TEST REPORT

Reference No:	WT12128442-S-S-F			
FCC ID:	YVV-AEE18192021			
Applicant:	Shenzhen AEE Technology CO., LTD.			
Address:	AEE Hi-Tech Park, Sun Industrial Area, XIII, Nanshan District, Shenzhen, P.R.C 518108			
Manufacturer:	Shenzhen AEE Technology CO., LTD.			
Address:	AEE Hi-Tech Park, Sun Industrial Area, XIII, Nanshan District, Shenzhen, P.R.C 518108			
Product Name:	Action Camcorder			
Model No :	SD18,SD19,SD20			
Standards:	FCC PART15 SUBPART B 2010			
Date of Receipt sample :	Dec.12, 2012			
Date of Test:	Dec.12, 2012 to Dec.19, 2012			
Date of Issue:	Dec.19, 2012			
Test Report Form No:	FCC 15-1A			
Test Result:	Pass *			
Remarks: The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver. Prepared By: Waltek Services (Shenzhen) Co., Ltd. Address: 1/F., Fukangtai Building, West Baima Road, Songgang Street, Baoan District, Shenzhen, Guangdong, China Testing location: 1/F., Fukangtai Building, West Baima Road, Songgang Street, Baoan District, Shenzhen, Guangdong, China Tel :+86-755-83551033 Fax:+86-755-83552400				
Compiled by:	Approved by:			
On 7º	Thelo shoul			

Philo Zhong / Manager

Waltek Services (Shenzhen) Co., Ltd.

Zero zhou / Project Engineer

http://www.waltek.com.cn

Reference No.: WT12128442-S-S-F Page 2 of 40

1 Test Summary

Test Item	Test Requirement	Class	Test Method	Test Result
Conducted Emission (150KHz to 30MHz)	FCC PART 15, SUBPART B: 2010	Class B	ANSI C63.4: 2003	Pass
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2010	Class B	ANSI C63.4: 2003	Pass
Radiated Emission (Above 1GHz)	FCC PART 15, SUBPART B: 2010	Class B	ANSI C63.4: 2003	Pass

Pass Test item meets the requirement

2 Contents

	COVE	R PAGE	Page		
		SUMMARY			
1	IESI (SUMMARY	2		
2	CONT	ENTS	3		
3	GENE	RAL INFORMATION	4		
	3.1	GENERAL DESCRIPTION OF E.U.T.	4		
	3.2	DETAILS OF E.U.T			
	3.3	DESCRIPTION OF SUPPORT UNITS			
	3.4	STANDARDS APPLICABLE FOR TESTING			
	3.5	TEST FACILITY			
	3.6	SUBCONTRACTED			
	3.7	ABNORMALITIES FROM STANDARD CONDITIONS	4		
4	EQUIP	MENT USED DURING TEST	5		
	4.1	MEASUREMENT UNCERTAINTY	5		
5	EMISS	EMISSION TEST RESULTS			
	5.1	MAINS TERMINALS DISTURBANCE VOLTAGE, 150KHZ TO 30MHZ	6		
	5.1.1	E.U.T. Operation			
	5.1.2	Block Diagram of Test Setup			
	5.1.3	Measurement Data			
	5.1.4	Mains Terminals Disturbance Voltage Test Data			
	5.2	RADIATION EMISSION FOR 30MHz TO 1000MHz			
	5.2.1	E.U.T. Operation			
	5.2.2	Block Diagram of Test Setup			
	5.2.3	Measurement Data			
	5.2.4 5.3	Radiated Emission test datas, 30MHz to 1000MHz			
	5.3 5.3.1	RADIATION EMISSION FOR ABOVE 1000MHZ			
	5.3.1 5.3.2	Block Diagram of Test Setup			
	5.3.3	Measurement Data			
	5.3.4	Radiation Emission Data above 1GHz			
6		OGRAPHS – TEST SETUP			
	6.1				
	6.2	PHOTOGRAPH – RADIATED EMISSION TEST SETUP 30MHz TO 1GHz			
	6.3	PHOTOGRAPH -RADIATED EMISSION TEST SETUP ABOVE 1GHz			
7	PHOT	OGRAPHS – CONSTRUCTIONAL DETAILS	30		
	7.1	EUT – EXTERNAL VIEW			
	7.2	EUT – Internal View	34		
8	FCC II	LABEL	40		

Reference No.: WT12128442-S-S-F Page 4 of 40

3 General Information

3.1 General Description of E.U.T.

Product Name: Action Camcorder

Model No......: SD18,SD19,SD20

Model Differences : According to information supplied by the applicant, only the model name

and appearance are different.

3.2 Details of E.U.T.

Technical Data: DC 3.7V (Via built-in Li-ion battery)

Adapter Input: 100-240V AC, 50/60Hz, 0.25A MAX

Adapter Output: 5.0V DC, 1.0A

Operating Frequency . : 433.92MHz

3.3 Description of Support Units

The EUT has been tested as an independent unit. The model SD18 is the tested sample.

3.4 Standards Applicable for Testing

The tests were performed according to following standards:

FCC PART 15, SUBPART B: Electronic Code of Federal Regulations - Unintentional Radiators

2010

3.5 Test Facility

The test facility has a test site registered with the following organizations:

IC – Registration No.: 7760A

Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration 7760A, July 12, 2012.

FCC – Registration No.: 880581

Waltek Services (Shenzhen) Co., Ltd. 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 880581, May 26, 2011.

3.6 Subcontracted

Whether parts of tests	for the product have	been subcontracted	to other labs

☐ Yes ☐ No

If Yes, list the related test items and lab information:

Test Lab: N/A
Lab address: N/A
Test items: N/A

3.7 Abnormalities from Standard Conditions

None.

Waltek Services (Shenzhen) Co., Ltd.

http://www.waltek.com.cn

4 **Equipment Used during Test**

	4 Equipment 0s	ed during rest				
Cond	ucted Emissions					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMI Test Receiver	R&S	ESCI	101178	Aug. 13,2012	Aug. 13,2013
2.	LISN	R&S	ENV216	101215	Aug. 13,2012	Aug. 13,2013
3.	Cable	HUBER+SUHNER	CBL2-NN-3M	2230300	Aug.14,2012	Aug. 14,2013
3m Se	emi-anechoic Chamber	for Radiation Emis	ssions			
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Calibration Date	Calibration Due Date
1.	EMC Analyzer	Agilent	E7405A	MY45114943	Aug. 13,2012	Aug. 13,2013
2.	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Aug. 13,2012	Aug. 13,2013
3.	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	336	Aug. 13,2012	Aug. 13,2013
4.	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	Aug. 13,2012	Aug. 13,2013
5.	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	399	Aug. 13,2012	Aug. 13,2013
6.	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	Feb .23,2012	Feb .23,2013
7.	Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-148	Aug. 13,2012	Aug. 13,2013
8.	10m Coaxial Cable with N- plug	SCHWARZBECK	AK 9515 H	-	Aug. 13,2012	Aug. 13,2013
9.	10m 50 Ohm Coaxial	SCHWARZBECK	AK 9513	-	Aug. 13,2012	Aug. 13,2013

4.1 Measurement Uncertainty

Cable with N-plug

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±3.64dB	(1)
Radiation	30MHz~1000MHz	±5.03dB	(1)

Waltek Services (Shenzhen) Co., Ltd. http://www.waltek.com.cn

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

Reference No.: WT12128442-S-S-F Page 6 of 40

5 Emission Test Results

5.1 Mains Terminals Disturbance Voltage, 150kHz to 30MHz

Test Requirement: FCC PART 15, SUBPART B

Test Method: ANSI C63.4

Test Result.....: Pass

Test Limit.....: FCC PART 15, SUBPART B Section 15.107

Frequency Range: 150kHz to 30MHz

Class B

Limit : 66-56 dBμV between 0.15MHz & 0.5MHz

 $56~dB\mu V$ between 0.5MHz & 5MHz $60~dB\mu V$ between 5MHz & 30MHz

5.1.1 E.U.T. Operation

Operating Environment:

 Temperature
 : 23.5°C

 Humidity
 : 32.1%RH

 Atmospheric Pressure
 : 101.5Kbar

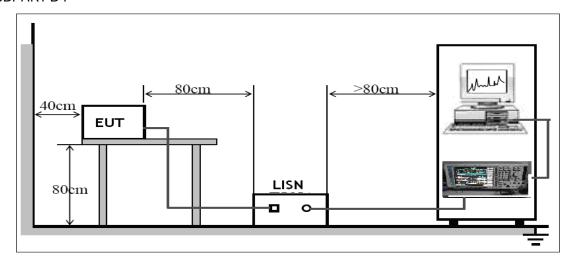
EUT Operation:

Input Voltage: AC 120V/60Hz

Operating Mode...... : 1. Adapter charging mode

5.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with the FCC PART 15, SUBPART B .



Waltek Services (Shenzhen) Co., Ltd. http://www.waltek.com.cn

Reference No.: WT12128442-S-S-F Page 7 of 40

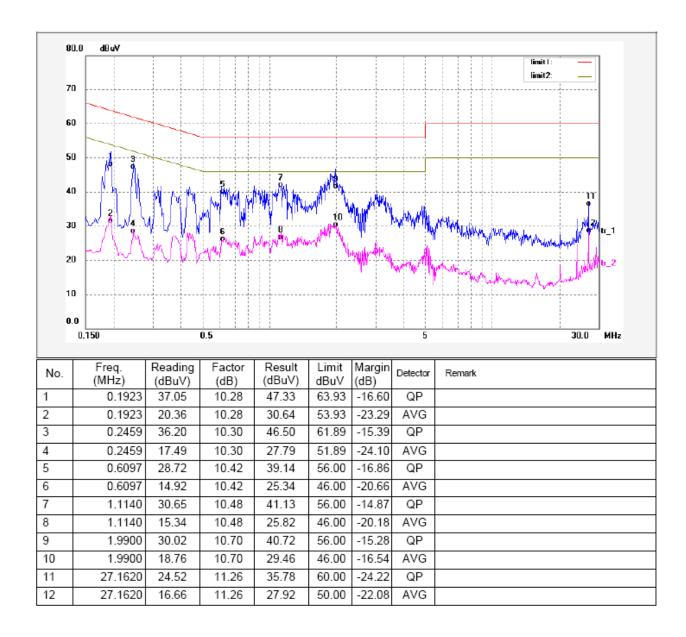
5.1.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line. According to the data in section 5.1.4, the EUT <u>complied with the FCC PART 15.</u> SUBPART B standards.

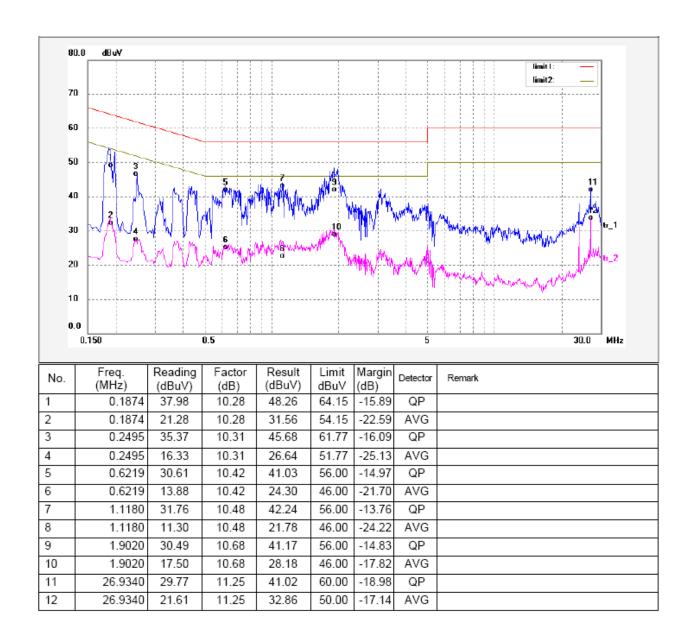
5.1.4 Mains Terminals Disturbance Voltage Test Data

Adapter Charging mode:

Live Line:



Neutral Line:



Reference No.: WT12128442-S-S-F Page 9 of 40

5.2 Radiation Emission For 30MHz to 1000MHz

Test Requirement: FCC PART 15, SUBPART B

Test Method: ANSI C63.4

Test Limit.....: FCC PART 15, SUBPART B Section 15.109

Test Result.....: Pass

Frequency Range: 30MHz to 1000MHz

Class B

Limit : 40.0 dBμV/m between 30MHz & 88MHz

 $43.5~dB\mu V/m$ between 88MHz & 216MHz $46.0~dB\mu V/m$ between 216MHz & 960MHz

54.0 dBµV/m above 960MHz

5.2.1 E.U.T. Operation

Operating Environment:

 Temperature
 : 23.2°C

 Humidity
 : 31.9%RH

 Atmospheric Pressure
 : 101.2Kbar

EUT Operation:

Input Voltage : AC 120V/60Hz and DC 3.7V (via built-in Li-ion battery)

Operating Mode.....

1. Recording mode with and without LCD display (battery operated only)

2. Playing mode with and without LCD display (battery operated only)

3. AV output mode without LCD display (battery operated only)

4. HDMI mode without LCD display (battery operated only)

5. Wireless receiving mode (battery operated only)

6. Charging mode (adapter operated)

Remark...... : For Wireless receiving mode, a typical signal or an unmodulated CW

signal at the operating frequency of the EUT shall be supplied to the EUT for all measurements. Such a signal may be supplied by either a signal

generator and an antenna inclose proximity to the EUT or directly

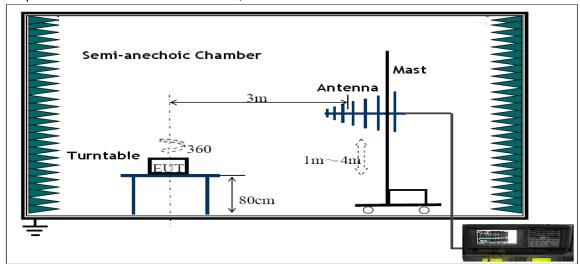
conducted into the antenna terminals of the EUT.

The signal level shall be sufficient to stabilize the local oscillator of the

EUT.

5.2.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the FCC PART 15, SUBPART B.

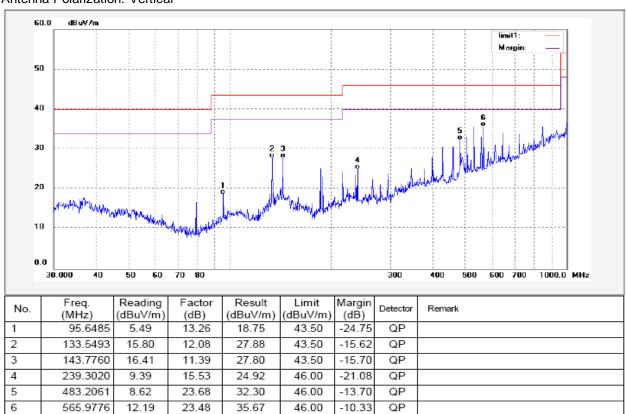


5.2.3 Measurement Data

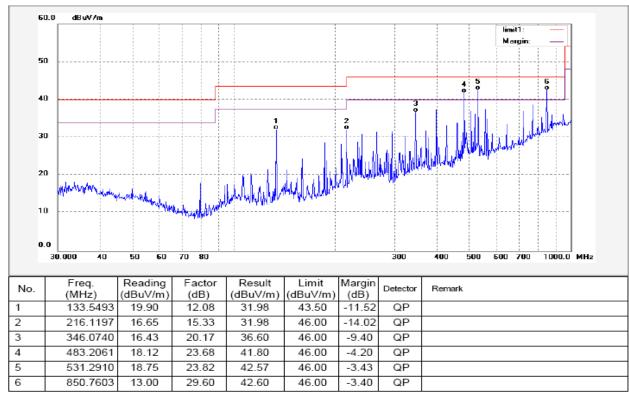
According to the data in section 5.2.4, the EUT <u>complied with the FCC PART 15, SUBPART B</u> standards.

5.2.4 Radiated Emission test datas, 30MHz to 1000MHz

REC Mode (With display): Antenna Polarization: Vertical

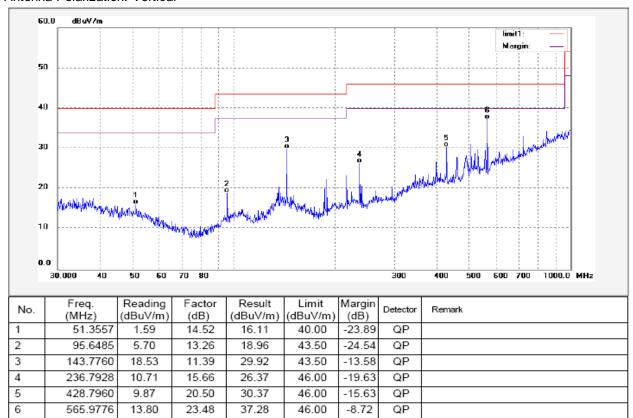


Antenna Polarization: Horizontal

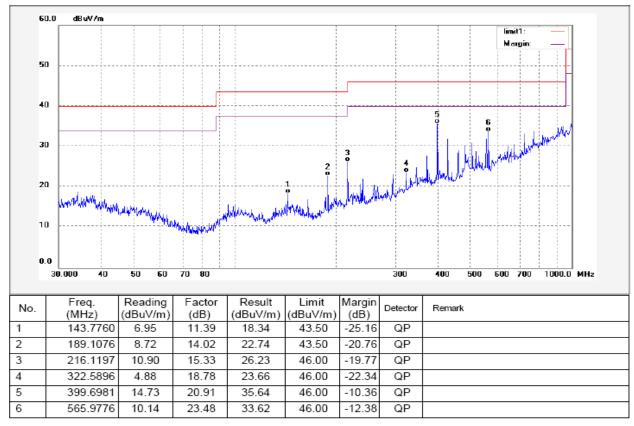


Waltek Services (Shenzhen) Co., Ltd. http://www.waltek.com.cn

REC Mode (Without display): Antenna Polarization: Vertical

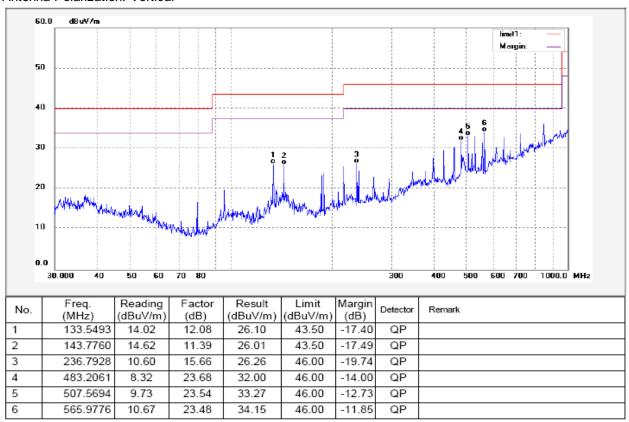


Antenna Polarization: Horizontal

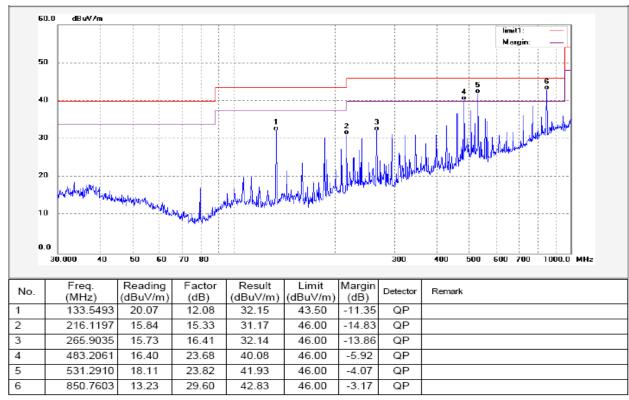


Waltek Services (Shenzhen) Co., Ltd. http://www.waltek.com.cn

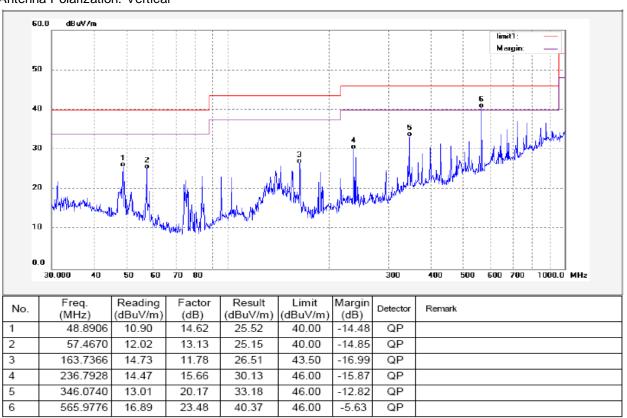
Playing Mode (With display): Antenna Polarization: Vertical



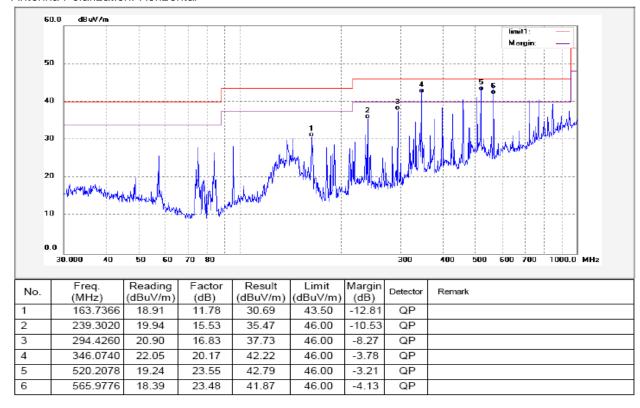
Antenna Polarization: Horizontal



AV Out Mode (Without display): Antenna Polarization: Vertical

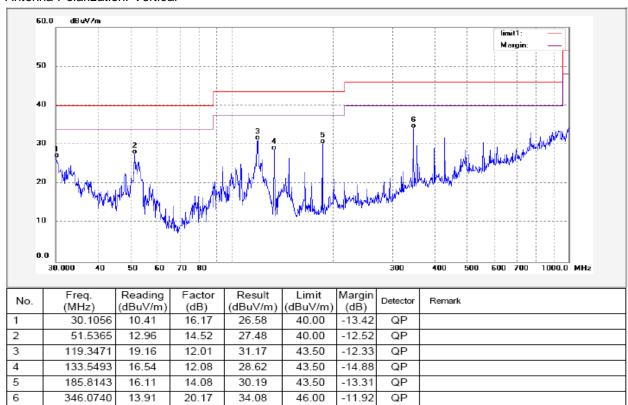


Antenna Polarization: Horizontal

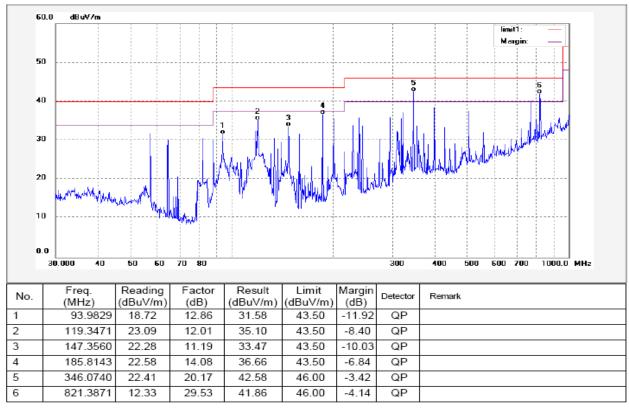


Waltek Services (Shenzhen) Co., Ltd. http://www.waltek.com.cn

Charging Mode (With display): Antenna Polarization: Vertical

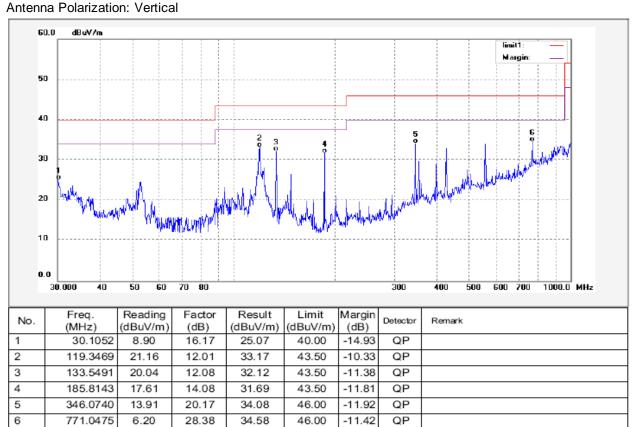


Antenna Polarization: Horizontal

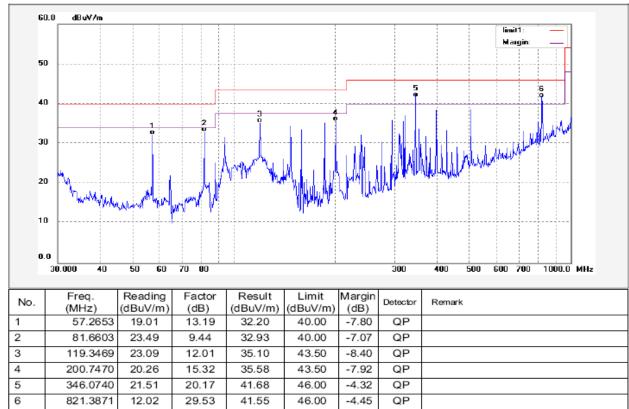


Waltek Services (Shenzhen) Co., Ltd. http://www.waltek.com.cn

Charging Mode (Without display):



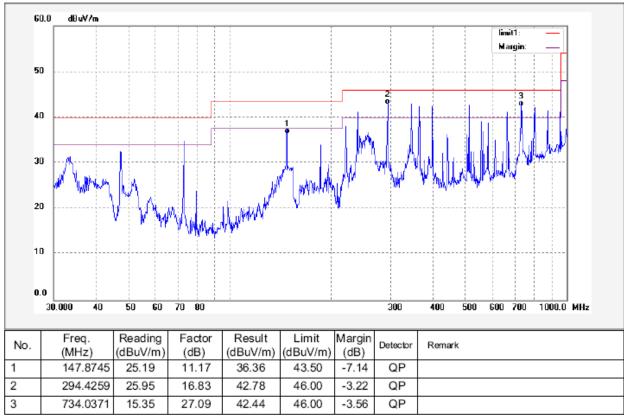
Antenna Polarization: Horizontal



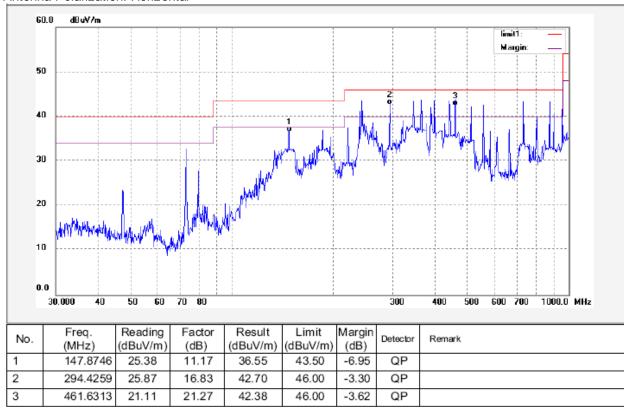
Waltek Services (Shenzhen) Co., Ltd.

http://www.waltek.com.cn

HDMI Mode (Without display): Antenna Polarization: Vertical



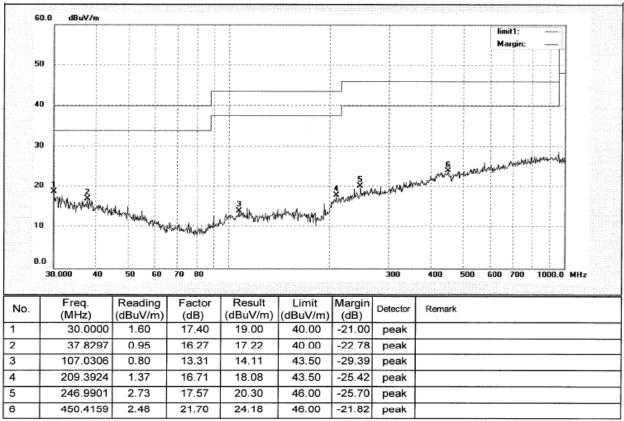
Antenna Polarization: Horizontal



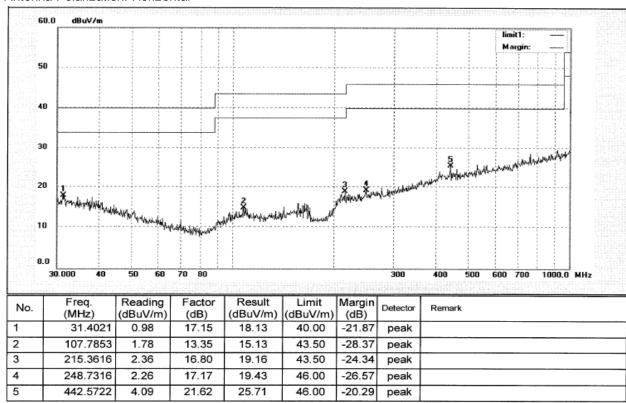
Waltek Services (Shenzhen) Co., Ltd. http://www.waltek.com.cn

RX Mode:

Antenna Polarization: Vertical



Antenna Polarization: Horizontal



Reference No.: WT12128442-S-S-F Page 19 of 40

5.3 Radiation Emission For Above 1000MHz

Test Requirement: FCC PART 15, SUBPART B

Test Method: ANSI C63.4

Test Limit.....: FCC PART 15, SUBPART B Section 15.109

Test Result.....: Pass

Frequency Range: 1000MHz—2000MHz(According to the PART 15, Section 33b))

Class B

5.3.1 E.U.T. Operation

Operating Environment:

 Temperature
 : 23.2°C

 Humidity
 : 33.1%RH

 Atmospheric Pressure
 : 101.3Kbar

EUT Operation:

Input Voltage : DC 3.7V (via built-in Li-ion battery)

Operating Mode.....:

1. Recording mode with LCD display (battery operated only)

2. AV output mode without LCD display (battery operated only)

3. HDMI mode without LCD display (battery operated only)

4. Wireless receiving mode (battery operated only)

signal at the operating frequency of the EUT shall be supplied to the EUT

for all measurements. Such a signal may be supplied by either a signal

generator and an antenna inclose proximity to the EUT or directly

conducted into the antenna terminals of the EUT.

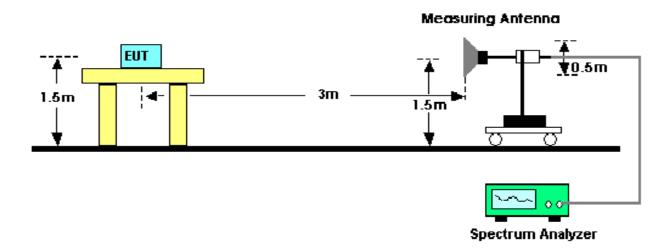
The signal level shall be sufficient to stabilize the local oscillator of the

EUT.

Reference No.: WT12128442-S-S-F Page 20 of 40

5.3.2 Block Diagram of Test Setup

The radiated emission tests were performed in the 3m Semi-Anechoic Chamber test site, using the setup accordance with the Fcc part 15, Subpart B section 109.



5.3.3 Measurement Data

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)

Below 1.705 30 1.705–108 1000 108–500 2000 500–1000 5000

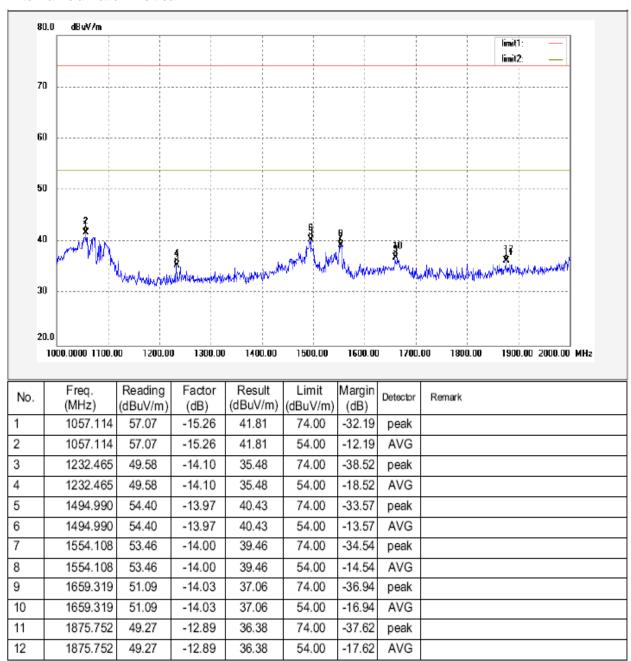
Above 1000

5th harmonic of the highest frequency or 40 GHz, whichever is lower.

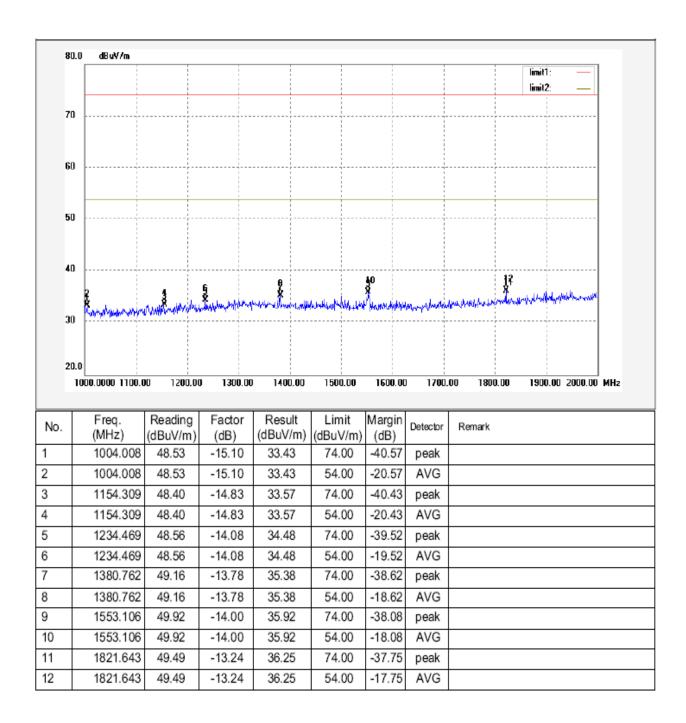
Upper frequency of measurement range (MHz)

5.3.4 Radiation Emission Data above 1GHz

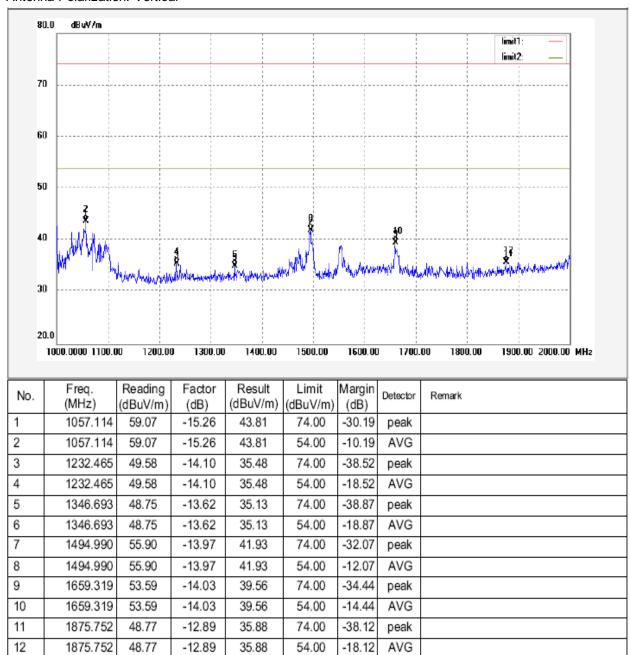
REC Mode(with display):
Antenna Polarization: Vertical



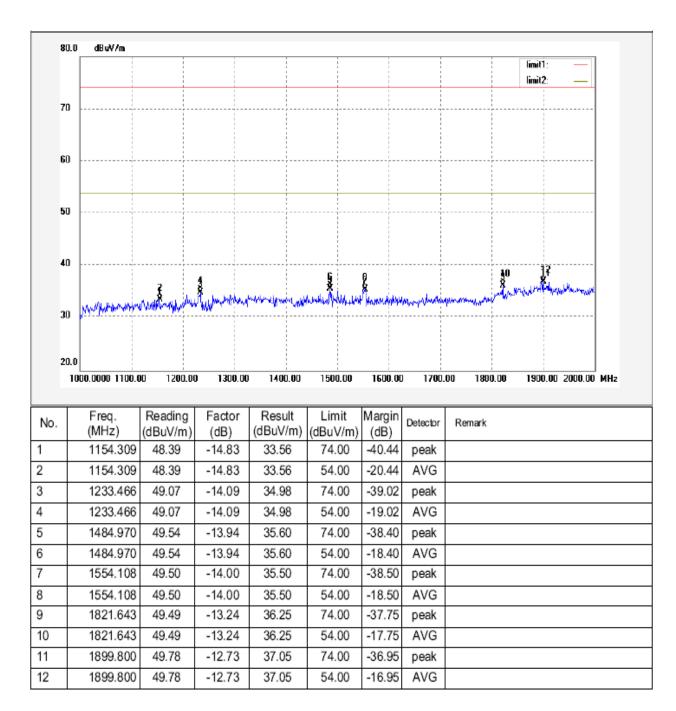
Antenna Polarization: Horizontal



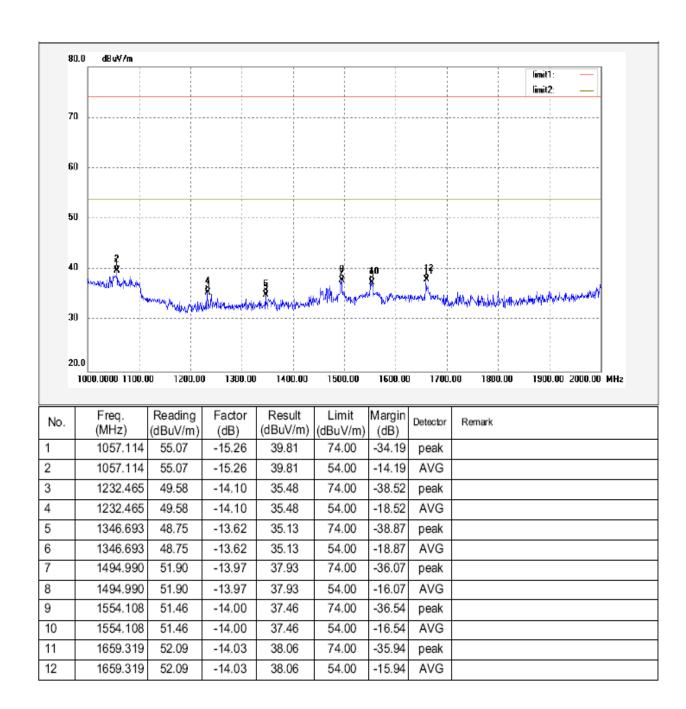
HDMI Mode(without display): Antenna Polarization: Vertical



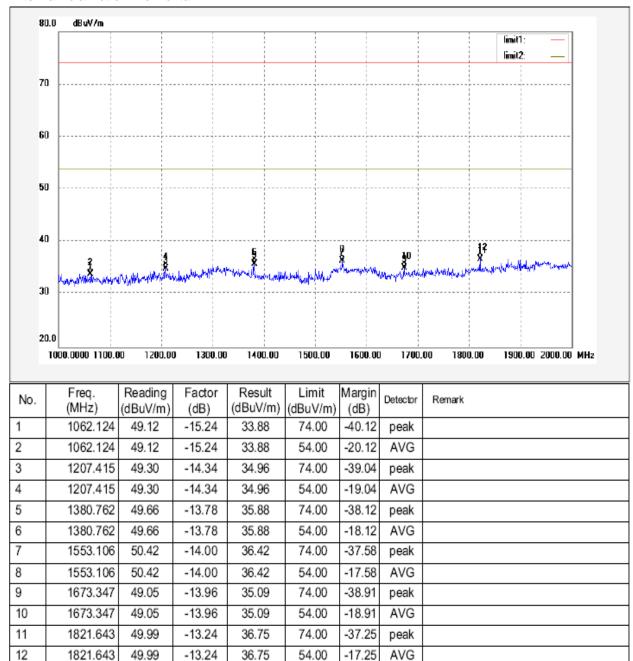
Antenna Polarization: Horizontal



AV Out Mode(without display): Antenna Polarization: Vertical

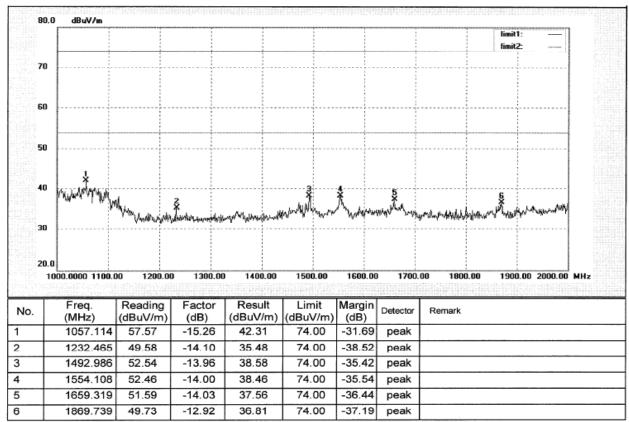


Antenna Polarization: Horizontal

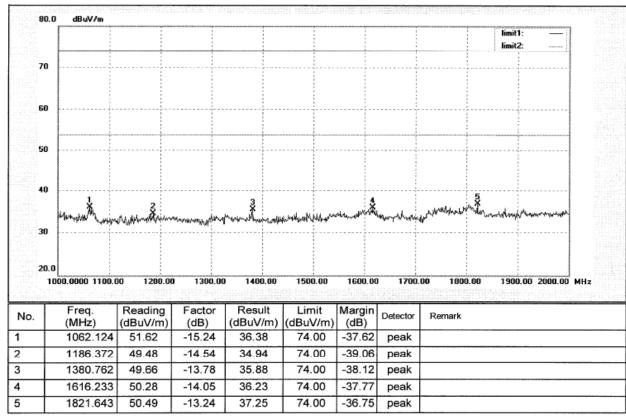


RX Mode:

Antenna Polarization: Vertical



Antenna Polarization: Horizontal



Waltek Services (Shenzhen) Co., Ltd. http://www.waltek.com.cn

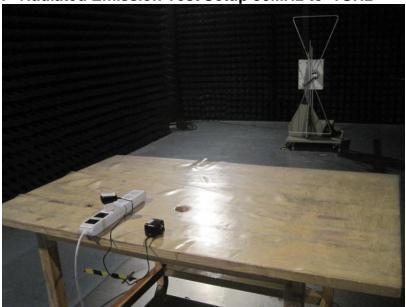
Reference No.: WT12128442-S-S-F Page 28 of 40

6 Photographs - Test Setup

6.1 Photograph - Mains Terminals Disturbance Voltage Test Setup



6.2 Photograph –Radiated Emission Test Setup 30MHz to 1GHz



Reference No.: WT12128442-S-S-F Page 29 of 40

6.3 Photograph –Radiated Emission Test Setup Above 1GHz



7 Photographs – Constructional Details

7.1 EUT - External View







Model No.: SD19





Side View



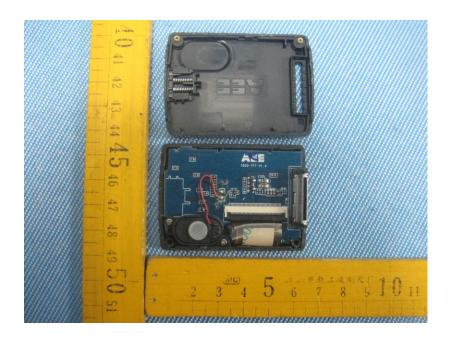


LCD Display

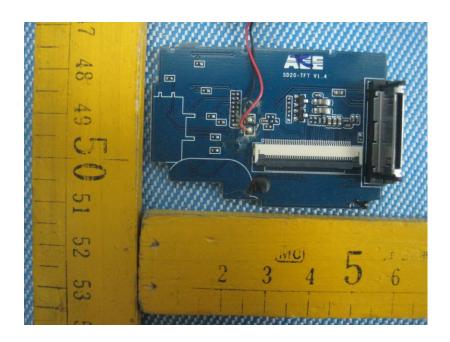




7.2 EUT – Internal View

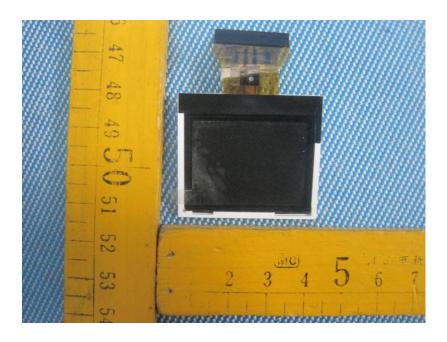


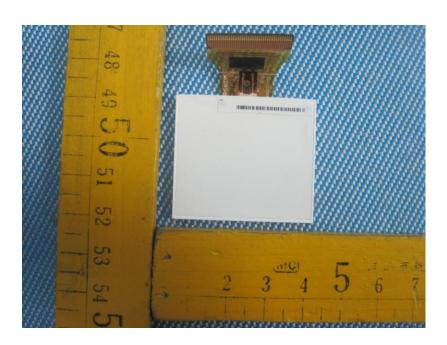
Reference No.: WT12128442-S-S-F Page 35 of 40



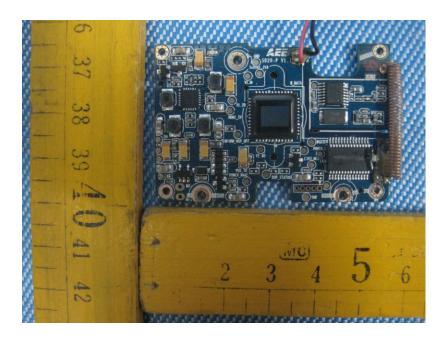


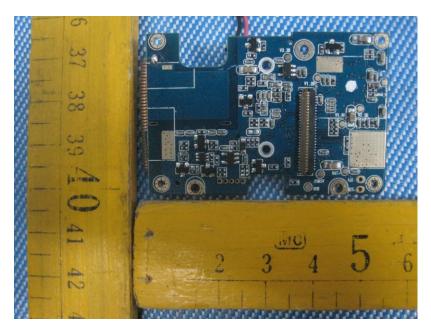
Reference No.: WT12128442-S-S-F Page 36 of 40



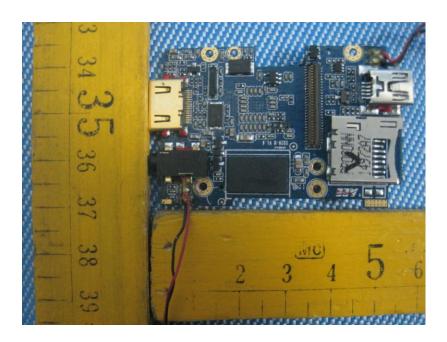


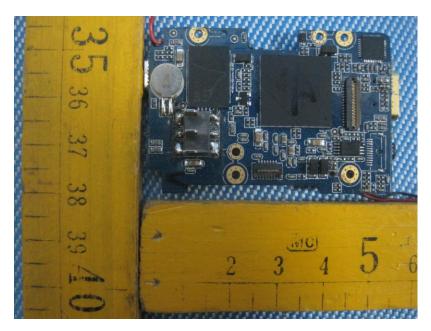
Reference No.: WT12128442-S-S-F Page 37 of 40



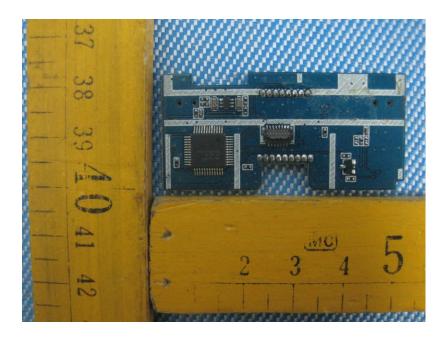


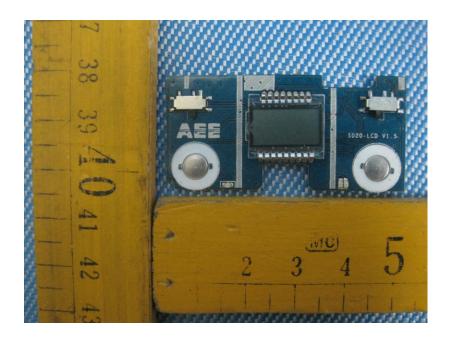
Reference No.: WT12128442-S-S-F Page 38 of 40





Reference No.: WT12128442-S-S-F Page 39 of 40

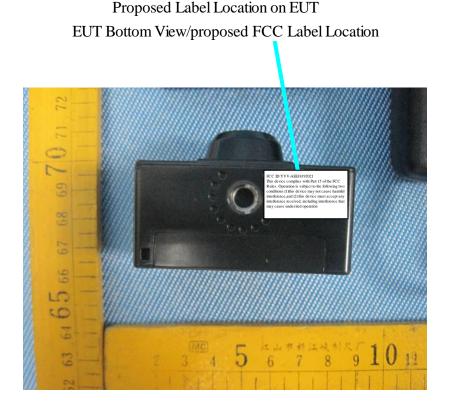




8 FCC ID Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1)this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.



----End of Report-----