FCC TEST REPORT

Product Name	:	USB Fingerprint Dongle
Trade Name	:	N/A
Model Name	:	FP1031
Serial Number	:	N/A
FCC ID	:	ZWQFP1031
Technical Data	:	DC 5V
Report Number	:	EESZD08110004-1
Date	:	Aug. 16, 2011
Regulations	:	See below

Test Standards	Results
☒ FCC Part 15 Subpart B: 2010	PASS

Prepared for:

He Shan World Fair Electronics Technology Limited
New Material Base, Gonghe Town, Heshan City, Jiangmen P.R.C.

Prepared by:

CENTRE TESTING INTERNATIONAL (SHENZHEN) CORPORATION
Building C, Hongwei Industrial Zone, Baoan 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Check No.: 47221824

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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant:	He Shan World Fair Electronics Technology Limited New Material Base, Gonghe Town, Heshan City, Jiangmen P.R.C.
Manufacturer:	He Shan World Fair Electronics Technology Limited New Material Base, Gonghe Town, Heshan City, Jiangmen P.R.C.
Equipment Authorization:	Certification
Product Name:	USB Fingerprint Dongle
Trade Name:	N/A
Model Name:	FP1031
FCC ID:	ZWQFP1031
Serial Number:	N/A
Report Number:	EESZD08110004-1
Date of Test:	Aug. 12, 2011 to Aug. 16, 2011

The test results of this report relate only to the tested sample identified in this report.

Prepared by : Christy Chen

Reviewed by : Louisa Lu

Approved by : Jimmy Li
Manager

Date Aug. 16, 2011

2. TEST SUMMARY

The EUT has been tested according to the following specifications:

Standard	Test Item	Test
FCC 15.107	Conducted Emission	Yes
FCC 15.109	Radiated Emission	Yes

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Value (dB)
Radiated Emission	4.4
Conducted Emission	2.6

4. PRODUCT INFORMATION AND TEST SETUP

4.1. PRODUCT INFORMATION

Technical Data: DC 5V

4.2. TEST SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

4.3. SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.	PC	DELL	Vostro 3400	41541077701	N/A	N/A
2.	Mouse	IBM	M028UOL	23-468157	Un-shielded 1.2M	N/A
3.	Keyboard	IBM	89P8300	02284699	Un-shielded 1.2M	N/A
4.	Printer	HP	M4600C	SS05730805	N/A	Un-shielded 1.2M
5.	Modem	TP-link	9205-AB6	VK-KZ133	Un-shielded1M	Un-shielded 1M

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5. FACILITIES AND ACCREDITATIONS

5.1. TEST FACILITY

All test facilities used to collect the test data are located at Building C, Hongwei Industrial Zone, Baoan 70 District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4, CISPR 16-1-1 and other equivalent standards.

5.2. TEST EQUIPMENT LIST

Instrumentation: The following list contains equipments used at CTI for testing.
The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

Equipment used during the tests:

3M Semi-anechoic Chamber - Radiated Emission Test				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
3M Chamber & Accessory Equipment	ETS-LINDGREN	FACT-3	3510	07/09/2012
Spectrum Analyzer	Agilent	E4440A	MY46185649	03/29/2012
Biconilog Antenna	ETS-LINGREN	3142C	00044562	07/31/2012
Multi device Controller	ETS-LINGREN	2090	00057230	N/A
Shielding Room No. 1 - Conducted Emission Test				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
Receiver	R&S	ESCI	100009	07/10/2012
LISN	R&S	ENV216	100098	07/10/2012

5.3. LABORATORY ACCREDITATIONS AND LISTINGS

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC/EN 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

6. CONDUCTED EMISSION TEST

6.1. LIMITS

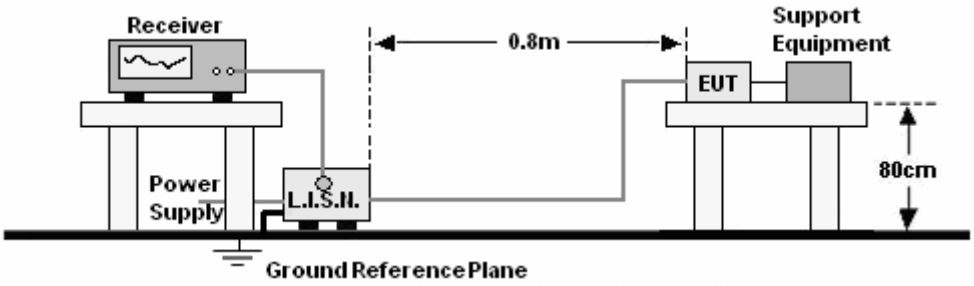
Limits for Class B digital devices

Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

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

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

6.2. BLOCK DIAGRAM OF TEST SETUP



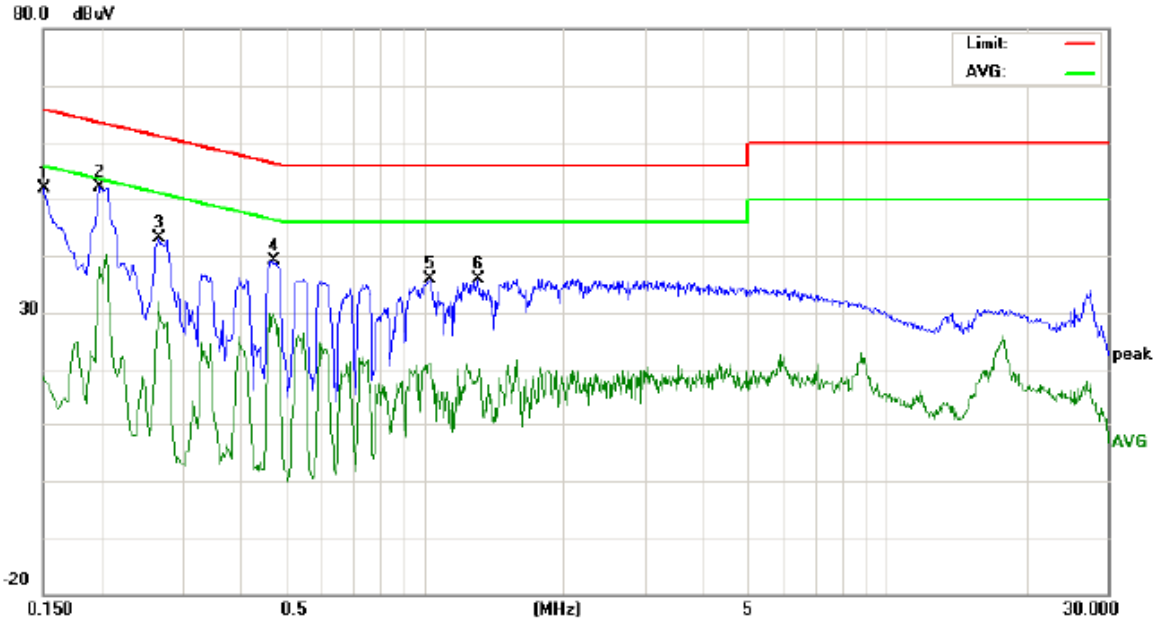
6.3. PROCEDURE OF CONDUCTED EMISSION TEST

a. The EUT was placed on a nonconductive table above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from EUT in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4. GRAPHS AND DATA



Site site #1 Phase: L1 Temperature: 23

Limit: FCC Class B Conduction (QP) Power: AC 120V/60Hz Humidity: 59 %

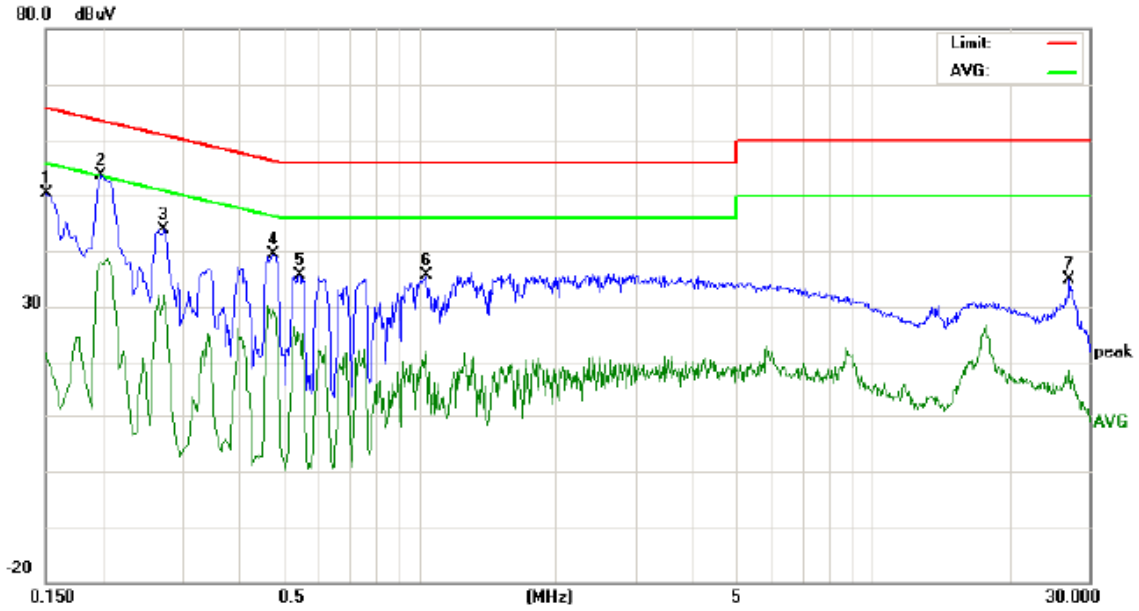
EUT: USB Fingerprint Dongle

M/N: FP1031

Mode: Data exchange

Note:

No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1500	42.18		8.74	9.79	51.97		18.53	66.00	56.00	-14.03	-37.47	P	
2	0.1980	42.40		28.25	9.81	52.21		38.06	63.69	53.69	-11.48	-15.63	P	
3	0.2660	33.41		22.10	9.81	43.22		31.91	61.24	51.24	-18.02	-19.33	P	
4	0.4740	29.36		19.66	9.81	39.17		29.47	56.44	46.44	-17.27	-16.97	P	
5	1.0300	25.98		11.16	9.86	35.84		21.02	56.00	46.00	-20.16	-24.98	P	
6	1.3060	25.92		8.85	9.87	35.79		18.72	56.00	46.00	-20.21	-27.28	P	



Site site #1 Phase: N Temperature: 23

Limit: FCC Class B Conduction (QP) Power: AC 120V/60Hz Humidity: 59 %

EUT: USB Fingerprint Dongle

M/N: FP1031

Mode: Data exchange

Note:

No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1500	40.62		11.82	9.79	50.41		21.61	65.99	55.99	-15.58	-34.38	P	
2	0.1980	43.71		28.02	9.81	53.52		37.83	63.69	53.69	-10.17	-15.86	P	
3	0.2740	34.09		22.27	9.81	43.90		32.08	60.99	50.99	-17.09	-18.91	P	
4	0.4780	29.45		19.55	9.81	39.26		29.36	56.37	46.37	-17.11	-17.01	P	
5	0.5460	25.82		15.30	9.82	35.64		25.12	56.00	46.00	-20.36	-20.88	P	
6	1.0380	25.68		11.97	9.86	35.54		21.83	56.00	46.00	-20.46	-24.17	P	
7	27.1540	24.48		7.96	10.34	34.82		18.30	60.00	50.00	-25.18	-31.70	P	

7. RADIATED EMISSION TEST

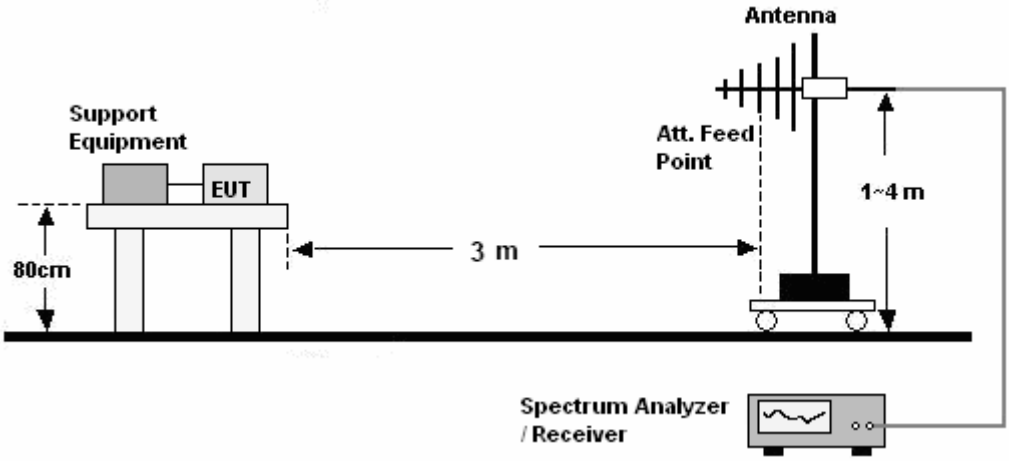
7.1. LIMITS

Limits for Class B digital devices

Frequency (MHz)	limits at 3m dB(μV/m)
30-88	40.0
88-216	43.5
216-960	46.0
Above 960	54.0

NOTE: 1. The lower limit shall apply at the transition frequency.
2. The limits shown above are based on measuring equipment employing a CISPR quasi-peak detector function for frequencies below or equal to 1000MHz.
3. The limits shown above are based on measuring equipment employing an average detector function for frequencies above 1000MHz.

7.2. BLOCK DIAGRAM OF TEST SETUP



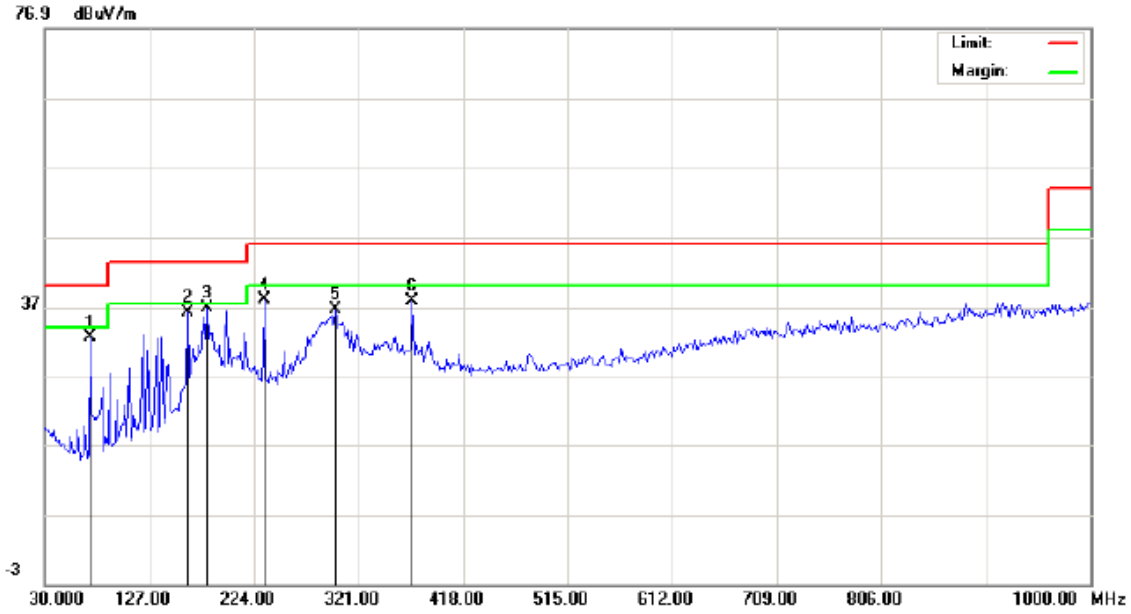
7.3. PROCEDURE OF RADIATED EMISSION TEST

a. The EUT was placed on the non-conductive turntable 0.8 m above the ground at a chamber.

b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.

c. For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where EUT radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

7.4. GRAPHS AND DATA



Site site #1 Polarization: *Horizontal* Temperature: 25

Limit: FCC PART15 B Radiation Power: DC 5V Humidity: 56 %

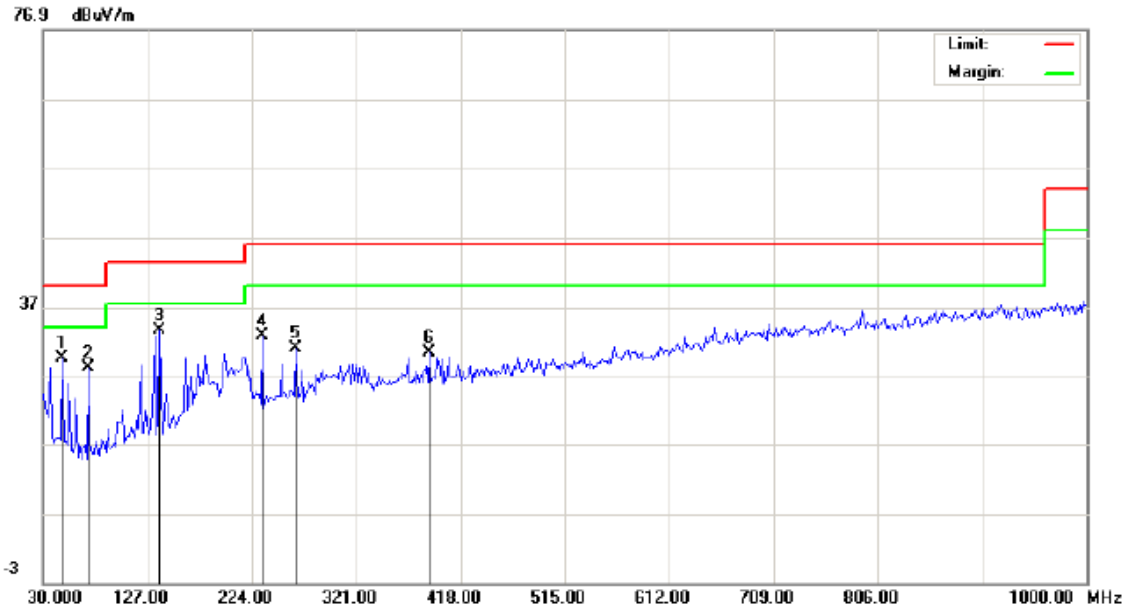
EUT: USB Fingerprint Dongle

M/N: FP1031

Mode: Data exchange

Note:

No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	72.0333	25.09			7.56	32.65			40.00		-7.35		P	
2	162.5666	24.24			11.94	36.18			43.50		-7.32		P	
3	180.3500	24.48			12.42	36.90			43.50		-6.60		P	
4	233.7000	23.73			14.27	38.00			46.00		-8.00		P	
5	299.9832	19.64			16.87	36.51			46.00		-9.49		P	
6	371.1167	19.18			18.54	37.72			46.00		-8.28		P	



Site site #1
Limit: FCC PART15 B Radiation
EUT: USB Fingerprint Dongle
M/N: FP1031
Mode: Data exchange
Note:

Polarization: *Vertical*
Power: DC 5V

Temperature: 25
Humidity: 56 %

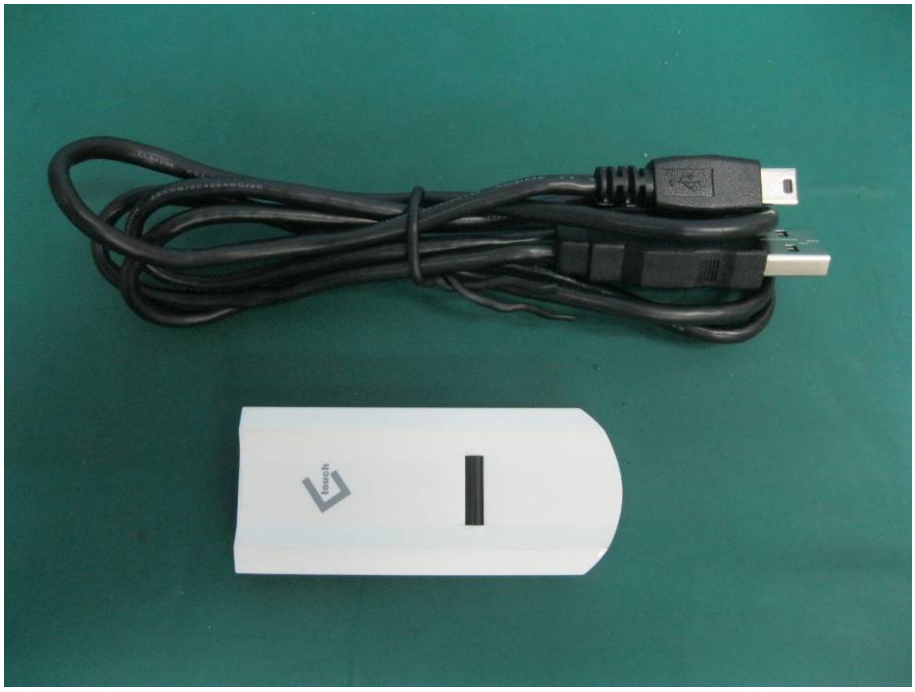
No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F Comment
1	47.7833	19.74			9.85	29.59			40.00		-10.41		P
2	72.0332	20.60			7.56	28.16			40.00		-11.84		P
3	138.3167	22.36			11.29	33.65			43.50		-9.85		P
4	233.7000	18.60			14.27	32.87			46.00		-13.13		P
5	264.4166	15.47			15.48	30.95			46.00		-15.05		P
6	388.9000	11.47			18.96	30.43			46.00		-15.57		P

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

CONDUCTED EMISSION TEST SETUP

RADIATED EMISSION TEST SETUP

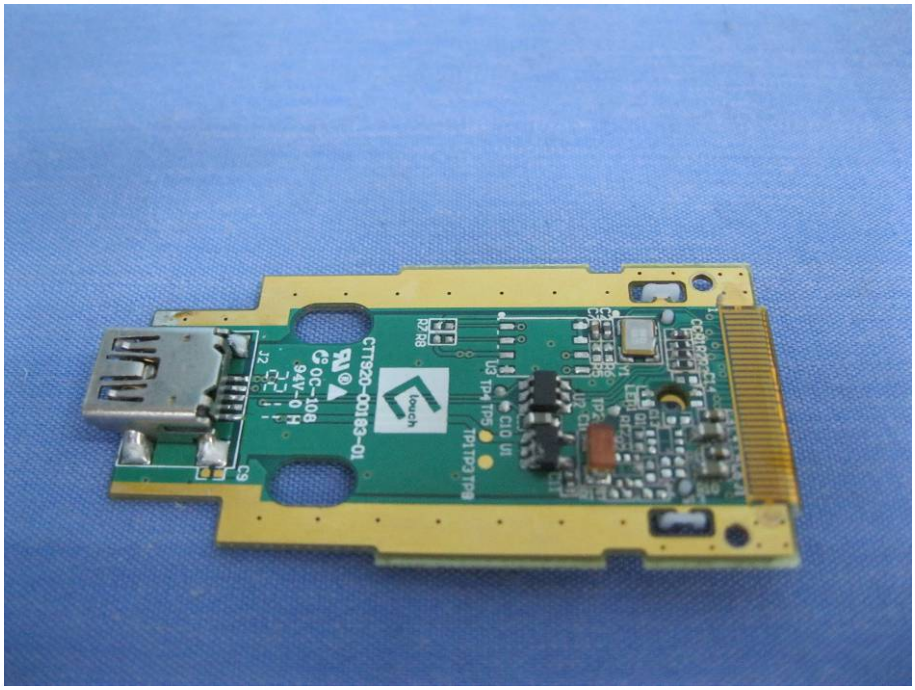
APPENDIX 2 PHOTOGRAPHS OF EUT



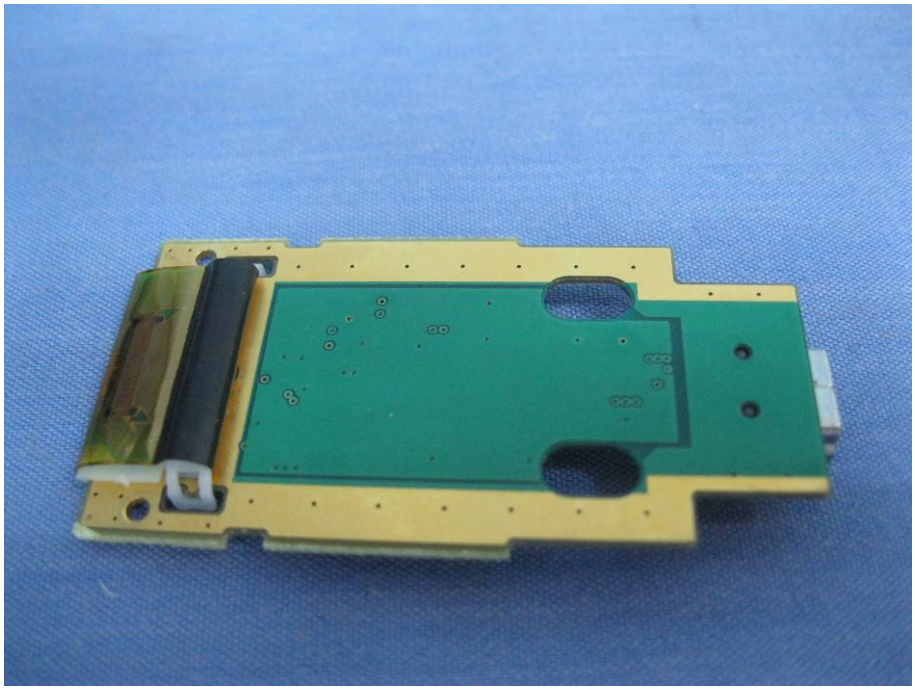
View of EUT-1

View of EUT-2

View of EUT-3



View of EUT-4



View of EUT-5

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