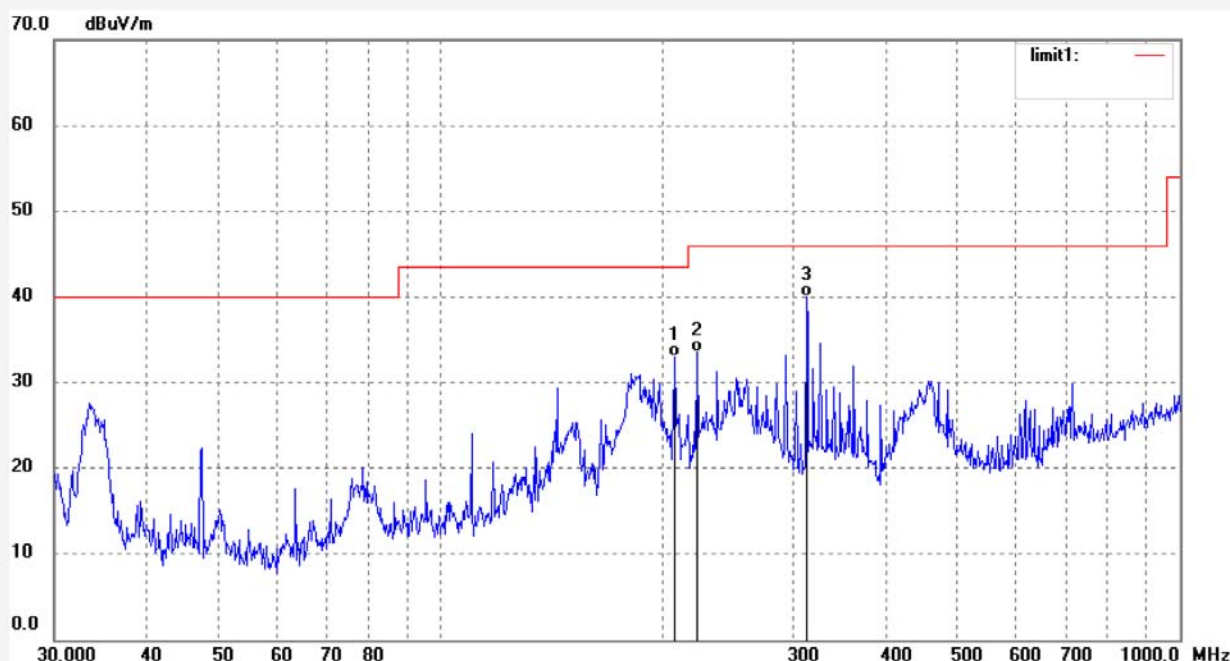
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2016 #679
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Inno3D 3D Printer S1
Mode: SD Card Printer
Model: I3DPS1BK
Manufacturer: InnoVISION Multimedia Limited

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2016-5-6
Time: 10:20:35
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20160778



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	207.1968	51.41	-18.50	32.91	43.50	-10.59	QP			
2	222.2807	51.85	-18.38	33.47	46.00	-12.53	QP			
3	312.5482	56.06	-15.99	40.07	46.00	-5.93	QP			



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Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2016 #678

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Inno3D 3D Printer S1

Mode: SD Card Printer

Model: I3DPS1BK

Manufacturer: InnoVISION Multimedia Limited

Polarization: Vertical

Power Source: AC 120V/60Hz

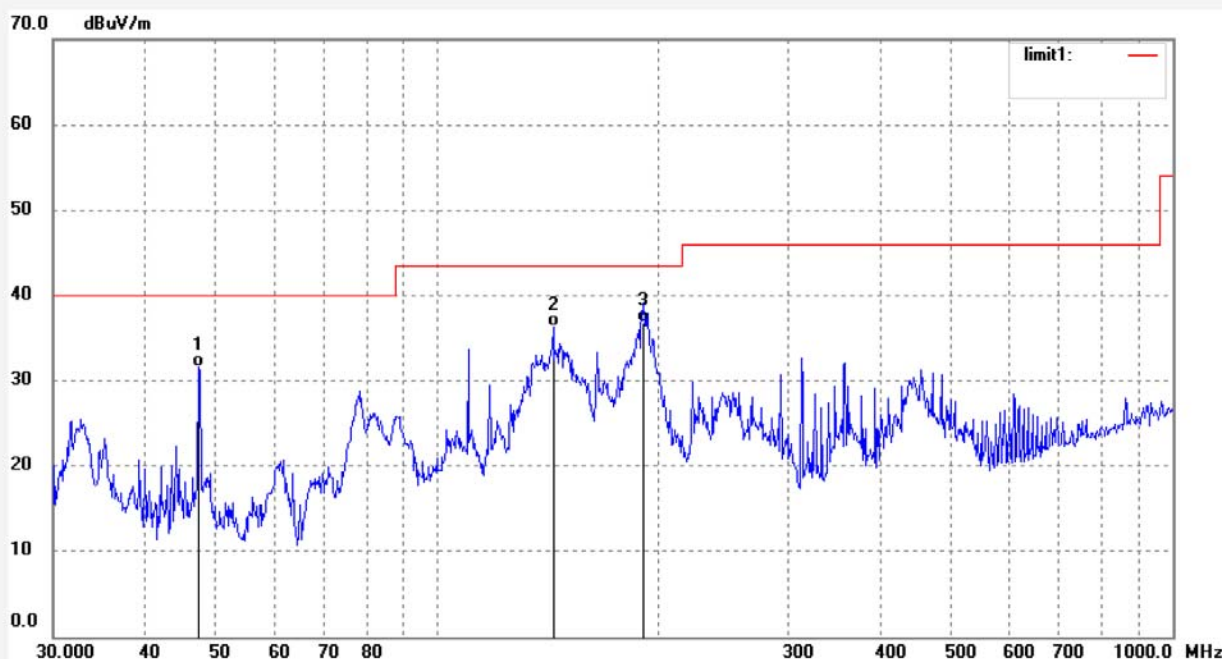
Date: 2016-5-6

Time: 10:16:53

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20160778



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	47.3688	51.54	-20.01	31.53	40.00	-8.47	QP			
2	143.7760	58.49	-22.20	36.29	43.50	-7.21	QP			
3	190.4411	56.30	-19.41	36.89	43.50	-6.61	QP			



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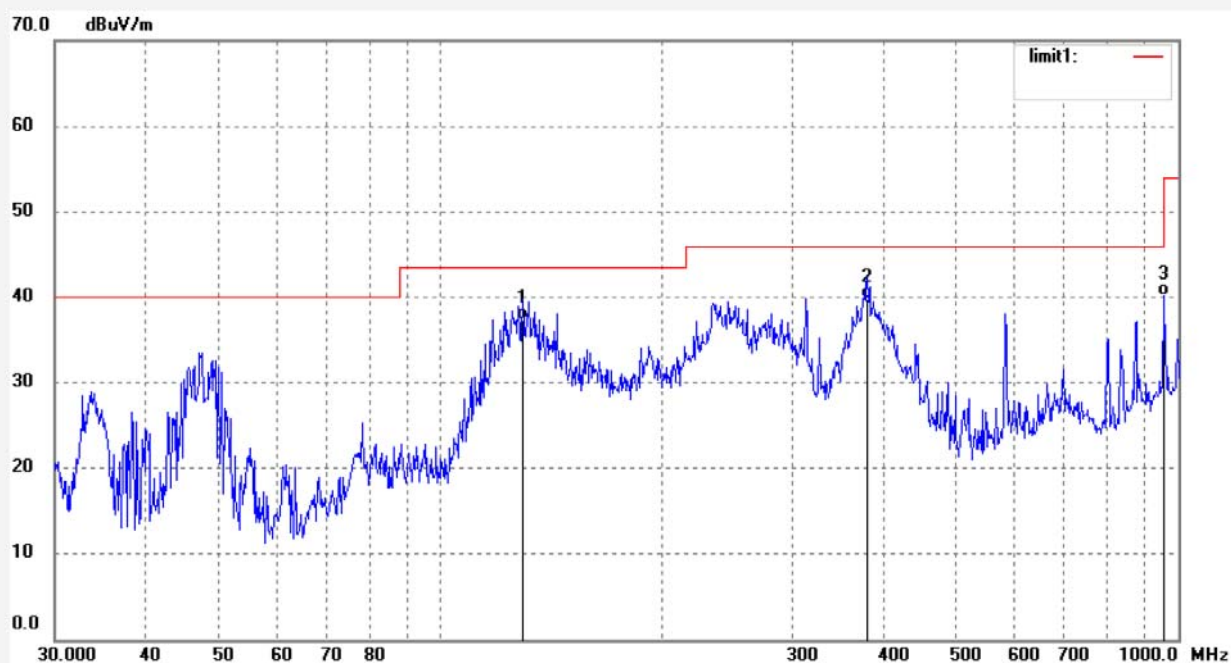
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star2016 #676
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Inno3D 3D Printer S1
Mode: USB Printer
Model: I3DPS1BK
Manufacturer: InnoVISION Multimedia Limited

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2016-5-6
Time: 10:08:42
Engineer Signature: star
Distance: 3m

Note: Report No.:ATE20160778



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	129.3923	59.00	-21.71	37.29	43.50	-6.21	QP			
2	379.1780	53.94	-14.15	39.79	46.00	-6.21	QP			
3	955.3509	43.51	-3.35	40.16	46.00	-5.84	QP			



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Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2016 #677

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Inno3D 3D Printer S1

Mode: USB Printer

Model: I3DPS1BK

Manufacturer: InnoVISION Multimedia Limited

Polarization: Vertical

Power Source: AC 120V/60Hz

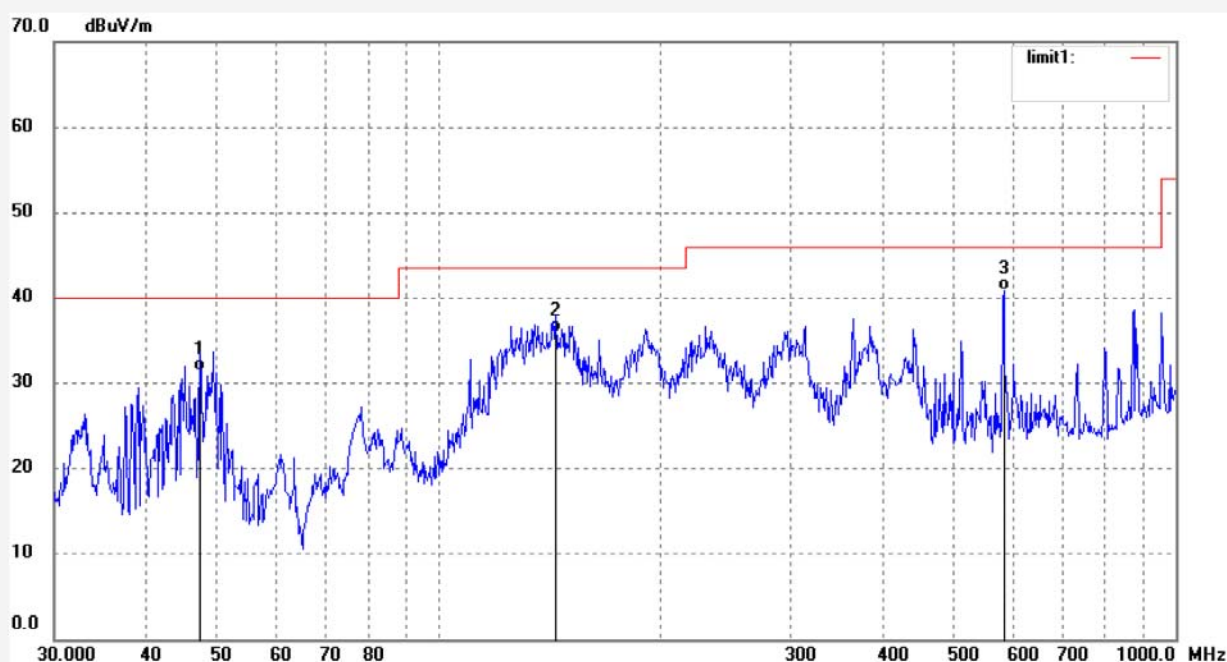
Date: 2016-5-6

Time: 10:12:31

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20160778



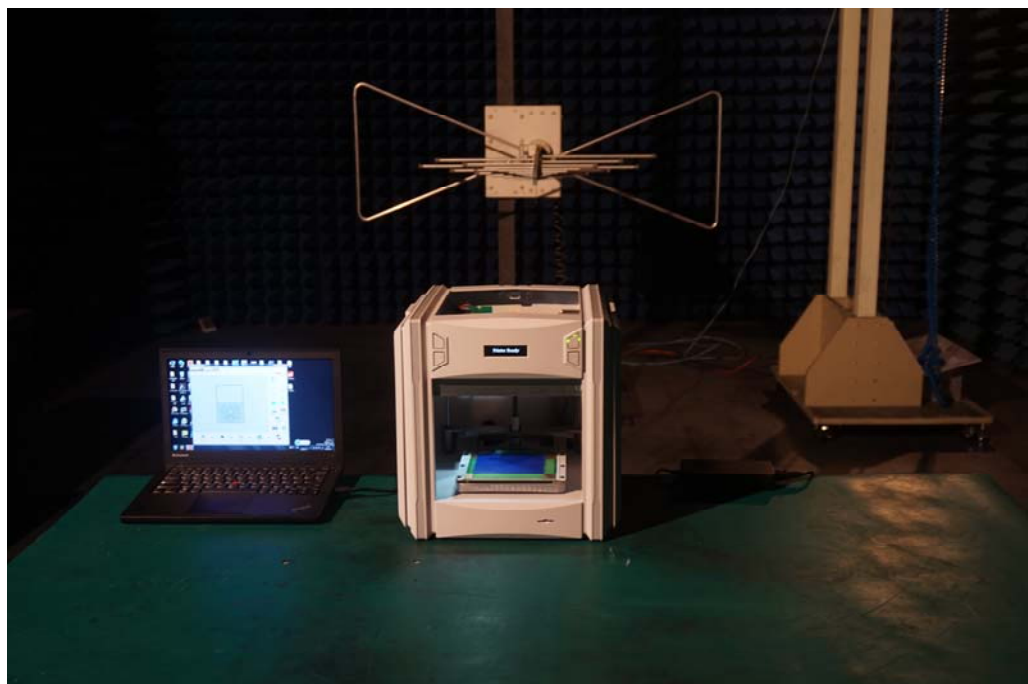
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	47.3688	51.36	-20.01	31.35	40.00	-8.65	QP			
2	143.7760	58.11	-22.20	35.91	43.50	-7.59	QP			
3	584.1611	51.12	-10.27	40.85	46.00	-5.15	QP			

6. PHOTOGRAPHS

6.1.Photo of Conducted Emission Measurement



6.2.Photos of Radiated Emission Measurement



6.3.Photo of EUT

