



FCC TEST REPORT

Prepared For :	Hopeful Electric CO., LTD
Product Name:	MID
Model :	MID770-RK88-PR, K7, PTAB782, MID770STM-RK88-PR, MID770STM-RK88, MID770-RK88, MID770A-RK88
Prepared By :	Shenzhen BATT Testing Technology Co., Ltd. 11F, Bldg.B, Xinbaoyuan, Xianhu Commercial city, Bao'an District, Shenzhen, Guangdong, China. Tel: 86-755-27753991 Fax: 86-755-27754182
Test Date:	May 05, 2014 to May 12, 2014
Date of Report :	May 13, 2014
Report No.:	BATT201405059-03FCC

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1 TEST CERTIFICATION

Product:	MID
Model:	MID770-RK88-PR, K7, PTAB782, MID770STM-RK88-PR, MID770STM-RK88, MID770-RK88, MID770A-RK88
Applicant:	Hopeful Electric CO., LTD 22 Floor, Changhong Building, Hi-Tech Park, Nanshan District, Shenzhen City, P.R.China
Factory:	Hopeful Elecrtic CO., LTD / Guangdong Changhong Digital Technology Co., LTD 148, Ronggui Road (Mid), Ronggui Town, Shunde District, Foshan City, Guangdong Prov., China / Via Gramsci 19, 20881 Bernareggio (MB), Italy/ 1,Xingye Road (North), Nantou Town, Zhongshan City, Guangdong Prov.
Trade Mark:	N/A
Tested:	May 05, 2014 to May 12, 2014
Test Voltage:	DC5V Powered by power supply
Power Supply:	Model No.: HP0520D2-NA Input:100-240V, 0.3A, 50/60Hz; Output: +5V, 1.5A Max
FCC ID:	2AAQZMID770-RK88T
Applicable Standards:	FCC Part 15 Subpart B: 2012

The test report was prepared by Shenzhen BATT Testing Technology Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Prepared by :

Hellen Xiao

Hellen Xiao/Assistant

Reviewer :

Mike Yong

Mike Yong/Supervisor

Approved & Authorized Signer :

Jones Song

Jones Song/ Manager



2.0 List of Measurement Equipment

2.1 Conducted Emission Test

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
EMI Test Receiver	ESU	1302.6005.26	RS	2013-08-27	1Year
Spectrum Analyzer	ESA-L1500A	US37451154	HP	2013-08-23	1Year
PULSE LIMITER	ESH3-Z2	100281	RS	2013-08-27	1Year
LISN	ESH3-Z5	100294	RS	2013-08-27	1Year

2.2 Radiated electromagnetic disturbance test

Name	Model No.	Serial No.	Manufacturer	Calibration Date	Calibration Cycle
EMI Test Receiver	ESI26	838786/01 3	RS	2013-08-27	1Year
Amplifier	A.H.	PAM-0126	1415261	2013-07-25	1Year
Bilog Antenna	VULB9163	9163/142	Schwarebeck	2013-12-13	1Year
Horn Antenna	BBHA 9120D	D143	Schwarebeck	2013-09-15	1Year

2.3 Auxiliary Equipment

Name	Model No.	Serial No.	Manufacturer	Cable	FCC DOC/ ID
Monitor	P2450	--	SAMSUNG	Data cable of 1.5m length	FCC DOC
PC	E43L	--	Lenovo	--	FCC DOC
U-disk	U208	--	Netac	--	FCC DOC
SD	--	--	Kingston	--	FCC DOC
PC	R400	--	IBM	--	FCC DOC
Mouse	M-F105	--	L.SEletron	--	FCC DOC
Keyboard	KB-0225	--	IBM	--	FCC DOC
Printer	J1015	--	HP	--	FCC DOC



3.0 Technical Details

3.1 Investigations Requested

Perform Electromagnetic Interference [EMI] tests for FCC Requirement.

3.2 Test Standards

FCC Part 15 Subpart B: 2012

4.0 Test LAB Details

All Tests Performed at

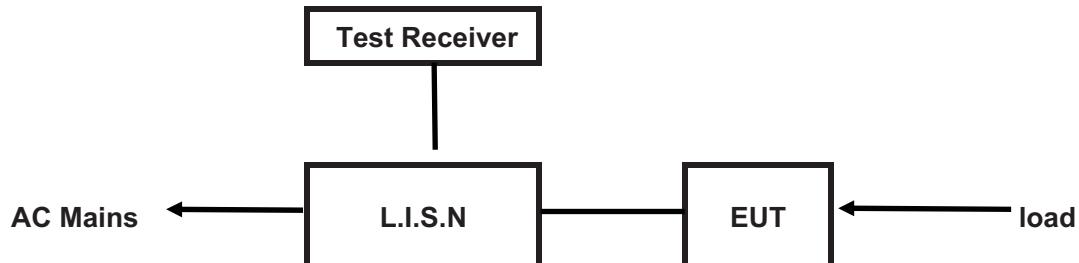
Name: Shenzhen Emtek Co., Ltd.

Address: Bldg. 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, 518052 China

FCC Registration Number: 406365

5. Power Line Conducted Emission Test

5.1 Schematics of the test



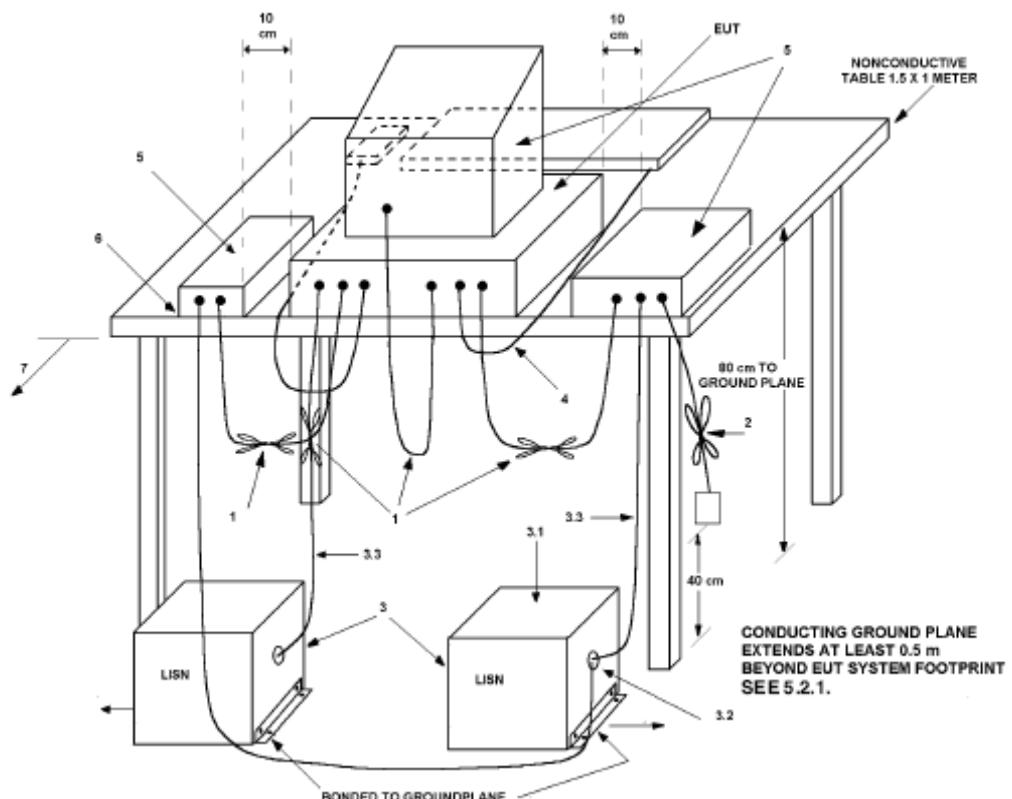
EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2003. Cables and peripherals were moved to find the maximum emission levels for each frequency.

Actual Working Voltage and Frequency: 120V~, 60Hz

Block diagram of Test setup





5.3 Power line conducted Emission Limit

Frequency(MHz)	Class A Limits dB(µV)		Class B Limits dB(µV)	
	Quasi-peak Level	Average Level	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.00	66.00	66.00~56.00*	56.00~46.00*
0.50 ~ 5.00	73.00	60.00	56.00	46.00
5.00 ~ 30.00	73.00	60.00	60.00	50.00

Notes: 1. *decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

5.4 Test Results

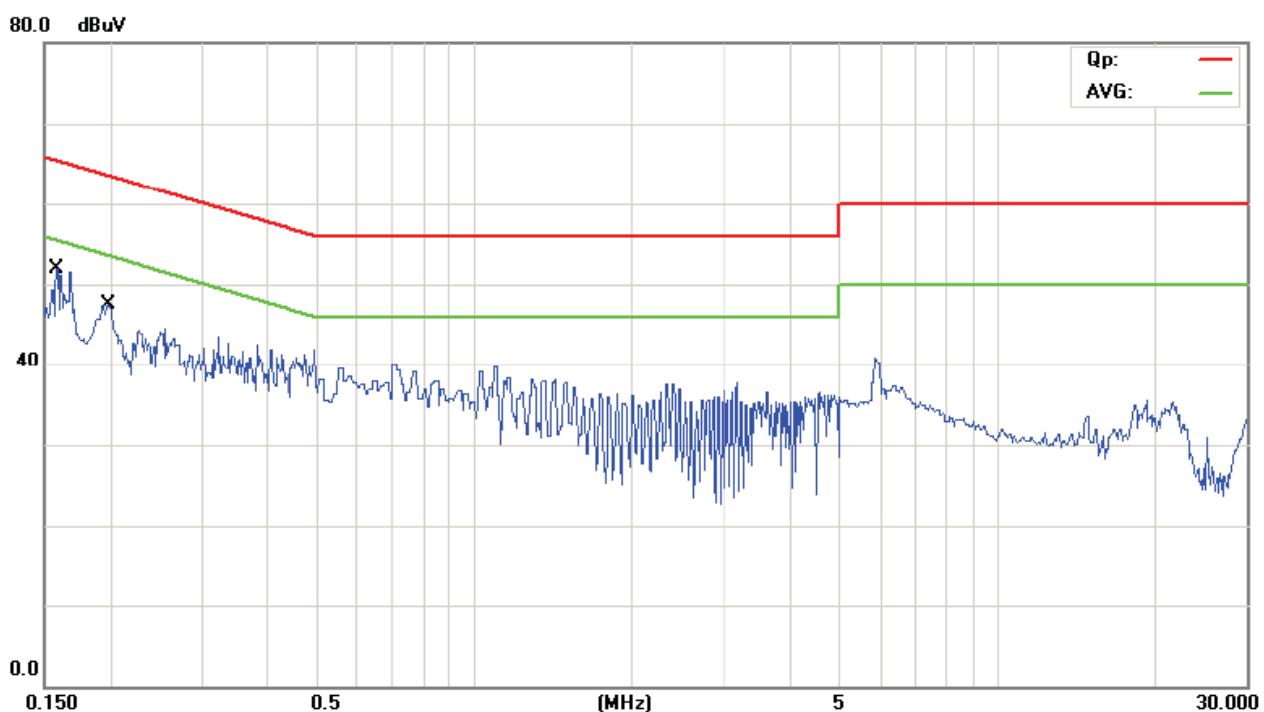
The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

**A: Conducted Emission on Live Terminal (150kHz to 30MHz)****EUT Operating Environment**

Temperature: 25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Communicate with PC**Equipment Level: Class B****Results: Pass**

Please refer to following diagram for individual



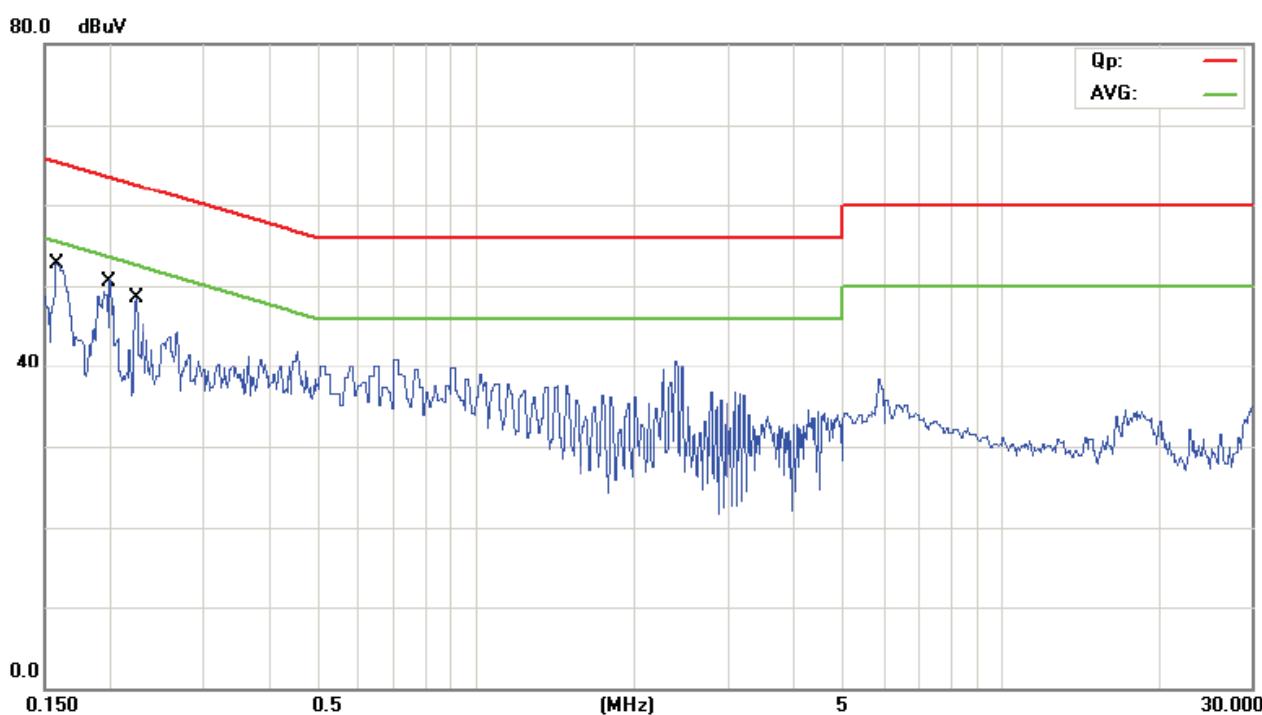
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dB	Over Detector
1	*	0.1587	38.99	11.01	50.00	65.53	-15.53
2		0.1587	16.47	11.01	27.48	55.53	-28.05
3		0.1972	34.01	11.05	45.06	63.73	-18.67
4		0.1972	15.32	11.05	26.37	53.73	-27.36

**B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)****EUT Operating Environment**

Temperature: 25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Communicate with PC**Equipment Level: Class B****Results: Pass**

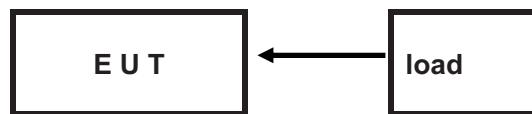
Please refer to following diagram for individual



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Detector
			Level	Factor	ment			
		MHz	dBuV	dB	dBuV	dBuV	dB	
1	*	0.1580	38.64	11.01	49.65	65.57	-15.92	QP
2		0.1580	18.37	11.01	29.38	55.57	-26.19	AVG
3		0.1990	36.55	11.05	47.60	63.65	-16.05	QP
4		0.1990	15.79	11.05	26.84	53.65	-26.81	AVG
5		0.2226	35.38	11.08	46.46	62.72	-16.26	QP
6		0.2226	17.43	11.08	28.51	52.72	-24.21	AVG

6 Radiated Emission Test

6.1 Schematics of the test

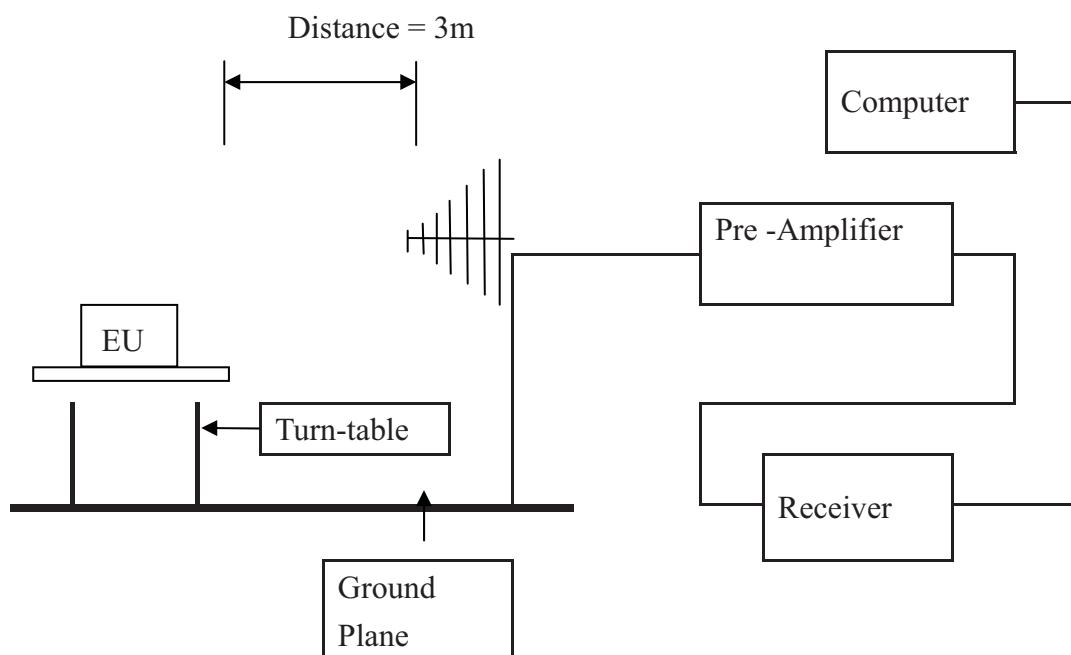


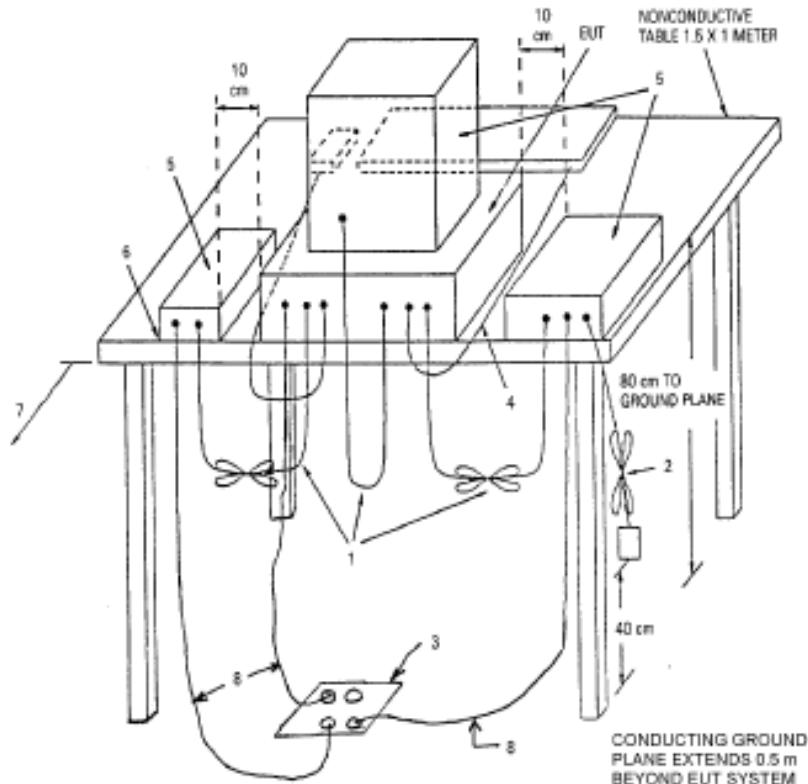
6.2 Test Method and test Procedure:

The EUT was tested according to ANSI C63.4 –2003. The frequency spectrum from 30MHz to 5GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120kHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK

Actual Working Voltage and Frequency: 120V~, 60Hz

Block diagram of Test setup





6.3 Radiated Emission Limit

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.00
88-216	3	43.50
216-960	3	46.00
Above 960	3	54.00

Note: 1. The lower limit shall apply at the transition frequencies

2. This is a handheld device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand). After pre-test. It was found that the worse radiated emission was get at the lying position.

6.4 Test result

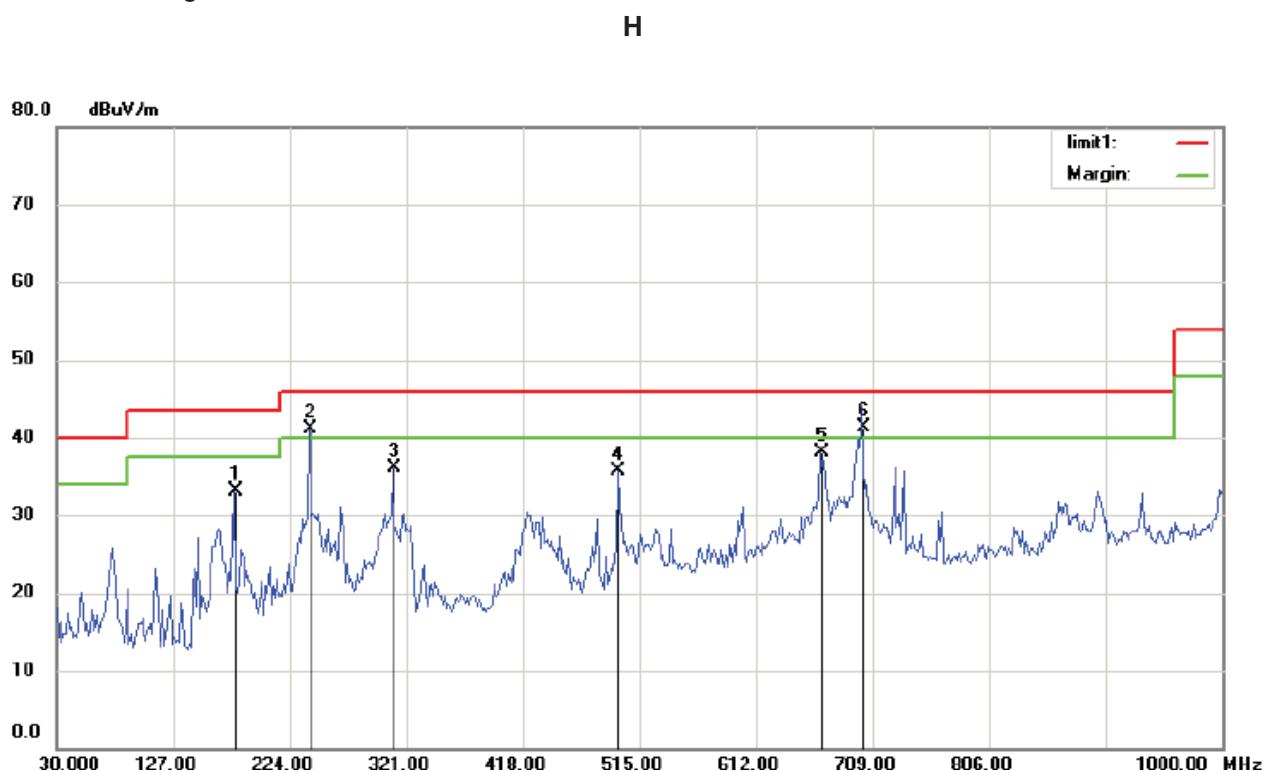
The frequency spectrum from 30MHz to 6GHz was investigated. All reading from 30MHz to 1GHz are quasi-peak values with a resolution bandwidth of 120KHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK. Measurements were made at 3 meters. For Radiated above 1GHz, Only the worse case was recorded.

**Test result****General Radiated Emission Data and Harmonics Radiated Emission Data****Radiated Emission In Horizontal/ In Vertical (30MHz----1000MHz)**

EUT set Condition: Communicate with PC

Results: **Pass**

Test Figure:



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table		
			Level	Factor	ment						
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		177.6763	20.94	12.12	33.06	43.50	-10.44	QP			
2	!	239.8558	26.03	15.00	41.03	46.00	-4.97	QP			
3		309.8077	19.65	16.44	36.09	46.00	-9.91	QP			
4		497.9006	15.03	20.65	35.68	46.00	-10.32	QP			
5		665.7853	13.61	24.42	38.03	46.00	-7.97	QP			
6	*	699.9840	17.10	24.24	41.34	46.00	-4.66	QP			

Test Figure:

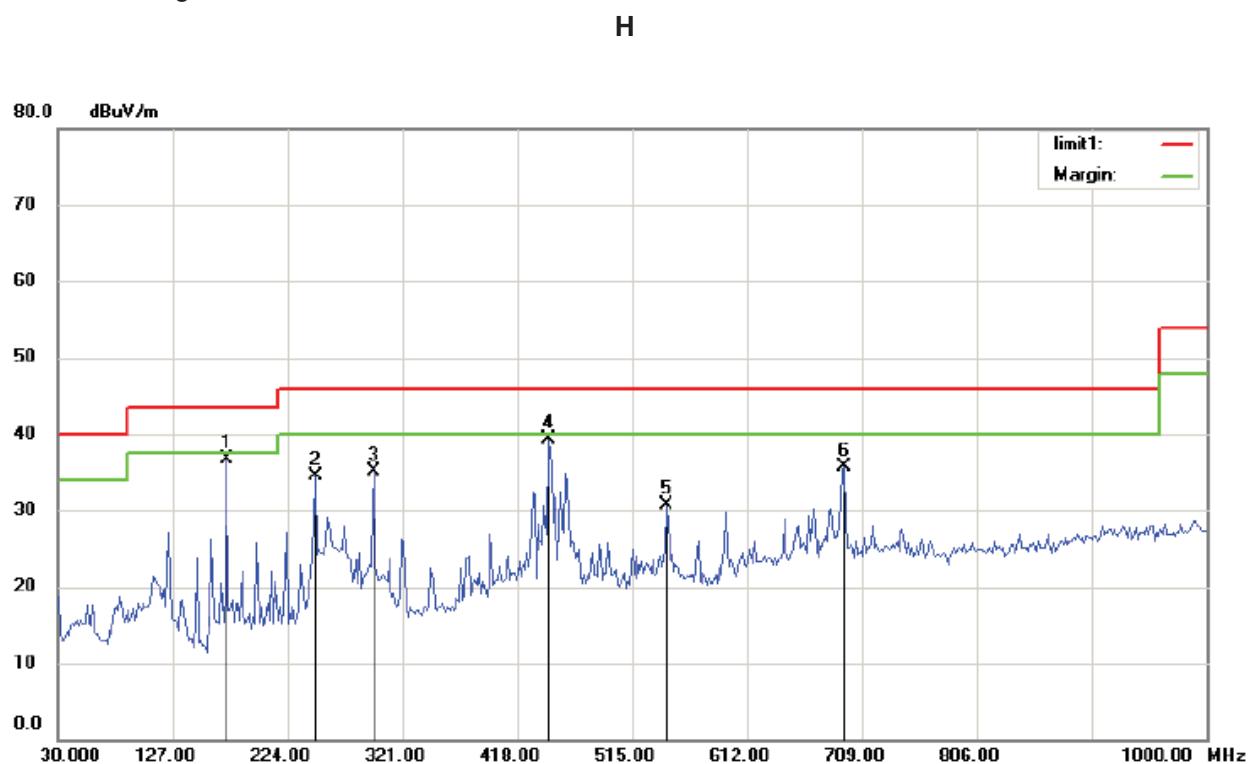
V



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table		
			Level	Factor	ment						
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		173.0128	20.55	11.77	32.32	43.50	-11.18	QP			
2		239.8557	20.11	15.01	35.12	46.00	-10.88	QP			
3		347.1153	17.92	17.94	35.86	46.00	-10.14	QP			
4	*	445.0480	21.10	19.94	41.04	46.00	-4.96	QP			
5		600.4966	9.64	22.60	32.24	46.00	-13.76	QP			
6		693.7660	13.29	24.44	37.73	46.00	-8.27	QP			

**Test result****General Radiated Emission Data and Harmonics Radiated Emission Data****Radiated Emission In Horizontal/ In Vertical (30MHz----1000MHz)**EUT set Condition: **Play SD Card****Results:** **Pass**

Test Figure:



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table		
			Level	Factor	ment						
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		173.0126	24.92	11.77	36.69	43.50	-6.81	QP			
2		247.6280	19.69	14.89	34.58	46.00	-11.42	QP			
3		297.3716	18.80	16.23	35.03	46.00	-10.97	QP			
4	*	445.0480	19.35	19.99	39.34	46.00	-6.66	QP			
5		544.5352	9.07	21.60	30.67	46.00	-15.33	QP			
6		693.7660	11.17	24.46	35.63	46.00	-10.37	QP			



Test Figure:

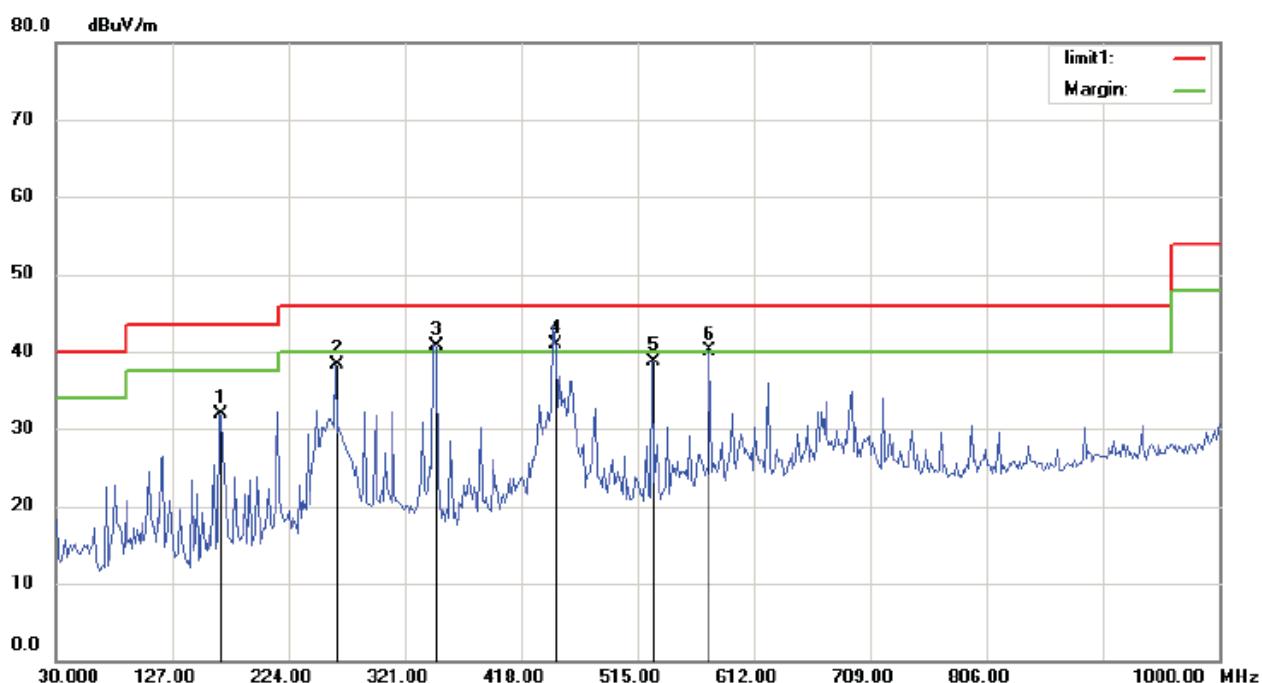
V



No.	Mk.	Freq. MHz	Reading	Correct	Measure-	Limit	Over	Antenna Height cm	Table Degree	Comment
			Level dBuV	Factor dB	ment dBuV/m					
1		173.0127	22.04	11.77	33.81	43.50	-9.69	QP		
2		297.3716	11.26	16.22	27.48	46.00	-18.52	QP		
3	*	445.0481	20.20	19.94	40.14	46.00	-5.86	QP		
4		459.0384	18.03	19.66	37.69	46.00	-8.31	QP		
5		693.7660	12.61	24.44	37.05	46.00	-8.95	QP		
6		891.1857	9.45	25.70	35.15	46.00	-10.85	QP		

**Test result****General Radiated Emission Data and Harmonics Radiated Emission Data****Radiated Emission In Horizontal/ In Vertical (30MHz----1000MHz)**EUT set Condition: **Camera on****Results:** **Pass**

Test Figure:

H

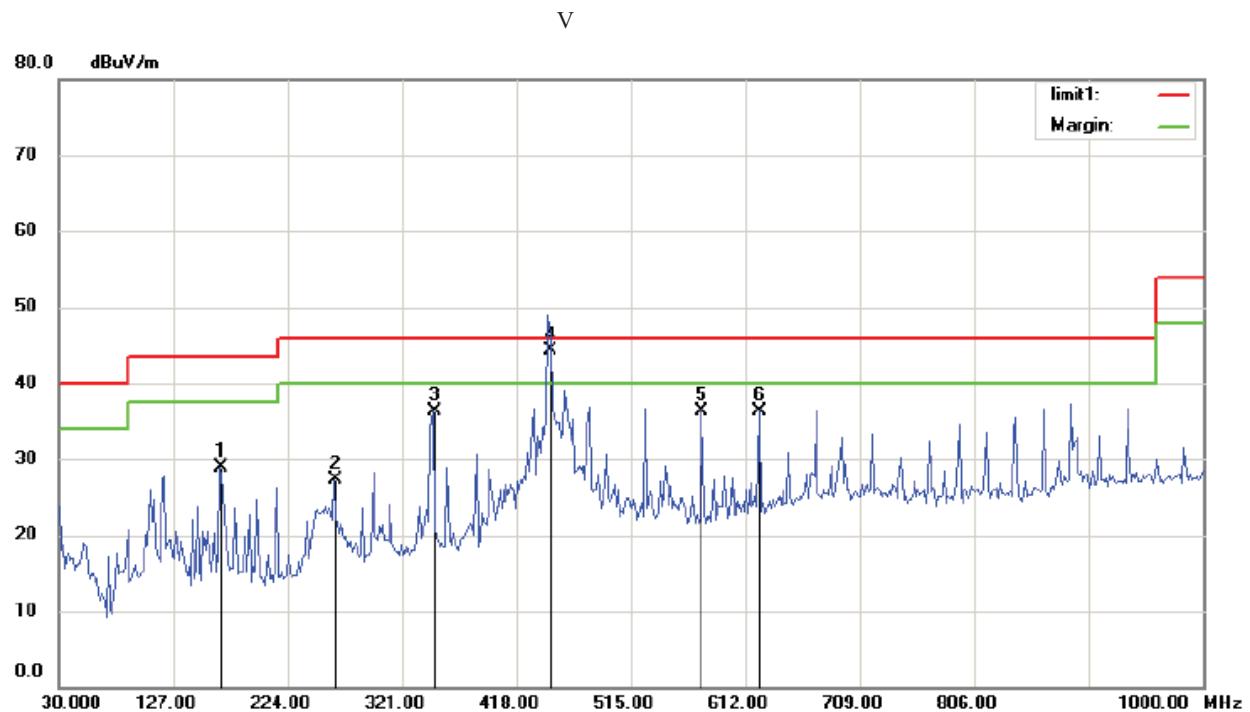
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table		
			Level	Factor	ment				Height	Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		166.7950	20.52	11.43	31.95	43.50	-11.55	QP			
2		263.1731	23.16	15.16	38.32	46.00	-7.68	QP			
3	!	345.5610	22.84	17.85	40.69	46.00	-5.31	QP			
4	*	445.0481	21.00	19.99	40.99	46.00	-5.01	QP			
5		527.4360	17.46	21.17	38.63	46.00	-7.37	QP			
6	!	575.6250	18.50	21.53	40.03	46.00	-5.97	QP			



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Test Figure:



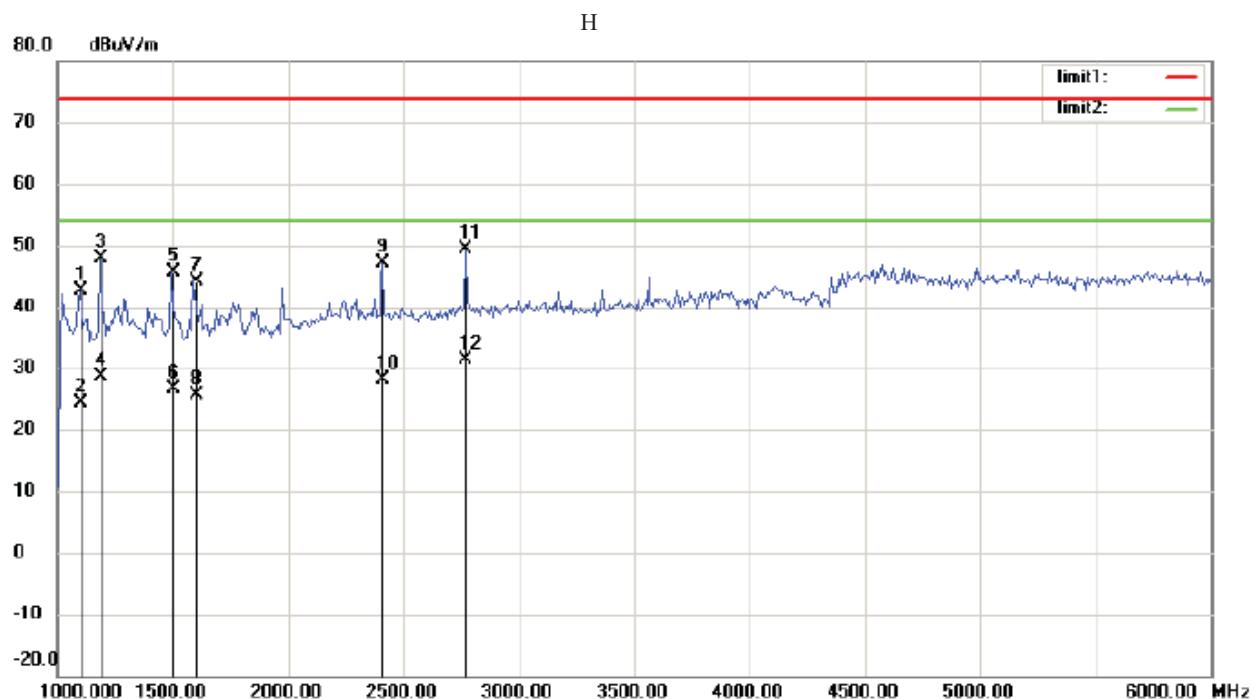
No.	Mk.	Freq. MHz	Reading	Correct	Measure-	Limit	Over	Antenna Height cm	Table Degree	Comment
			Level dBuV	Factor dB	ment dBuV/m					
1		166.7950	17.43	11.42	28.85	43.50	-14.65	QP		
2		263.1731	12.24	15.15	27.39	46.00	-18.61	QP		
3		347.1154	18.33	17.94	36.27	46.00	-9.73	QP		
4	*	445.0481	24.30	19.94	44.24	46.00	-1.76	QP		
5		575.6250	14.96	21.43	36.39	46.00	-9.61	QP		
6		623.8141	13.37	22.94	36.31	46.00	-9.69	QP		

**Radiated Disturbance (1000MHz----6000MHz)****EUT Operating Environment**

Temperature: 25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Communicate with PC**Equipment Level: Class B****Results: Pass**

Please refer to following diagram for individual



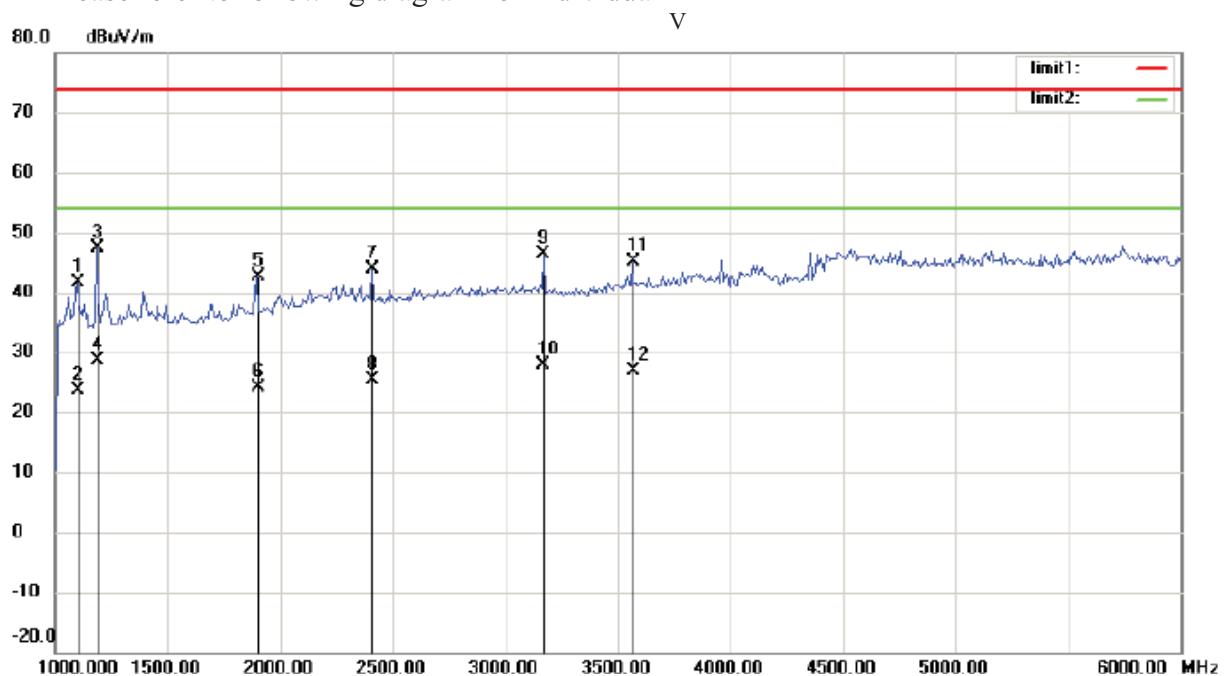
No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table		
			Level	Factor	ment						
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		1096.154	55.72	-13.19	42.53	74.00	-31.47	peak			
2		1096.154	37.50	-13.19	24.31	54.00	-29.69	AVG			
3		1184.295	60.36	-12.50	47.86	74.00	-26.14	peak			
4		1184.295	41.10	-12.50	28.60	54.00	-25.40	AVG			
5		1496.795	57.66	-11.93	45.73	74.00	-28.27	peak			
6		1496.795	38.50	-11.93	26.57	54.00	-27.43	AVG			
7		1592.949	56.18	-12.09	44.09	74.00	-29.91	peak			
8		1592.949	37.70	-12.09	25.61	54.00	-28.39	AVG			
9		2410.256	55.84	-8.71	47.13	74.00	-26.87	peak			
10		2410.256	36.90	-8.71	28.19	54.00	-25.81	AVG			
11		2770.833	57.03	-7.63	49.40	74.00	-24.60	peak			
12	*	2770.833	39.00	-7.63	31.37	54.00	-22.63	AVG			

**Radiated Disturbance (1000MHz----6000MHz)****EUT Operating Environment**

Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Communicate with PC**Equipment Level: Class B****Results: Pass**

Please refer to following diagram for individual



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table		
			Level	Factor	ment						
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		1096.154	54.88	-13.20	41.68	74.00	-32.32	peak			
2		1096.154	36.90	-13.20	23.70	54.00	-30.30	AVG			
3		1184.295	59.78	-12.49	47.29	74.00	-26.71	peak			
4	*	1184.295	41.10	-12.49	28.61	54.00	-25.39	AVG			
5		1897.436	53.61	-11.03	42.58	74.00	-31.42	peak			
6		1897.436	35.20	-11.03	24.17	54.00	-29.83	AVG			
7		2410.256	52.67	-8.70	43.97	74.00	-30.03	peak			
8		2410.256	34.10	-8.70	25.40	54.00	-28.60	AVG			
9		3171.474	53.50	-7.09	46.41	74.00	-27.59	peak			
10		3171.474	35.00	-7.09	27.91	54.00	-26.09	AVG			
11		3564.103	51.90	-6.65	45.25	74.00	-28.75	peak			
12		3564.103	33.60	-6.65	26.95	54.00	-27.05	AVG			



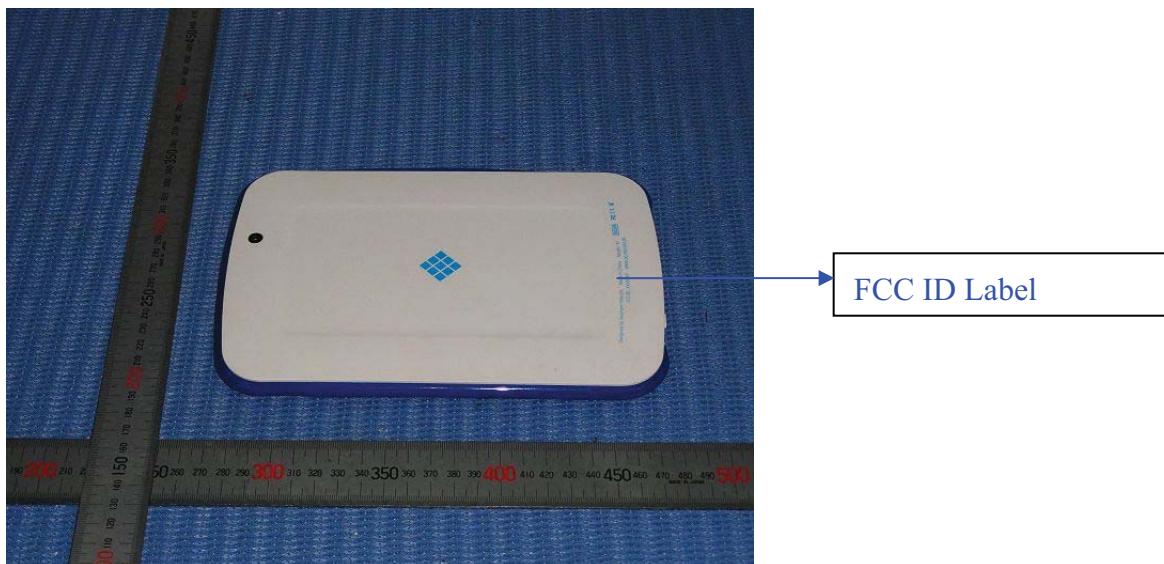
7.0 FCC ID Label

FCC ID: 2AAQZMID770-RK88T

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 label. 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.

Mark Location:



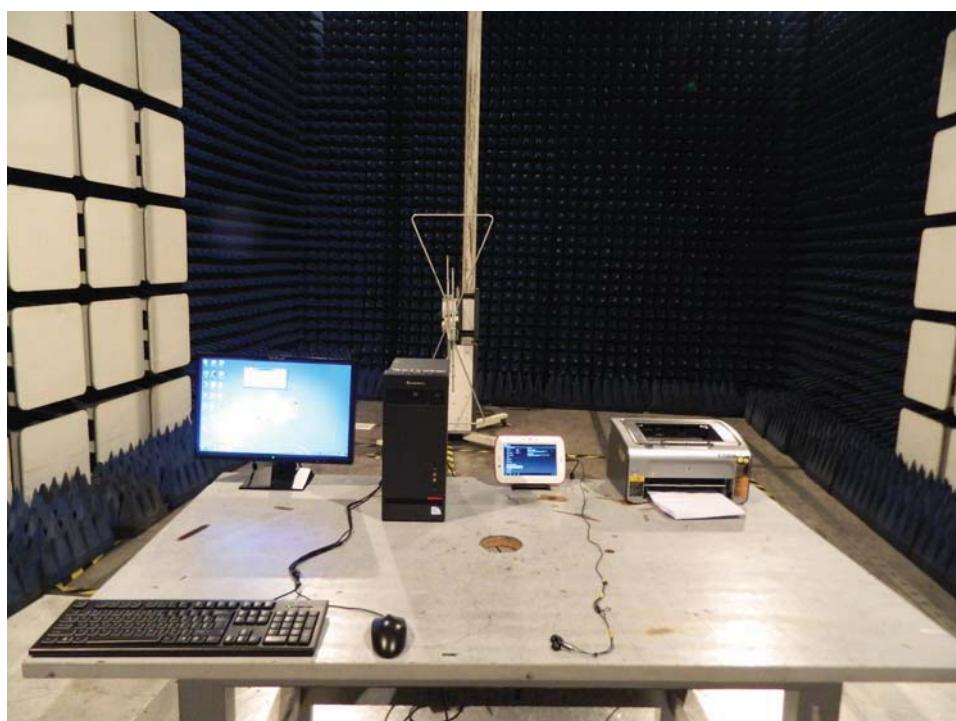


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8 PHOTOGRAPHS OF THE TEST CONFIGURATION

Radiated Emissions



PHOTOGRAPHS OF EUT



Photo 1



Photo 2

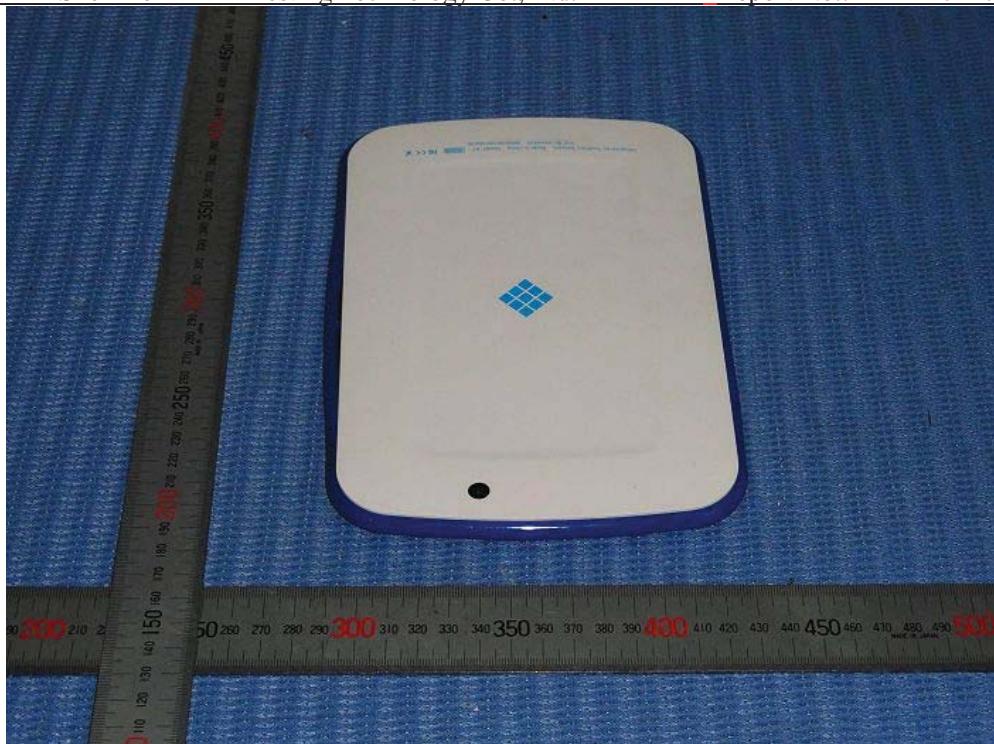


Photo 3



Photo 4



Photo 5

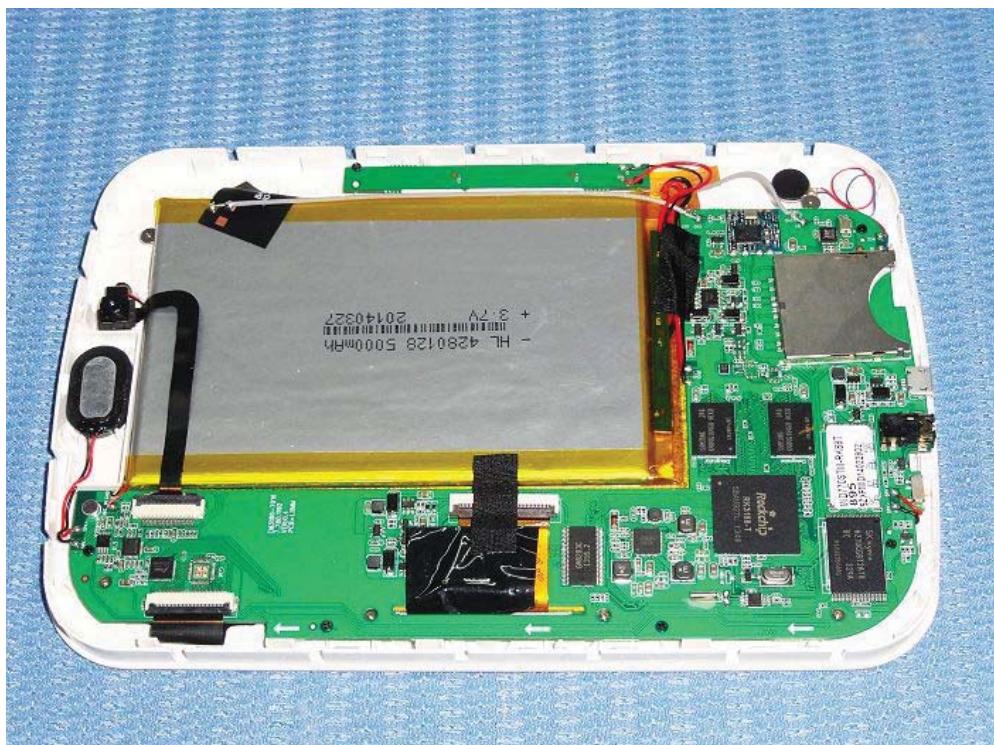


Photo 6

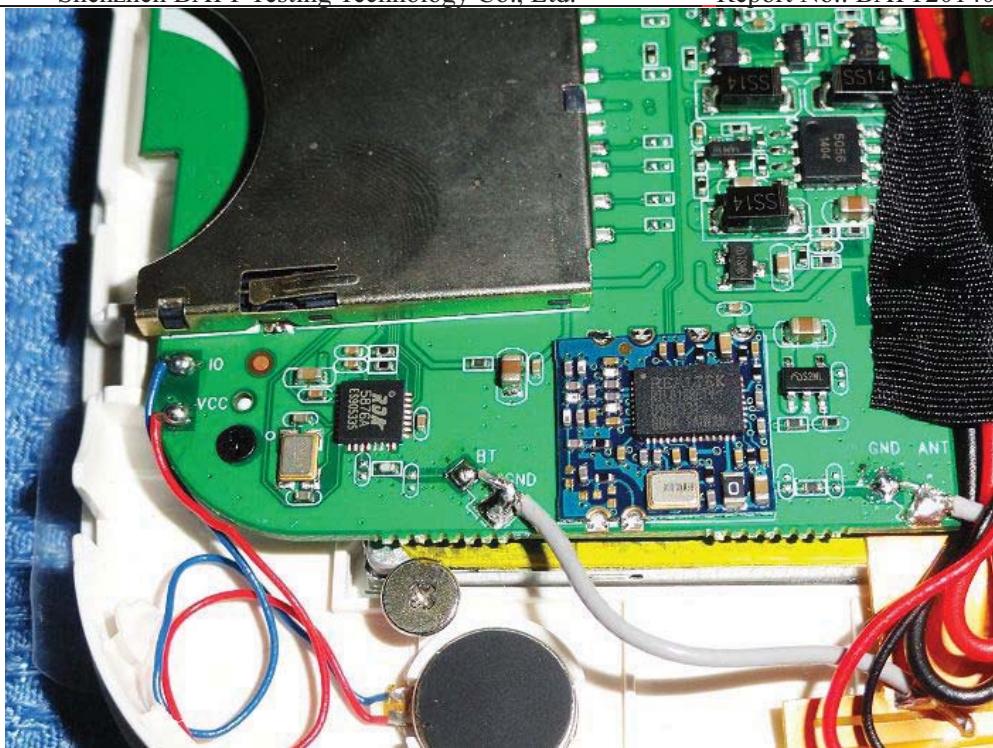


Photo 7

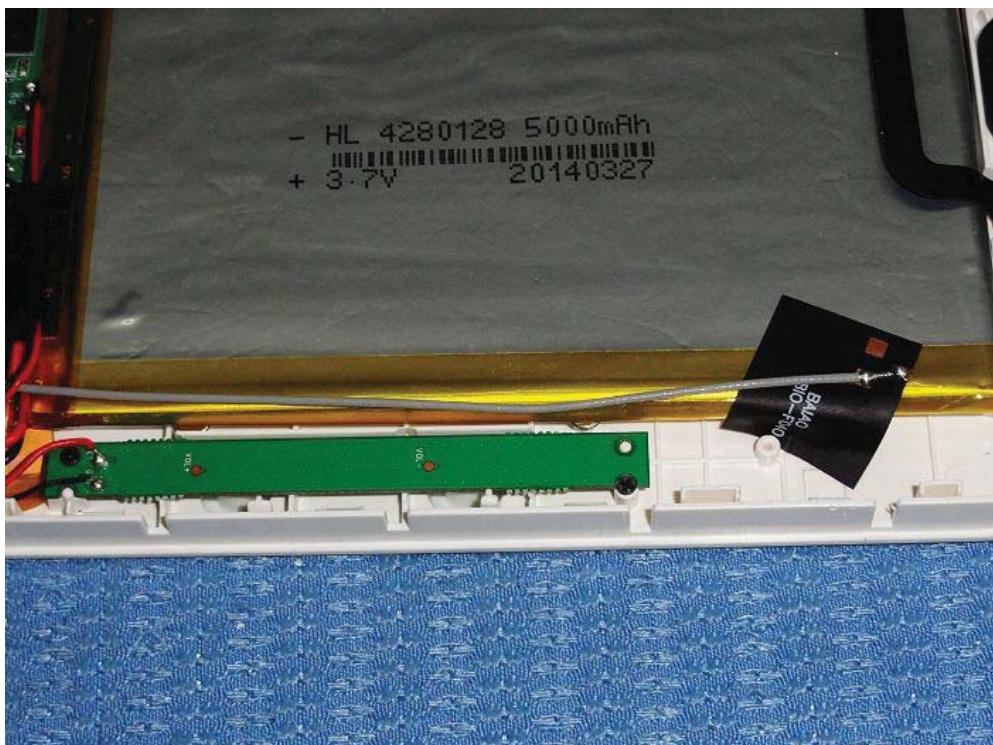


Photo 8

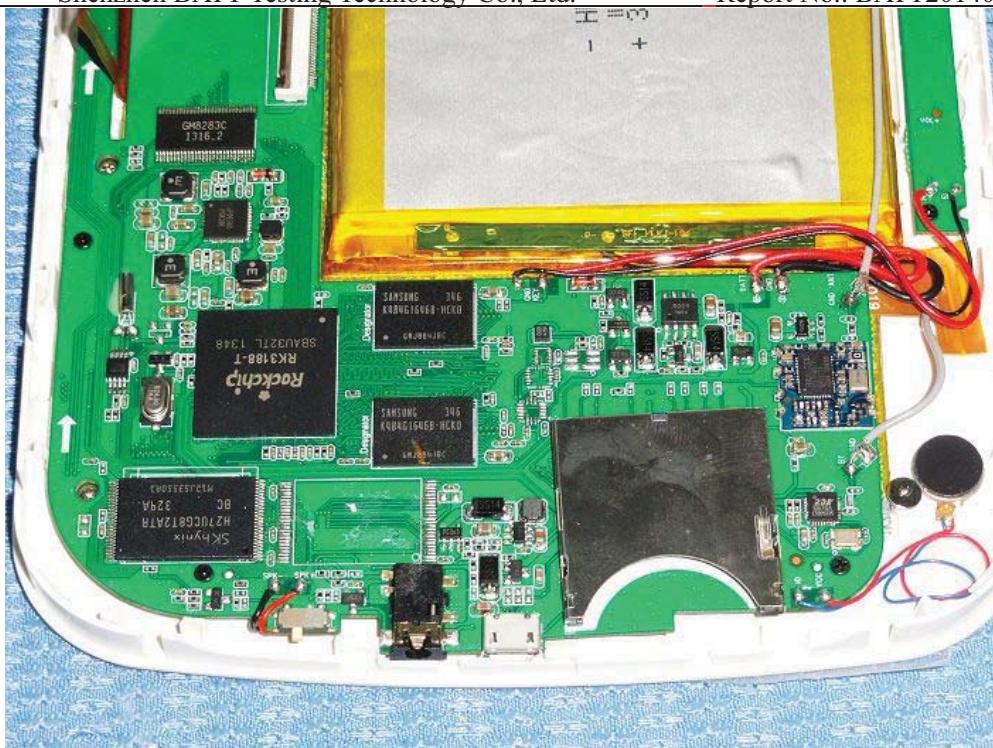


Photo 9

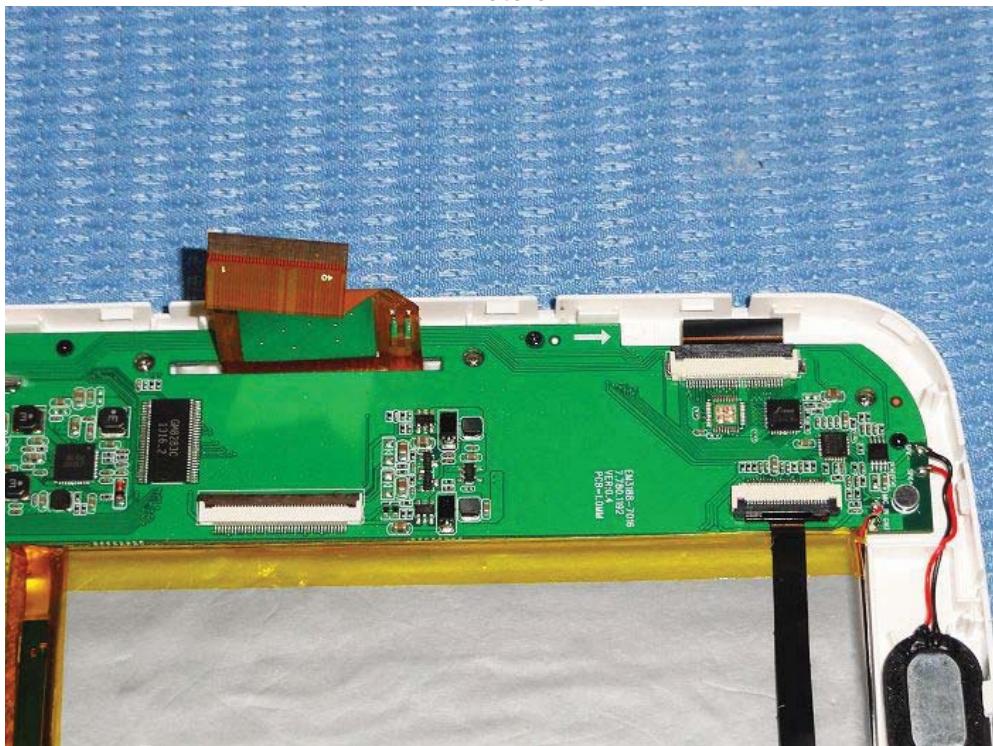


Photo 10

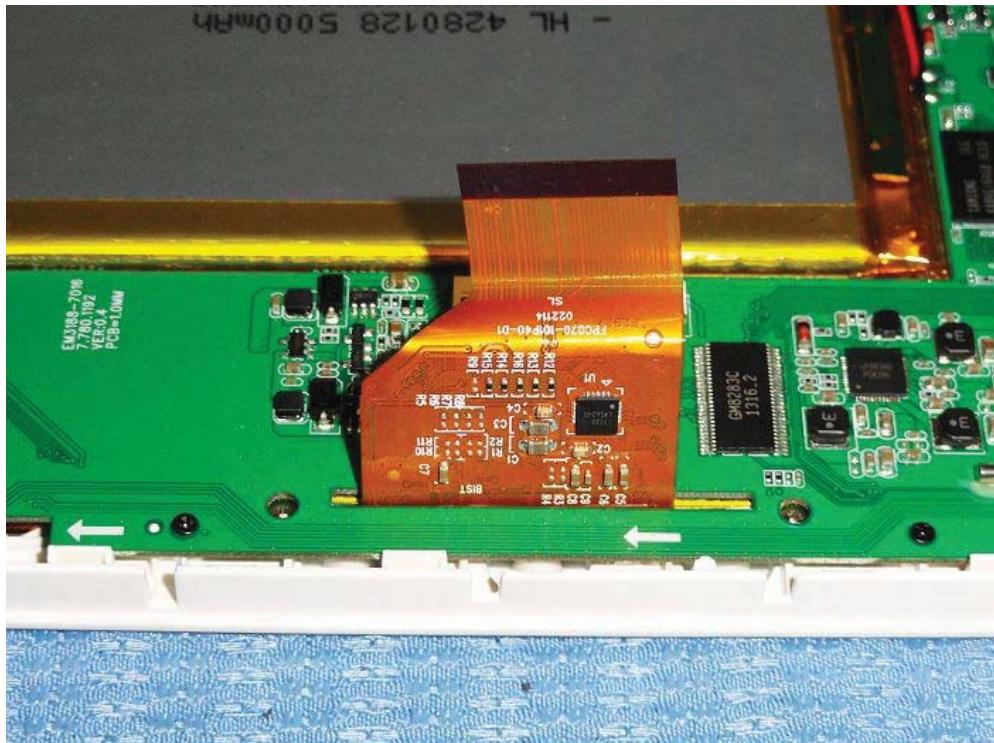


Photo 11



Photo 12

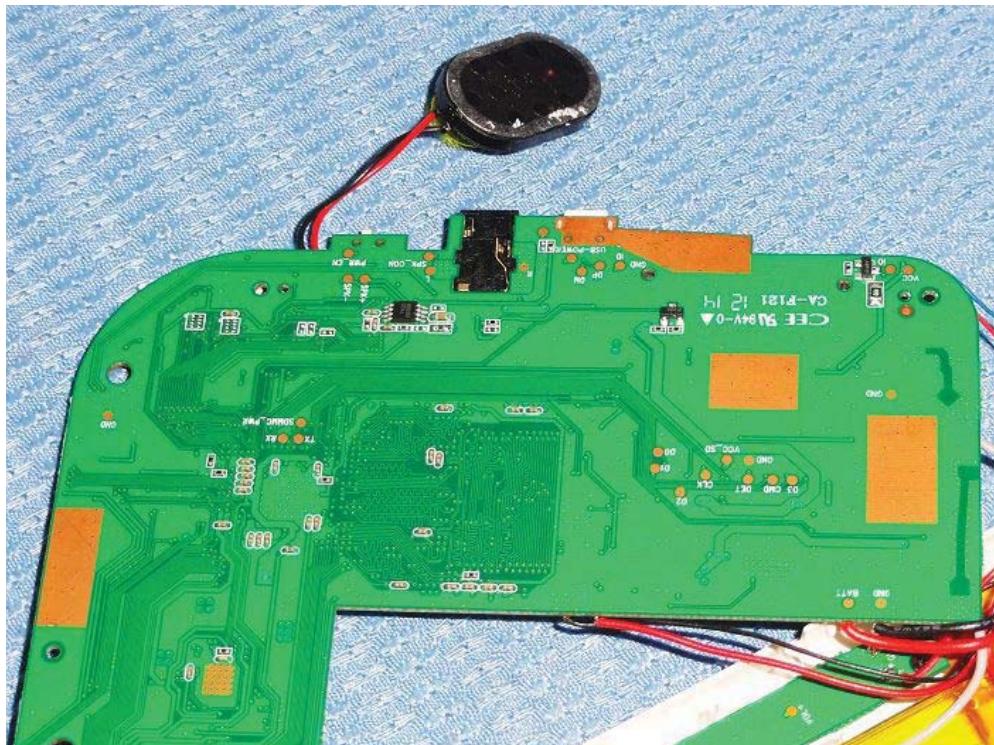


Photo 13

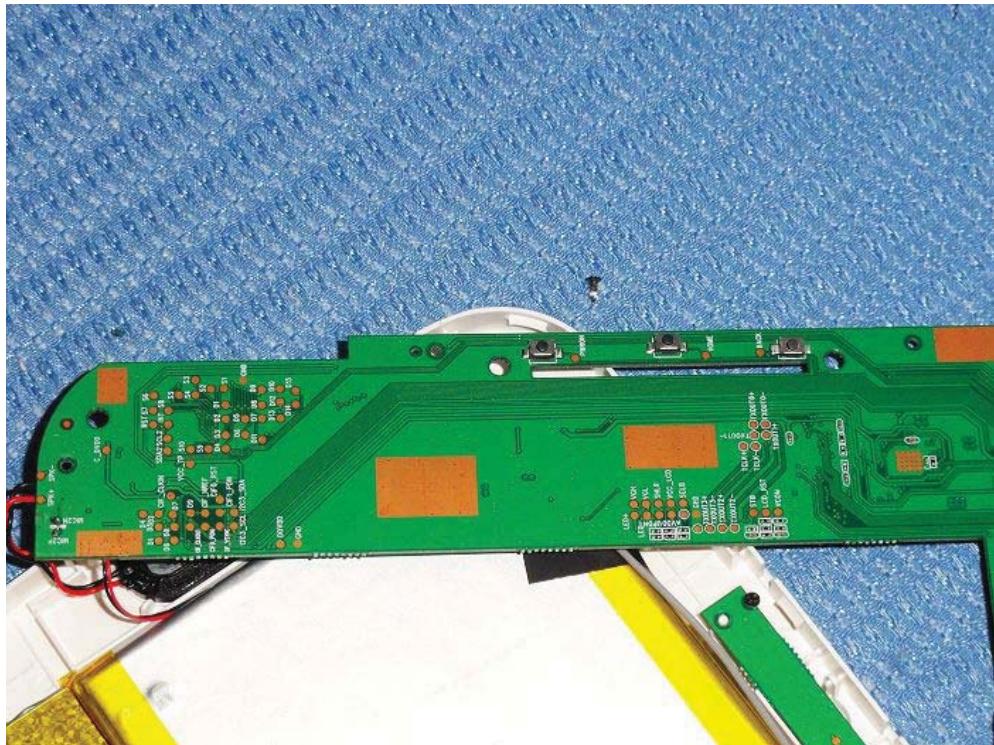


Photo 14

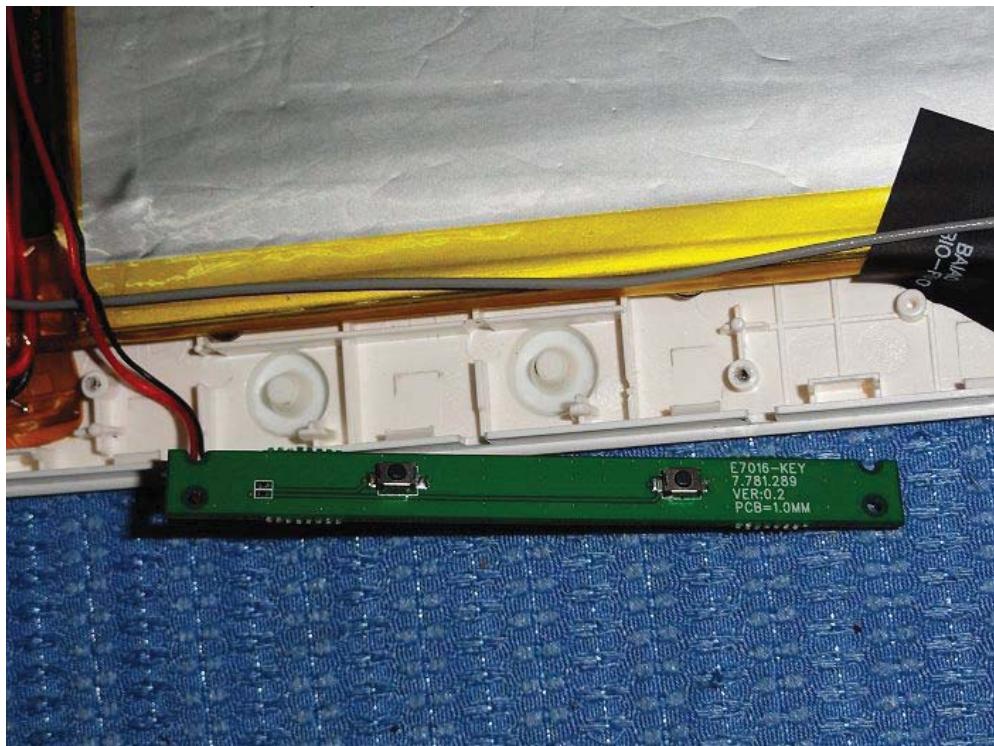


Photo 15



Photo 16



Photo 17



Photo 18(Alternative Battery)

The Report End