



Shenzhen Global Test Service Co.,Ltd.

1F, Building No. 13A, Zhonghaixin Science and Technology City, No.12,6 Road, Ganli Industrial Park, Buji Street, Longgang District, Shenzhen, Guangdong

TEST REPORT

47 CFR FCC Part 15 Subpart B (Class B)

Radio Frequency Devices – Unintentional Radiators – Limits and methods of measurement

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

Report Reference No.....: GTSR16020032

FCC ID.....: 2AHMXDOOGEEP1

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Date of issue.....: Mar. 21, 2016

Representative Laboratory Name.: Shenzhen Global Test Service Co.,Ltd.

Address: 1F, Building No. 13A, Zhonghaixin Science and Technology City, No.12,6 Road, Ganli Industrial Park, Buji Street, Longgang District, Shenzhen, Guangdong

Applicant's name.....: Shenzhen DOOGEE TONG WEI Tech Co.,Ltd.

Address: The Forth and Fifth floor of the western Room 412,plant 405, Sangda estate, Zhehua Road, Huaqiang North street, Futian Dis. Shenzhen

Test specification:

Standard: 47 CFR FCC Part 15 Subpart B (Class B)

ANSI C63.4: 2014

TRF Originator.....: Shenzhen Global Test Service Co.,Ltd.

Master TRF.....: Dated 2014-12

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Test item description Smart projector

Trade Mark:

Manufacturer.....: Shenzhen DOOGEE TONG WEI Tech Co.,Ltd.

Model/Type reference.....: DOOGEE P1

Listed Models: /

Ratings: Input:AC100-240V,50/60Hz,0.5A

Output:DC5V,2A

Result.....: **Pass**

TEST REPORT

Test Report No. : GTSR16020032	Mar. 21, 2016 Date of issue
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Equipment under Test : Smart projector

Model /Type : DOOGEE P1

Listed Models : /

Applicant : **Shenzhen DOOGEE TONG WEI Tech Co.,Ltd.**

Address : The Forth and Fifth floor of the western Room 412,plant
405, Sangda estate, Zhehua Road, Huaqiang North
street, Futian Dis. Shenzhen

Manufacturer **Shenzhen DOOGEE TONG WEI Tech Co.,Ltd.**

Address The Forth and Fifth floor of the western Room 412,plant
405, Sangda estate, Zhehua Road, Huaqiang North
street, Futian Dis. Shenzhen

Test Result	Pass
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. TEST STANDARDS

The tests were performed according to following standards:

[47 CFR FCC Part 15 Subpart B \(Class B\)](#) Radio Frequency Devices – Unintentional Radiators – Limits and methods of measurement

[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.

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Mar. 01, 2016
Testing commenced on	:	Mar. 01, 2016
Testing concluded on	:	Mar. 21, 2016

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage	:	☐ 120V / 60 Hz	☐ 230V / 50Hz
		☐ 12 V DC	☐ 24 V DC
		☒ Other (specified in blank below)	

USB 5V From PC

2.3. Short description of the Equipment under Test (EUT)

The EUT is a Smart projector.

2.4. EUT operation mode

Operation mode	
Mode 1	Data transmission

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - Supplied by the lab

☐	COMPUTER	M/N:	P5240
		Manufacturer:	DELL
☐	LCD	M/N:	E177FPB
		Manufacturer:	DELL
☐	Mouse	M/N:	M230
		Manufacturer:	DELL
☐	LASER PRINTER	M/N:	HP LASERJET 1020 PLUS
		Manufacturer:	HP

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Global Test Service Co.,Ltd.
1F, Building No. 13A, Zhonghaixin Science and Technology City, No.12,6 Road, Ganli Industrial Park,
Buji Street, Longgang District, Shenzhen, Guangdong

Shenzhen CTL Testing Technology Co.,Ltd.
1/F.-A, Baisha Technology Park, No.3011, Shaheji Road, Nanshan District, Shenzhen, Guangdong,
China

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 964637

Shenzhen Global Test Service 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. Registration 964637, Jul 24, 2015.

CNAS-Lab Code: L8169

Shenzhen Global Test Service Co.,Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories. Date of Registration: Dec. 11, 2015. Valid time is until Dec. 10, 2018.

FCC-Registration No.: 970318

Shenzhen CTL Testing Technology 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. Registration 970318, December 19, 2013.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	<u>15-35 ° C</u>
Humidity:	<u>30-60 %</u>
Atmospheric pressure:	<u>950-1050mbar</u>

3.4. Test Description

Emission Measurement		
Radiated Emission	47 CFR FCC Part 15 Subpart B Class B ANSI C63.4 2014	PASS
Conducted Disturbance	47 CFR FCC Part 15 Subpart B Class B ANSI C63.4 2014	PASS

Remark: N/A means "not applicable".

The measurement uncertainty is not included in the test result.

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen Global Test Service Co.,Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for GTS laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10dB	(1)
Radiated Emission	1~18GHz	4.32dB	(1)
Conducted Disturbance	0.15~30MHz	3.12dB	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

3.6. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
LISN	R&S	ENV216	3560.6550.08	2015/05/28	2016/05/27
LISN	R&S	ESH2-Z5	893606/008	2015/05/27	2016/05/26
Bilog Antenna	Sunol Sciences Corp.	JB1	A061713	2015/06/02	2016/06/01
EMI Test Receiver	R&S	ESCI	101102	2015/06/26	2016/06/25
Controller	EM Electronics	Controller EM 1000	N/A	2015/05/21	2016/05/20
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2015/05/19	2016/05/18
Amplifier	Agilent	8349B	3008A02306	2015/05/19	2016/05/18
Amplifier	Agilent	8447D	2944A10176	2015/05/19	2016/05/18
Temperature/Humidity Meter	Gangxing	CTH-608	02	2015/05/20	2016/05/19
RF Cable	HUBER+SUHNER	RG214	N/A	2015/05/20	2016/05/19

The calibration interval was one year.

4. TEST CONDITIONS AND RESULTS

4.1. Radiated Emission

4.1.1. LIMITS OF DISTURBANCE (Class B)

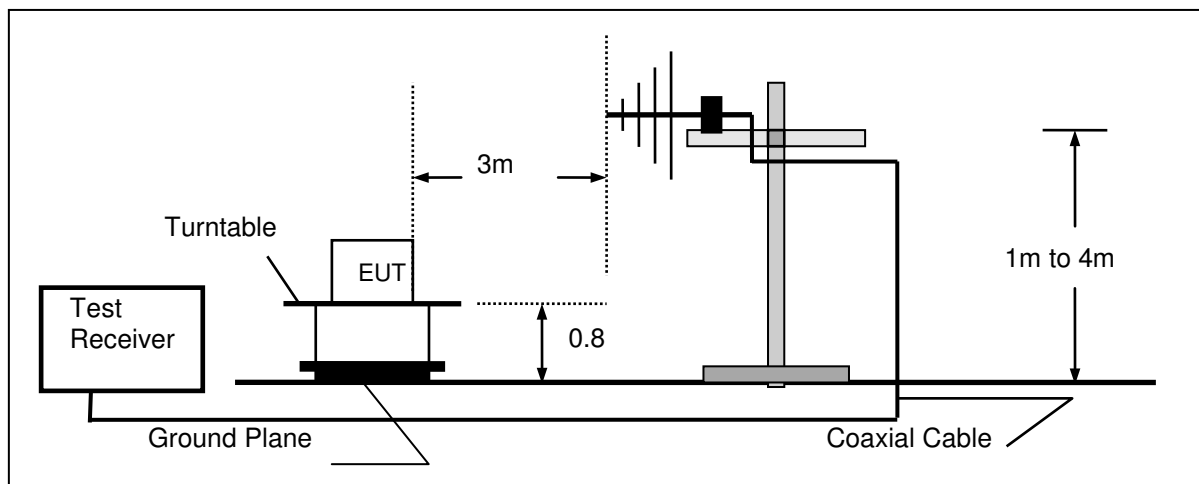
Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB μ V/m)
30 ~ 88	3	40
88~216	3	43.5
216 ~ 960	3	46
Above 960 PK	3	54
Above 960 AV	3	74

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

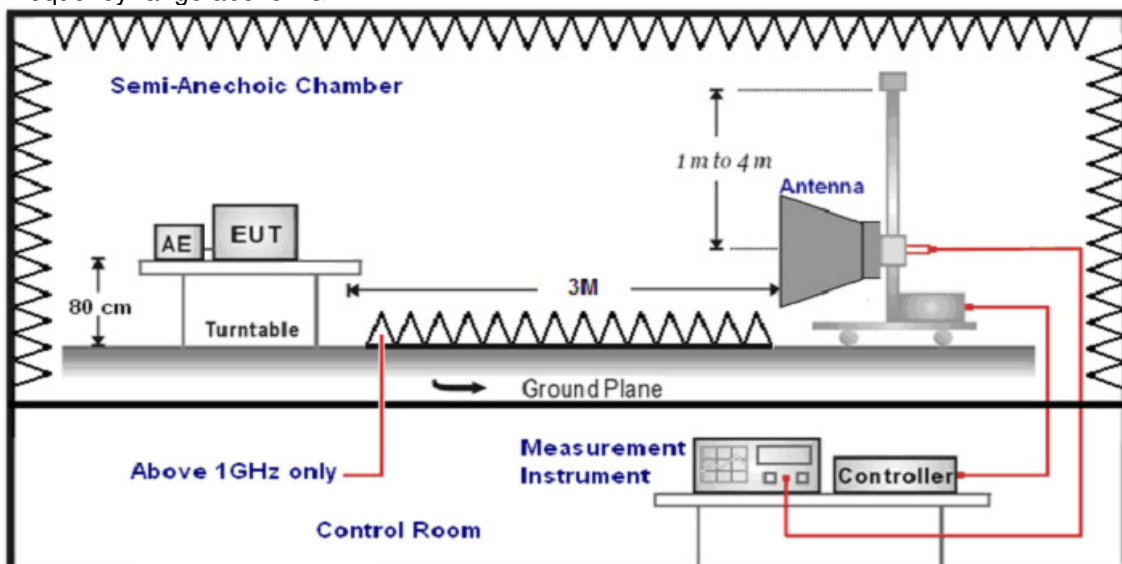
(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

4.1.2. TEST CONFIGURATION

Frequency range 30MHz – 1000MHz



Frequency range above 1GHz



4.1.3. TEST PROCEDURE

EUT is tested in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level. EUT is set 3 meters away from the center of receiving antenna. The antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test.

4.1.4. CLIMATIC CONDITIONS

- ambient temperature : 24 °C
- relative humidity: 48%
- atmospheric pressure: 960 mbar

4.1.5. TEST RESULTS

Remark: The highest frequency of the internal sources of the EUT is more than 108 MHz, the measurement shall only be made up to 6GHz. (Work frequency: 500MHz)

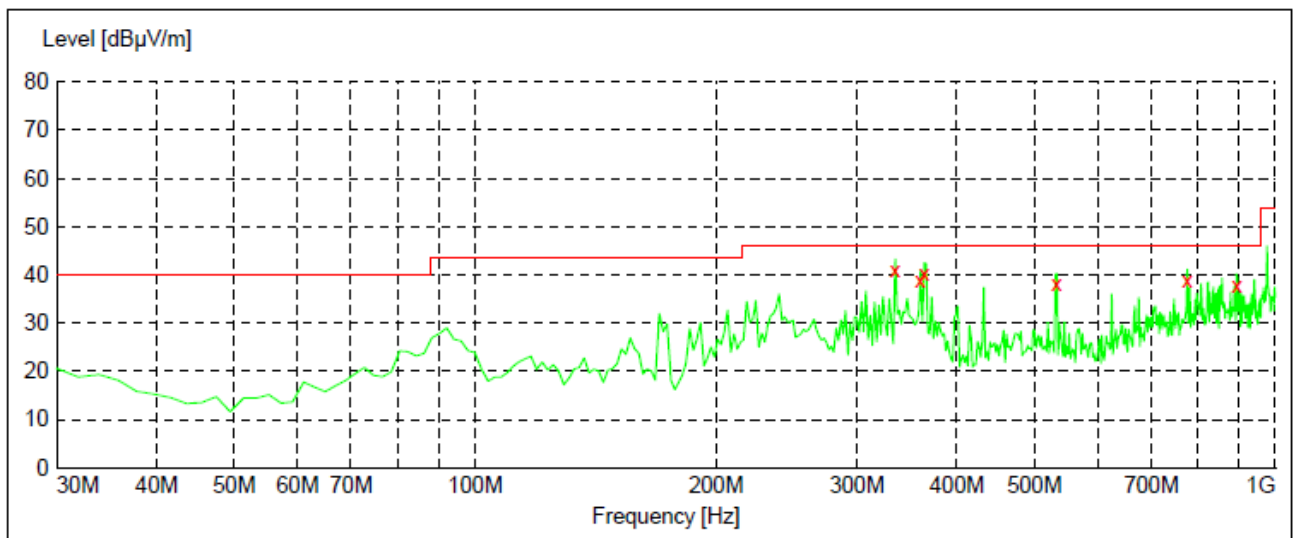
Test site: Shenzhen CTL Testing Technology Co., Ltd

Power supply:

USB 5V From PC

Polarization

Horizontal



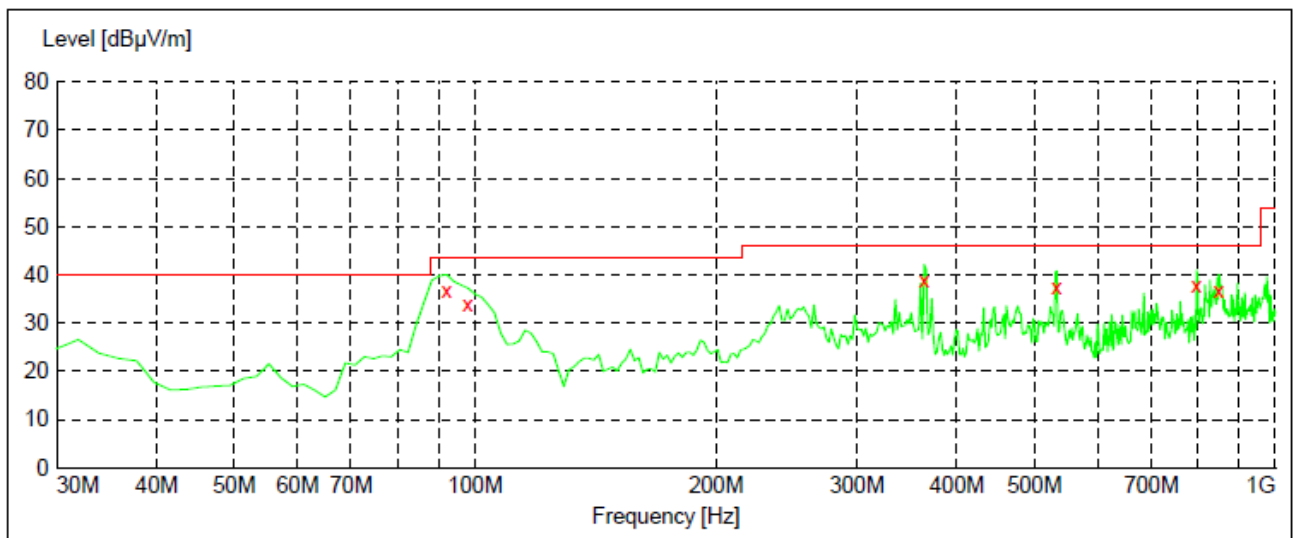
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
335.190381	40.30	15.2	46.0	5.7	QP	100.0	343.00	HORIZONTAL
360.460922	38.00	16.1	46.0	8.0	QP	100.0	10.00	HORIZONTAL
364.348697	39.50	16.4	46.0	6.5	QP	100.0	349.00	HORIZONTAL
533.466934	37.30	19.7	46.0	8.7	QP	100.0	57.00	HORIZONTAL
776.452906	38.20	22.3	46.0	7.8	QP	300.0	326.00	HORIZONTAL
895.030060	37.20	23.7	46.0	8.8	QP	300.0	291.00	HORIZONTAL

Power supply:

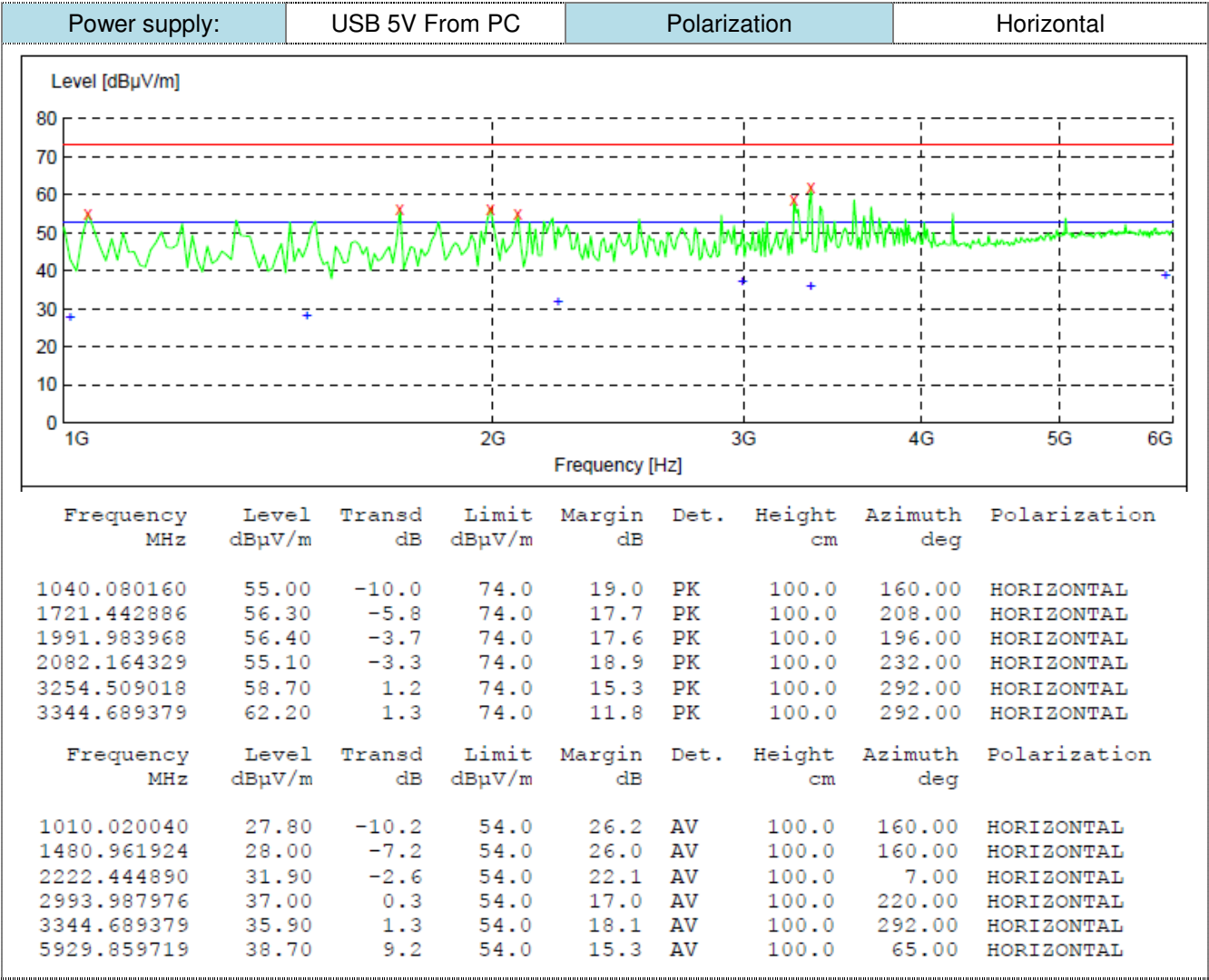
USB 5V From PC

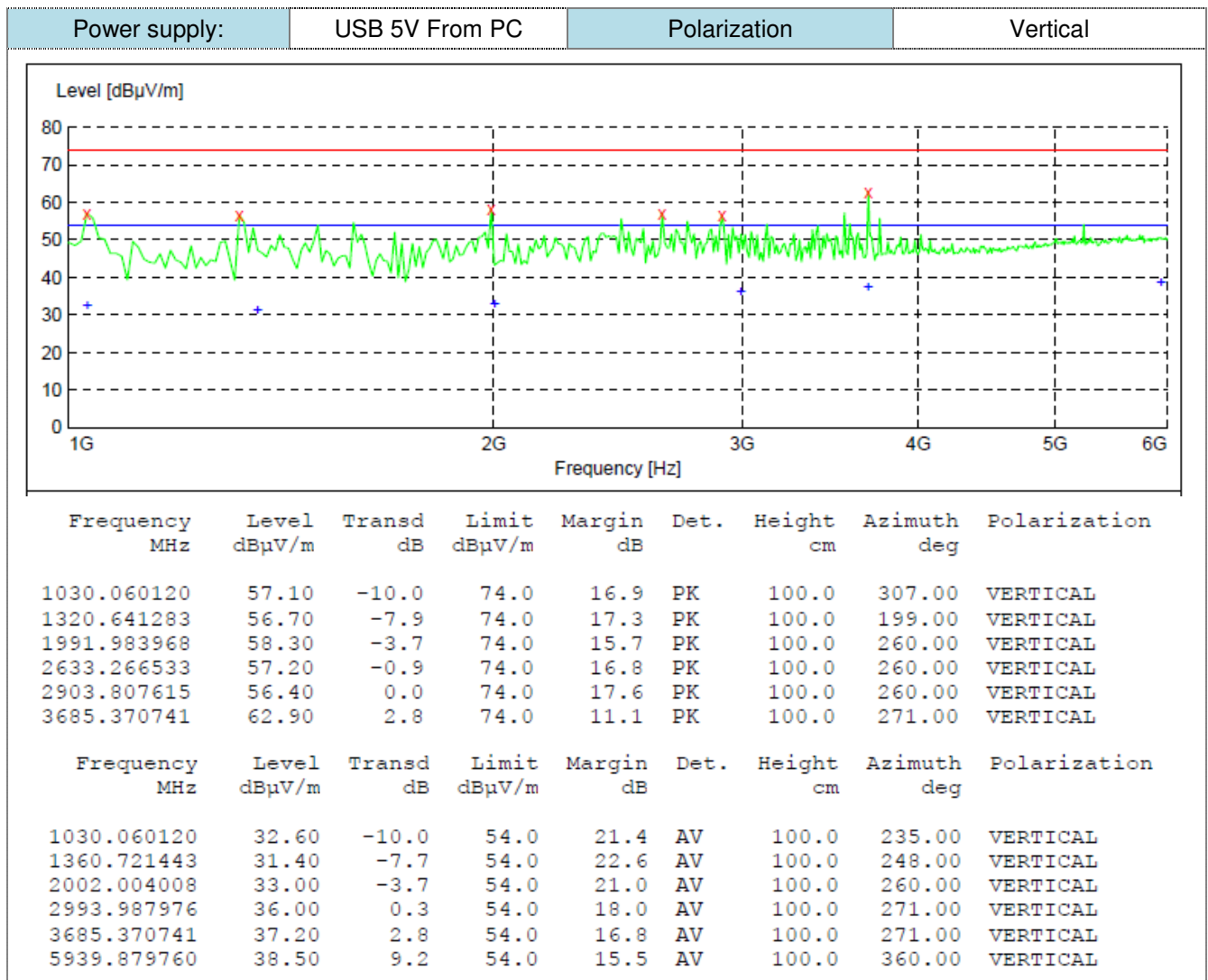
Polarization

Vertical



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
92.200000	37.10	9.5	43.5	6.4	QP	100.0	46.00	VERTICAL
98.030000	34.30	11.2	43.5	9.2	QP	100.0	117.00	VERTICAL
364.340000	39.20	16.4	46.0	6.8	QP	100.0	248.00	VERTICAL
533.460000	37.80	19.7	46.0	8.2	QP	100.0	359.00	VERTICAL
797.830000	38.00	23.5	46.0	8.0	QP	100.0	15.00	VERTICAL
850.320000	37.10	24.3	46.0	8.9	QP	100.0	313.00	VERTICAL





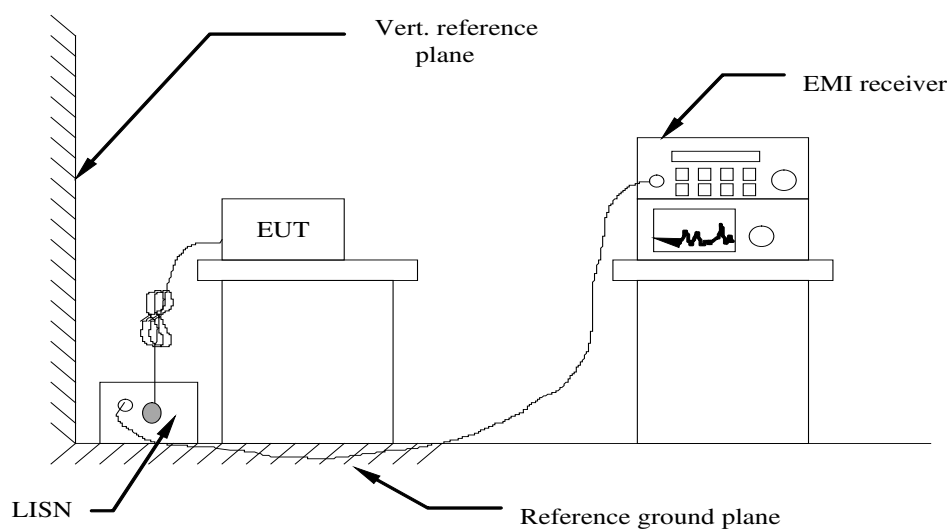
4.2. Conducted disturbance

4.2.1. LIMITS OF DISTURBANCE (Class B)

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150~0.500	66~56	56~46
0.500~5.000	56	46
5.000~30.000	60	50

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

4.2.2. TEST CONFIGURATION



4.2.3. TEST PROCEDURE

EUT is placed on a nonmetal table which is 0.8 meter (or 0.1 meter for floor-stood equipments) above the grounded reference plane. Connect the power line of the EUT to the LISN. Voltage of the power supply is varied over a range of 0.9 to 1.1 times of the rated voltage in order to check whether the level of disturbance varies considerably with the supply voltage at the selected frequency about 160KHz. Perform an initial measurement on each line with peak detector to identify the frequencies where the maximum disturbances may occur. Then measure and record the maximum disturbances with quasi-peak and average detector.

4.2.4. CLIMATIC CONDITIONS

- ambient temperature : 25 °C
- relative humidity: 52%
- atmospheric pressure: 960 mbar

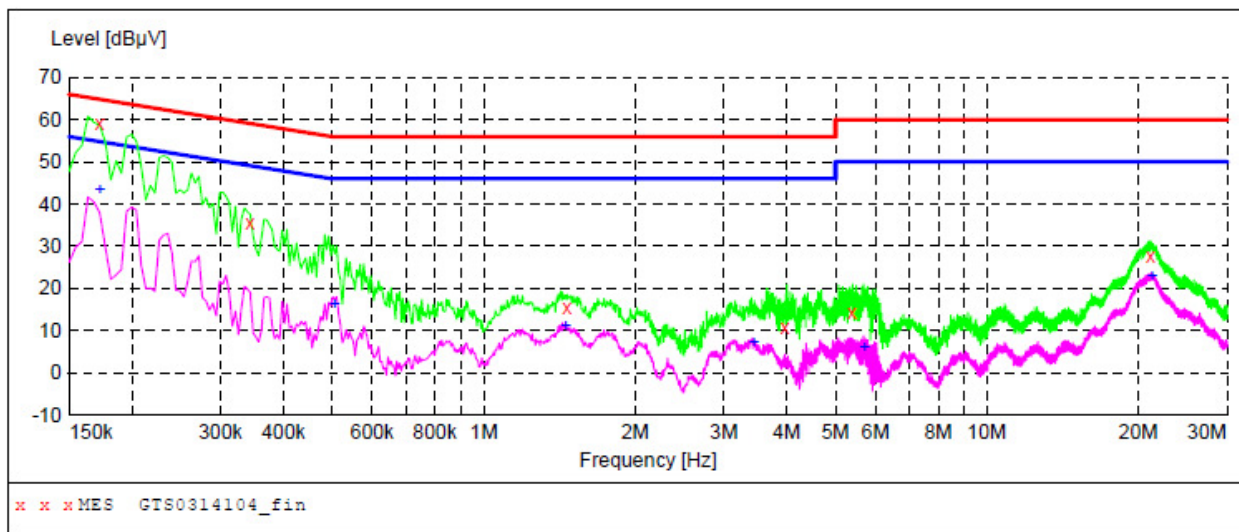
4.2.5. TEST RESULTS

Power supply:

USB 5V From PC

Polarization

L

**MEASUREMENT RESULT: "GTS0314104_fin"**

3/14/2016 4:48PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.172500	59.10	10.0	65	5.7	QP	L1	GND
0.343500	35.50	9.9	59	23.6	QP	L1	GND
1.464000	15.60	9.6	56	40.4	QP	L1	GND
3.970500	10.90	9.4	56	45.1	QP	L1	GND
5.383500	14.40	9.3	60	45.6	QP	L1	GND
21.106500	27.80	7.0	60	32.2	QP	L1	GND

MEASUREMENT RESULT: "GTS0314104_fin2"

3/14/2016 4:48PM

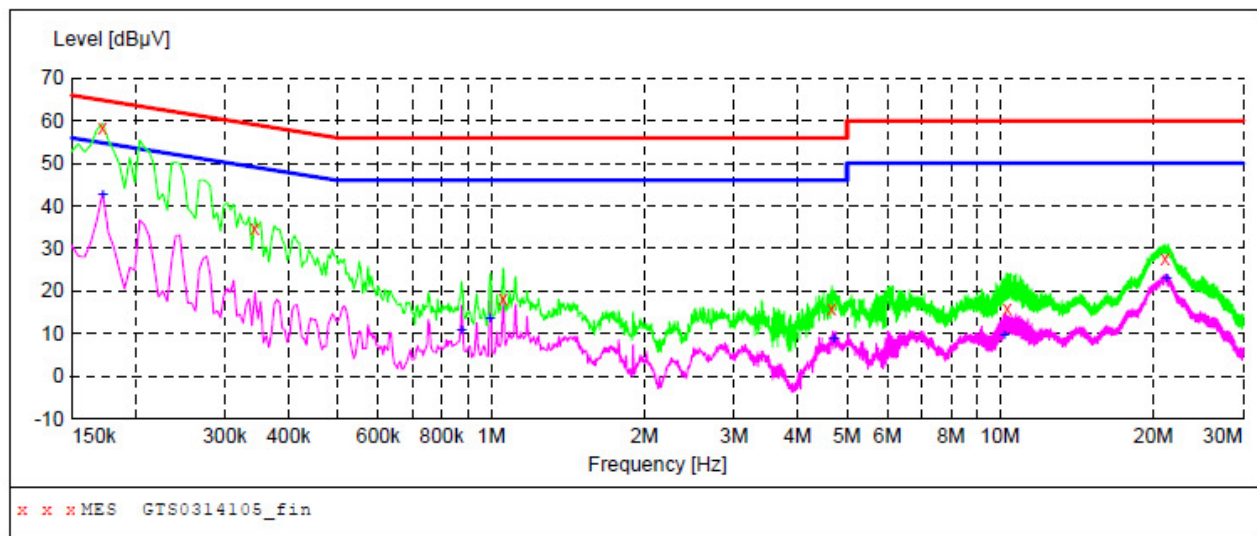
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.172500	43.40	10.0	55	11.4	AV	L1	GND
0.505500	16.30	9.8	46	29.7	AV	L1	GND
1.455000	11.10	9.6	46	34.9	AV	L1	GND
3.439500	7.30	9.4	46	38.7	AV	L1	GND
5.698500	6.00	9.2	50	44.0	AV	L1	GND
21.255000	23.10	7.0	50	26.9	AV	L1	GND

Power supply:

USB 5V From PC

Polarization

N

**MEASUREMENT RESULT: "GTS0314105_fin"**

3/14/2016 4:51PM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.172500	58.40	10.0	65	6.4	QP	N	GND
0.343500	34.70	9.9	59	24.4	QP	N	GND
1.054500	18.40	9.6	56	37.6	QP	N	GND
4.668000	15.90	9.3	56	40.1	QP	N	GND
10.315500	15.90	8.8	60	44.1	QP	N	GND
21.052500	27.80	7.0	60	32.2	QP	N	GND

MEASUREMENT RESULT: "GTS0314105_fin2"

3/14/2016 4:51PM

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.172500	42.70	10.0	55	12.1	AV	N	GND
0.874500	10.90	9.6	46	35.1	AV	N	GND
0.996000	13.50	9.6	46	32.5	AV	N	GND
4.704000	8.70	9.3	46	37.3	AV	N	GND
10.194000	9.50	8.9	50	40.5	AV	N	GND
21.201000	23.00	7.0	50	27.0	AV	N	GND

5. Test Setup Photos of the EUT

Radiated Emission (30-1000MHz)



Radiated Emission (1-6GHz)

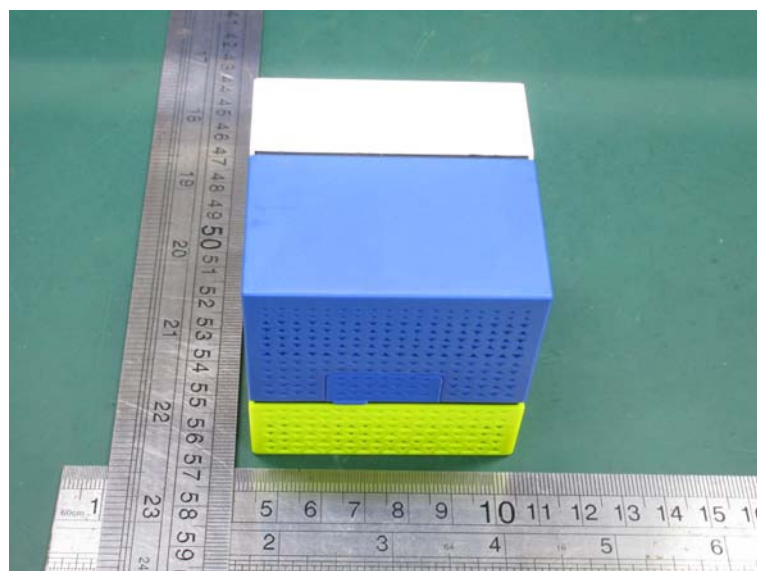
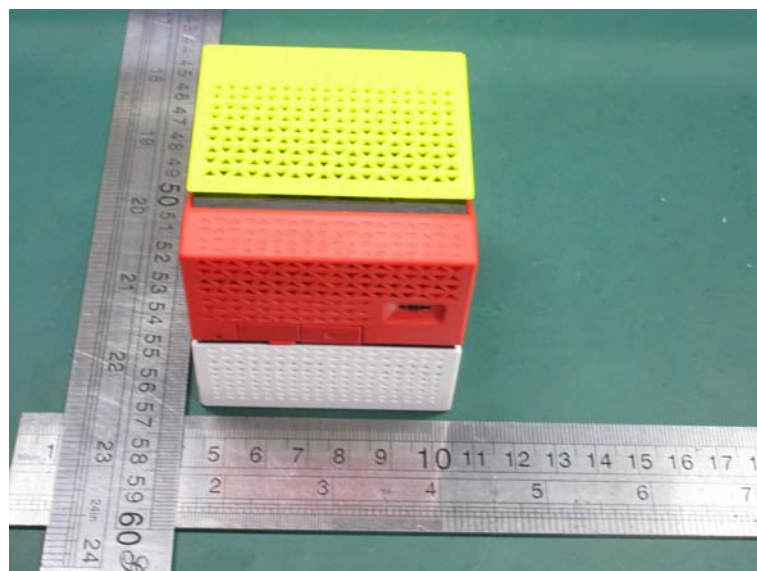


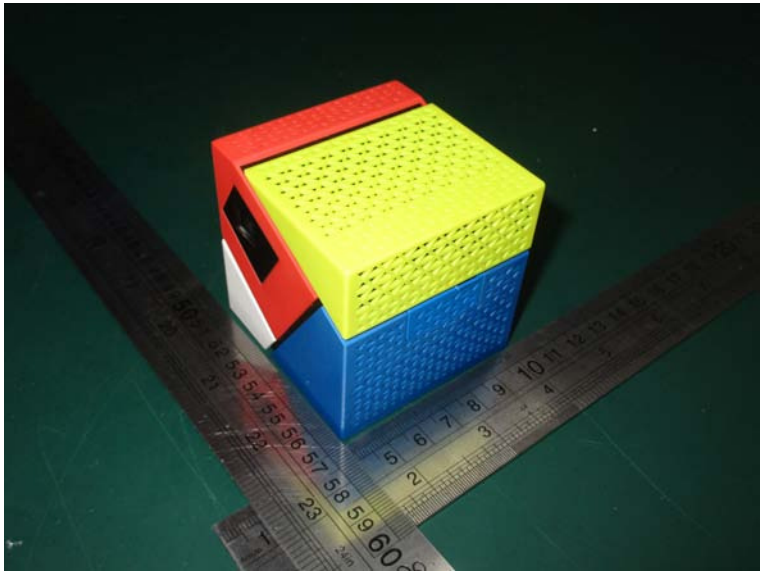
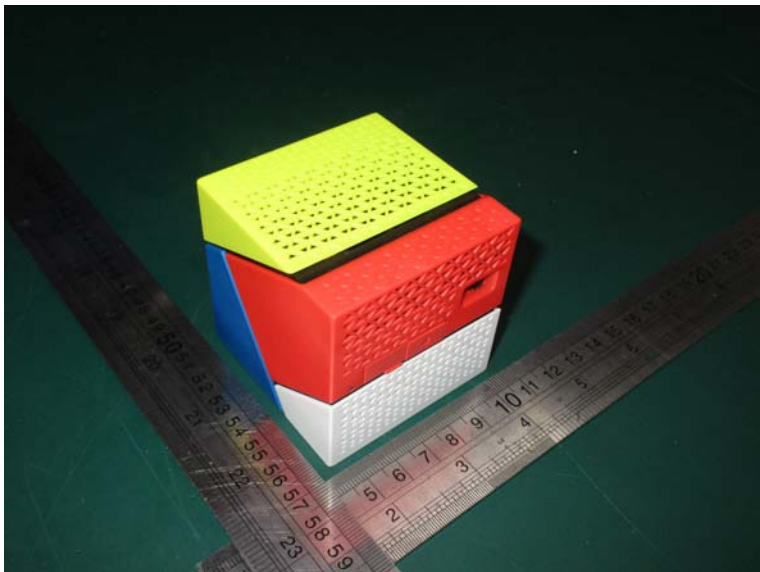
Conducted Emission



6. External and Internal Photos of the EUT

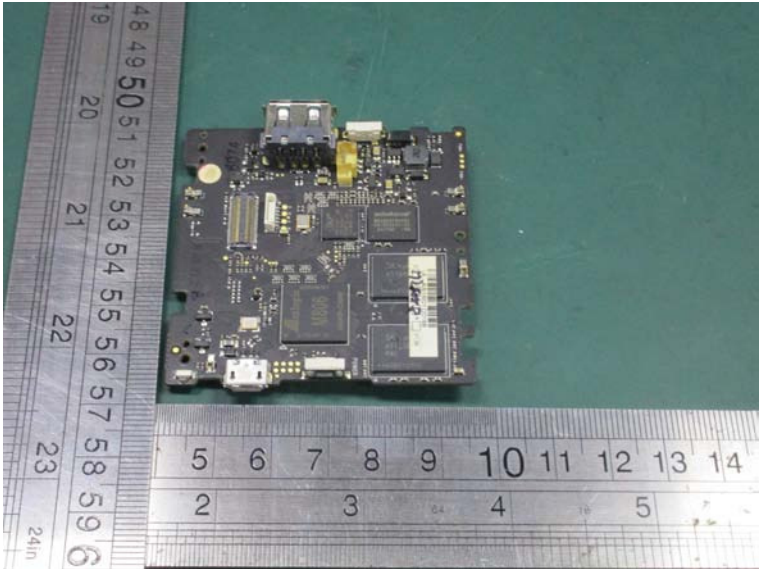
External Photos

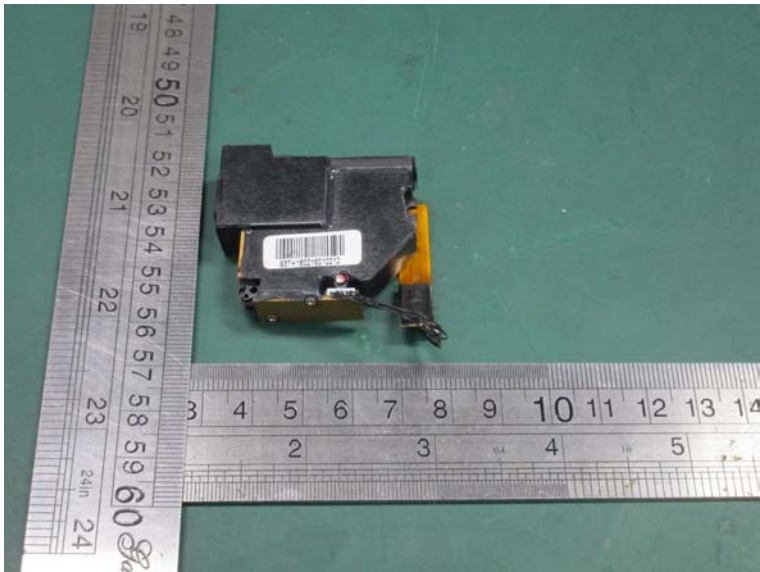
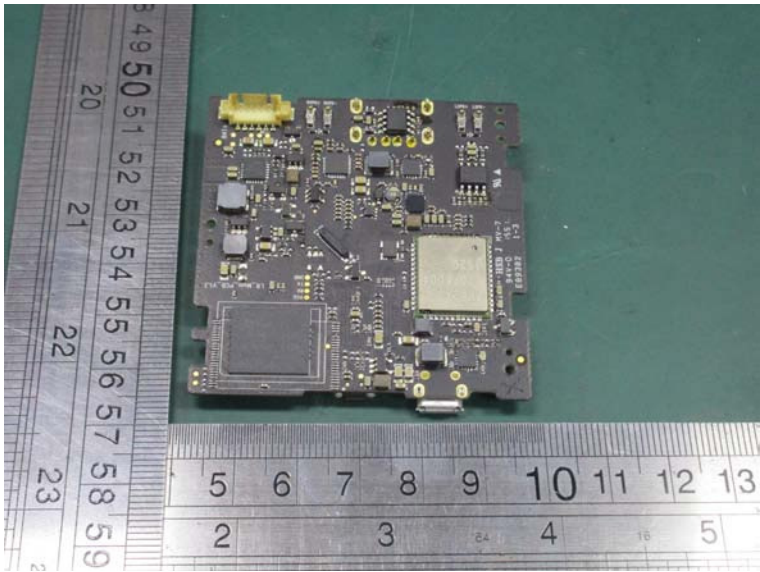


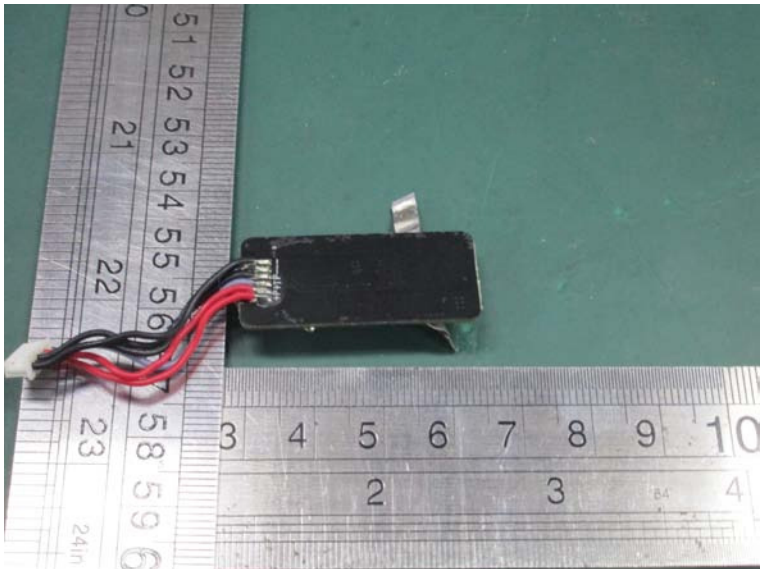
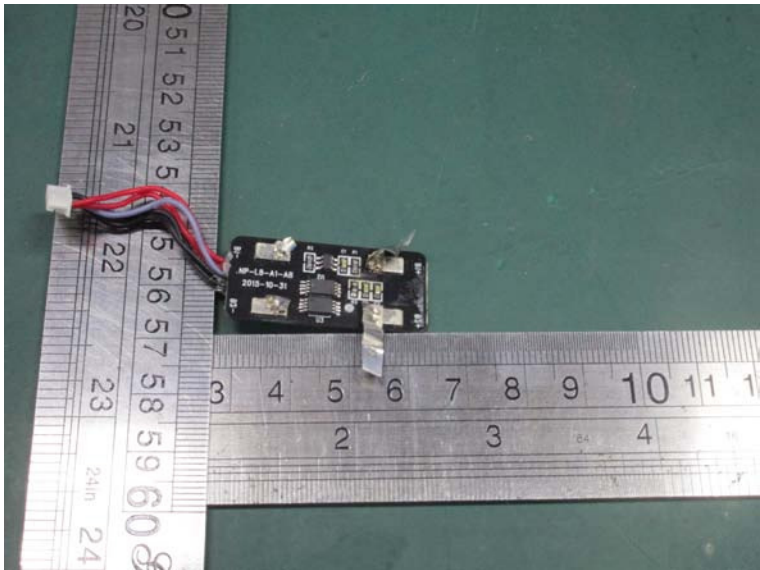




Internal Photos







.....End of Report.....