FCC PART 15B TEST REPORT

On Behalf of

PaloSanto Solutions

Elastix microUCS

Model No.: microUCS

Prepared for	:	PaloSanto Solutions
Address	:	Cdla. Nueva Kennedy, Calle ENo.222 - 9na Este, Guayaquil, Ecuador

Prepared By	:	Shenzhen Anbotek Compliance Laboratory Limited
Address	:	1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China Tel: (86) 755-26066544 Fax: (86) 755-26014772

Report Number	:	201306778F
Date of Test	:	Jun. 19~ Jul. 18, 2013
Date of Report	:	Jul. 22, 2013

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TEST REPORT VERIFICATION

Applicant	:	PaloSanto Solutions
Manufacturer	:	PaloSanto Solutions
EUT	:	Elastix microUCS
Model No.	:	microUCS
Rating	:	DC12V, 0.12 A
Trade Mark	:	N.A.

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B 2011 & FCC / ANSI C63.4-2009

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited 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 Shenzhen Anbotek Compliance Laboratory Limited 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 Shenzhen Anbotek Compliance Laboratory Limited.

Date of Test : Jun. 19~ Jul. 18, 2013

Prepared by : Barak Ban
(Engineer/ Barak Ban)

Reviewer : Sally. zhang
(Project Manager/ Sally Zhang)

Approved & Authorized Signer : Tom Chen
(Manager/ Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Elastix microUCS
Model Number	:	microUCS
Test Power Supply	:	AC 120V/60Hz
Applicant	:	PaloSanto Solutions
Address	:	Cdla. Nueva Kennedy, Calle ENo.222 - 9na Este, Guayaquil, Ecuador
Manufacturer	:	PaloSanto Solutions
Address	:	Cdla. Nueva Kennedy, Calle ENo.222 - 9na Este, Guayaquil, Ecuador
Date of Sample received	:	Jun. 19, 2013
Date of Test	:	Jun. 19~ Jul. 18, 2013

1.2. Auxiliary Equipment Used during Test

PC	:	Manufacturer: DELL M/N: OPTIPLEX 380 S/N: 1J63X2X CE , FCC: DOC
MONITOR	:	Manufacturer: DELL M/N: E170Sc S/N: CN-00V539-64180-055-0UPS CE , FCC: DOC
KEYBOARD	:	Manufacturer: DELL M/N: SK-8115 S/N: CN-0DJ313-71616-06C-02XN CE , FCC: DOC Cable: 1m, unshielded
MOUSE	:	Manufacturer: DELL M/N: M-UARDEL7 S/N: N/A CE , FCC: DOC Cable: 1m, unshielded
Power Line	:	1.5m, unshielded
VGA Cable	:	1.5m, unshielded
USB Cable	:	1m, unshielded
gigabit-network Cable	:	10m, unshielded

1.3. Description of Test Facility

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

CNAS - LAB Code: L3503
Shenzhen Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021
Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registed 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 752021, July 10, 2013.

IC-Registration No.: 8058A-1
Shenzhen Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, February 22, 2013.

Test Location
All Emissions tests were performed
Shenzhen Anbotek Compliance Laboratory Limited. at 1/F., Building 1, SEC Industrial Park, No.0409 Qianhai Road, Nanshan District, Shenzhen, Guangdong, China

1.4. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.3dB

Conduction Uncertainty : Uc = 3.4dB

1.5. Test Summary

For the EUT described above. The standards used were FCC Part 15 Subpart B for Emissions.
Table 1: Tests Carried Out Under FCC Part 15 Subpart B

Standard	Test Items	Status
FCC Part 15 Subpart B	Power Line Conducted Emission Test (150KHz To 30MHz)	√
FCC Part 15 Subpart B	Radiated Emission Test	√

√ Indicates that the test is applicable
x Indicates that the test is not applicable

2. POWER LINE CONDUCTED MEASUREMENT

2.1. Test Equipment

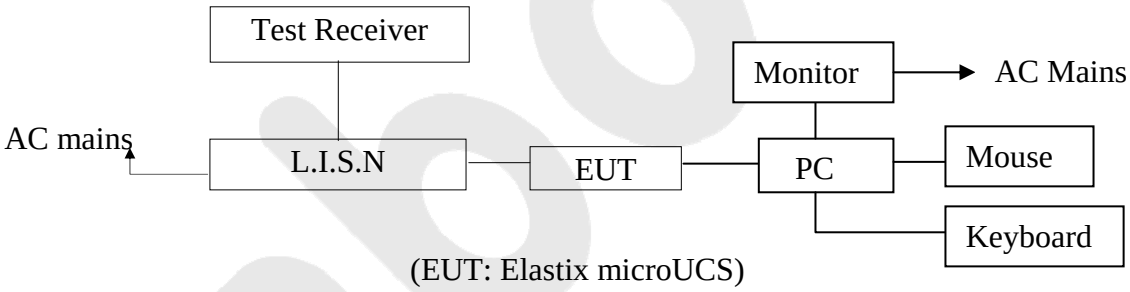
The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Two-Line V-network	Rohde & Schwarz	ENV216	10055	Apr. 23, 2013	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Apr. 23, 2013	1 Year

Conduction Uncertainty : Uc = 3.4dB

2.2. Block Diagram of Test Setup

2.2.1. Block diagram of connection between the EUT and simulators



(EUT: Elastix microUCS)

2.3. Power Line Conducted Emission Measurement Limits (FCC Part 15 Subpart B Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	79	66
0.50 ~ 5.00	73	60
5.00 ~ 30.00	73	60

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

2.4. 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.

EUT	:	Elastix microUCS
Model Number	:	microUCS
Applicant	:	PaloSanto Solutions

2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown as Section 2.2.
2.5.2. Turn on the power of all equipment and running the software: asterisk.
2.5.3. Let the EUT work in test mode (On) and measure it.

2.6. Test Procedure

The EUT system 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 line 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 FCC ANSI C63.4-2009 on Conducted Emission Measurement.
The bandwidth of test receiver (ESCI) set at 9KHz.
The frequency range from 150KHz to 30MHz is checked.
The test result are reported on Section 2.7.

2.7. Power Line Conducted Emission Measurement Results

PASS.

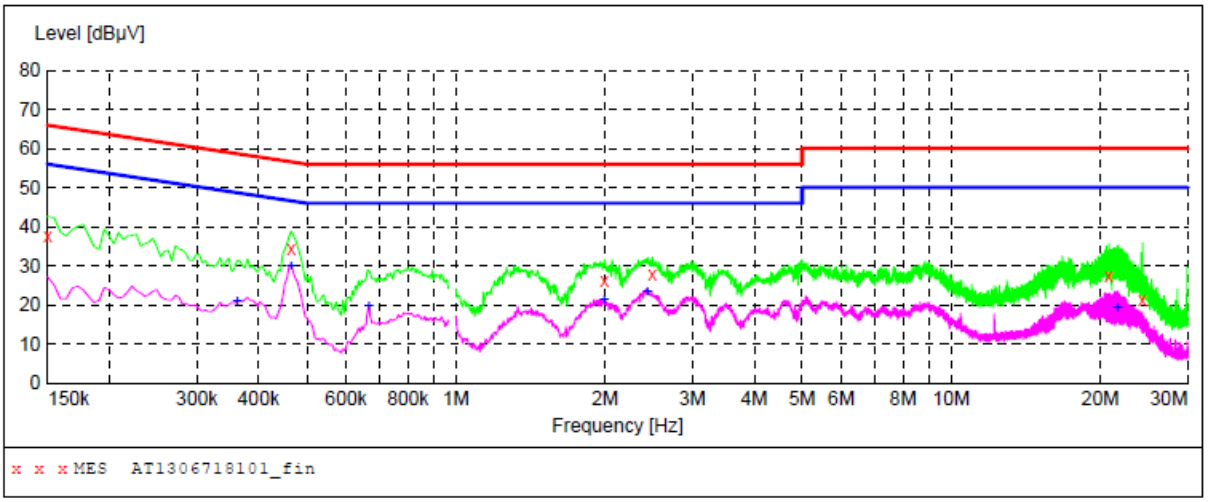
The frequency range from 150KHz to 30 MHz is investigated.

The test curves are shown in the following pages.

CONDUCTED EMISSION TEST DATA

EUT:	Elastix microUCS M/N: microUCS
Operating Condition:	On
Test Site:	1# Shielded Room
Operator:	Barak Ban
Test Specification:	120V~, 60Hz for PC
Comment:	L
	Tem:25℃ Hum:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "AT1306718101_fin"

6/26/2013 10:23AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	37.80	20.1	66	28.2	QP	L1	GND
0.465000	34.60	20.1	57	22.0	QP	L1	GND
1.994500	26.30	20.3	56	29.7	QP	L1	GND
2.494000	27.70	20.3	56	28.3	QP	L1	GND
20.800000	27.60	20.8	60	32.4	QP	L1	GND
24.328000	21.50	20.8	60	38.5	QP	L1	GND

MEASUREMENT RESULT: "AT1306718101_fin2"

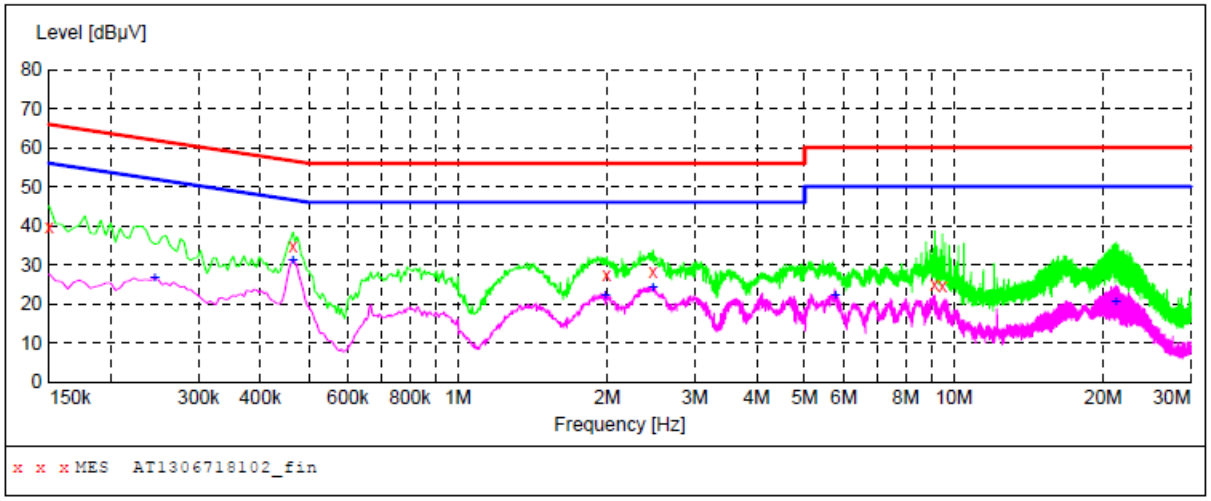
6/26/2013 10:23AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.361500	21.00	20.1	49	27.7	AV	L1	GND
0.465000	30.00	20.1	47	16.6	AV	L1	GND
0.667500	19.50	20.1	46	26.5	AV	L1	GND
1.994500	21.30	20.3	46	24.7	AV	L1	GND
2.431000	23.30	20.3	46	22.7	AV	L1	GND
21.610000	19.40	20.8	50	30.6	AV	L1	GND

CONDUCTED EMISSION TEST DATA

EUT:	Elastix microUCS M/N:microUCS
Operating Condition:	On
Test Site:	1# Shielded Room
Operator:	Barak Ban
Test Specification:	120V~, 60Hz for PC
Comment:	N
	Tem:25℃ Hum:50%

SCAN TABLE: "Voltage(150K~30M)FIN"
Short Description: 150K-30M Disturbance Voltages



MEASUREMENT RESULT: "AT1306718102_fin"

6/26/2013 10:27AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	39.50	20.1	66	26.5	QP	N	GND
0.465000	34.90	20.1	57	21.7	QP	N	GND
1.994500	27.60	20.3	56	28.4	QP	N	GND
2.471500	28.40	20.3	56	27.6	QP	N	GND
9.145000	25.00	20.6	60	35.0	QP	N	GND
9.482500	24.50	20.6	60	35.5	QP	N	GND

MEASUREMENT RESULT: "AT1306718102_fin2"

6/26/2013 10:27AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.244500	26.70	20.1	52	25.2	AV	N	GND
0.465000	31.00	20.1	47	15.6	AV	N	GND
1.981000	22.30	20.3	46	23.7	AV	N	GND
2.471500	24.30	20.3	46	21.7	AV	N	GND
5.752000	22.00	20.5	50	28.0	AV	N	GND
21.214000	20.60	20.8	50	29.4	AV	N	GND

3. RADIATED EMISSION MEASUREMENT

3.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

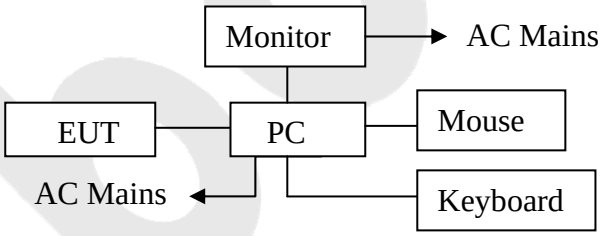
3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
7	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Apr. 23, 2013	1 Year
8	Trilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Apr. 23, 2013	1 Year
9	Pre-amplifier	Compliance Direction	PAP-0203	22008	Apr. 23, 2013	1 Year
10	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

Radiation Uncertainty : Ur = 4.3dB

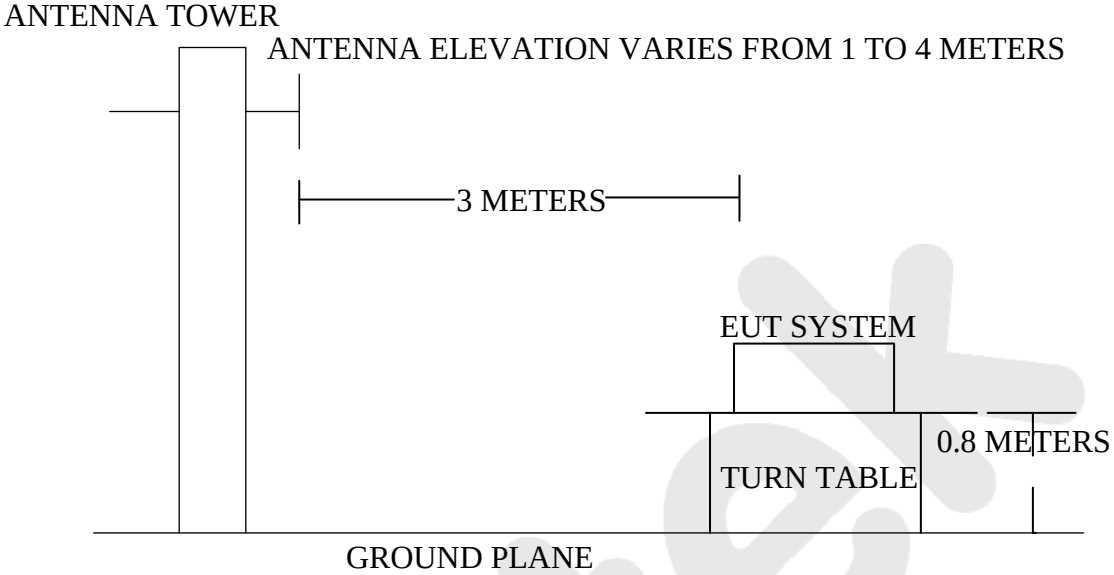
3.2. Block Diagram of Test Setup

3.2.1. Block diagram of connection between the EUT and simulators



(EUT: Elastix microUCS)

3.2.2. Anechoic Chamber Test Setup Diagram



(EUT: Elastix microUCS)

3.3. Radiated Emission Limit (Subpart B Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT dB(μV)/m
30~88	3	49.5
88~216	3	54
216~960	3	56.9
Above 960	3	60

Remark： (1) Emission level (dB)μV = 20 log Emission level μV/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.

3.4. EUT Configuration on Measurement

The following equipments are 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.

EUT : Elastix microUCS
Model Number : microUCS
Applicant : PaloSanto Solutions

3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.
3.5.2. Turn on the power of all equipment and running the software: asterisk.
3.5.3. Let the EUT work in test mode (On) and measure it.

3.6. Test Procedure

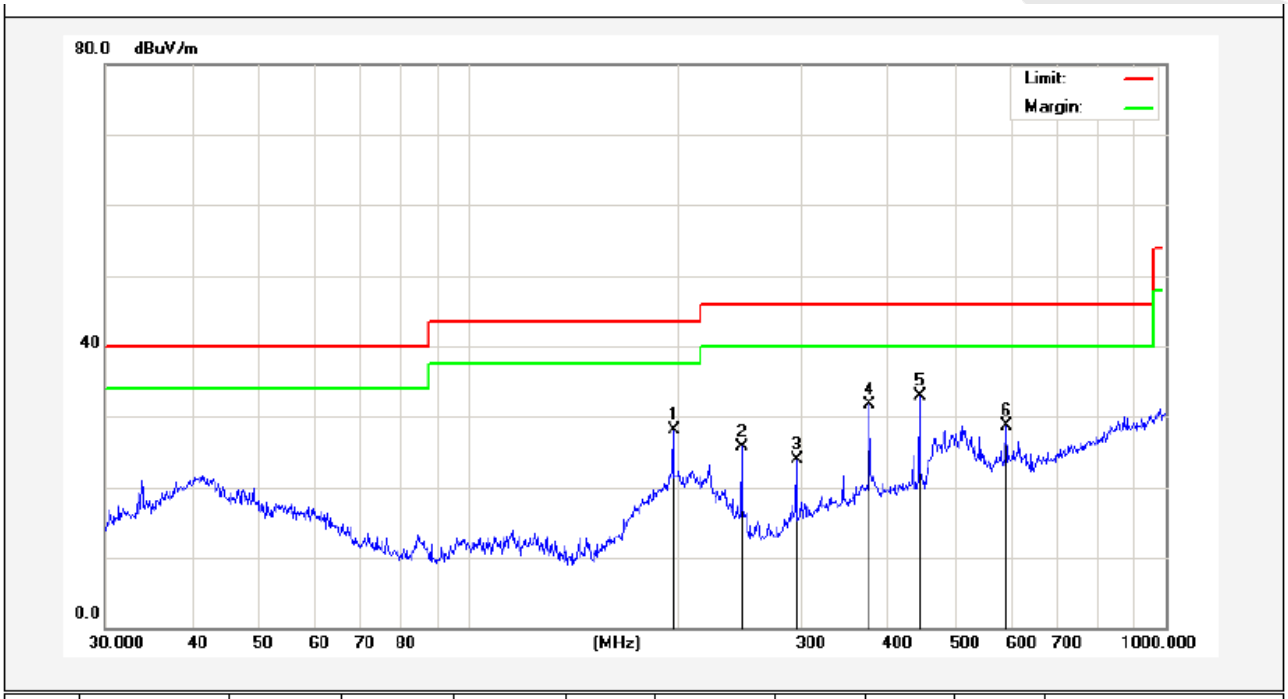
EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (Trilog Broadband 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 C63.4-2009 on radiated emission measurement.

The bandwidth of the EMI test receiver (ESCI) is set at 120kHz.
The frequency range from 30MHz to 6000MHz is checked.
The test mode is tested in chamber and all the test results are listed in Section 3.7.

3.7. Radiated Emission Measurement Results

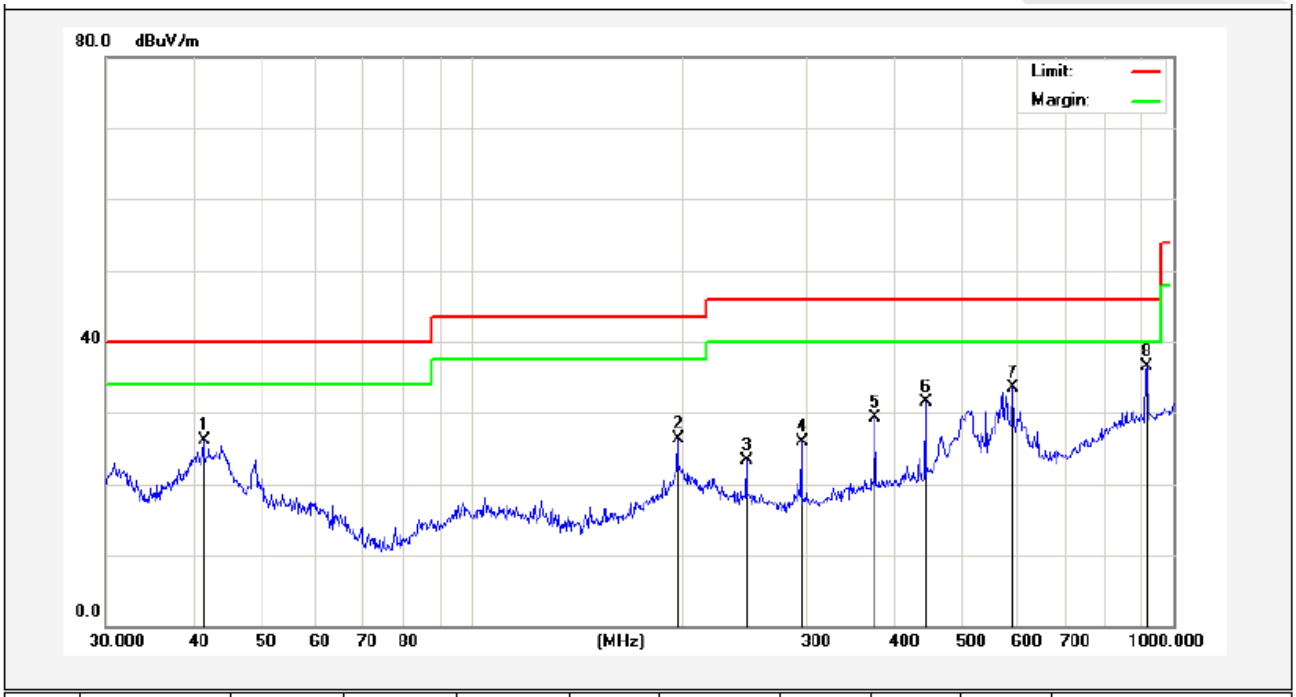
PASS.

Job No.:	**AT1306718F**	**Polarziation:**	**Horizontal**
Standard:	**(RE)FCC PART15 B _3m**	**Power Source:**	**DC 12V**
Test item:	**Radiation Test**	**Date:**	**2013/06/29**
Temp.(C)/Hum.(%RH):	**24.3(C)/55%RH**	**Time:**	**9:20:24**
EUT:	**Elastix microUCS**	**Test By:**	**Barak Ban**
Model:	**microUCS**	**Distance:**	**3m**
Mode:	**On**		
Note:			



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	196.5098	48.98	-20.89	28.09	43.50	-15.41	peak			
2	245.9509	44.06	-18.36	25.70	46.00	-20.30	peak			
3	295.1469	41.76	-17.82	23.94	46.00	-22.06	peak			
4	375.9385	45.14	-13.35	31.79	46.00	-14.21	peak			
5	443.2943	45.05	-12.20	32.85	46.00	-13.15	peak			
6	590.9737	39.98	-11.21	28.77	46.00	-17.23	peak			

Job No.:	**AT1306718F**	**Polarziation:**	**Vertical**
Standard:	**(RE)FCC PART15 B _3m**	**Power Source:**	**DC 12V**
Test item:	**Radiation Test**	**Date:**	**2013/06/29**
Temp.(C)/Hum.(%RH):	**24.3(C)/55%RH**	**Time:**	**9:22:39**
EUT:	**Elastix microUCS**	**Test By:**	**Barak Ban**
Model:	**microUCS**	**Distance:**	**3m**
Mode:	**On**		
Note:			

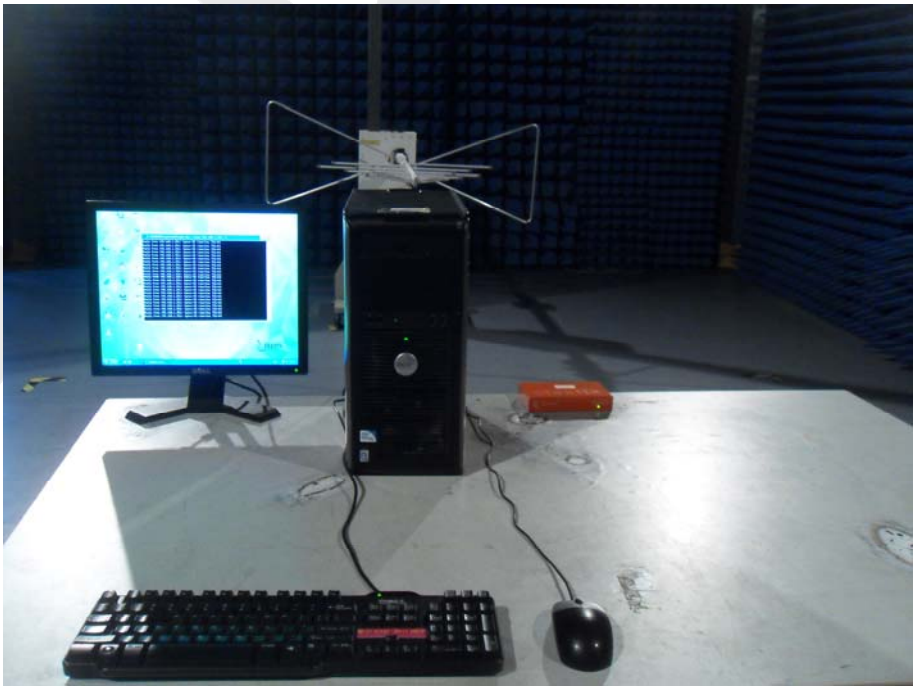


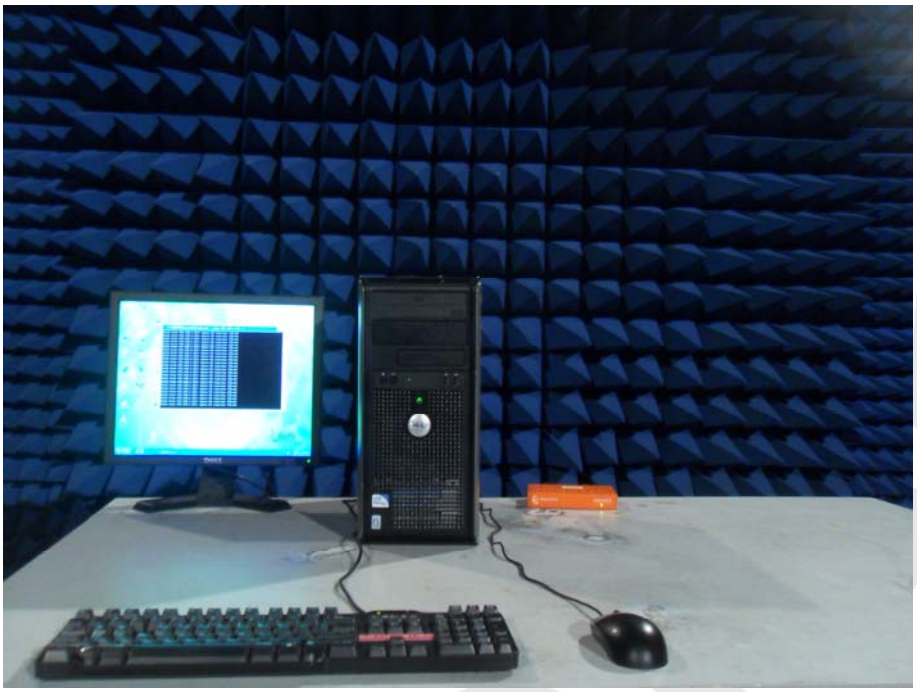
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	41.4215	37.09	-10.93	26.16	40.00	-13.84	peak			
2	196.5098	42.18	-15.89	26.29	43.50	-17.21	peak			
3	245.9509	37.36	-14.06	23.30	46.00	-22.70	peak			
4	295.1469	40.79	-14.82	25.97	46.00	-20.03	peak			
5	375.9385	41.60	-12.35	29.25	46.00	-16.75	peak			
6	443.2943	42.83	-11.36	31.47	46.00	-14.53	peak			
7	590.9737	42.82	-9.39	33.43	46.00	-12.57	peak			
8	916.0687	40.03	-3.52	36.51	46.00	-9.49	peak			

4. PHOTOGRAPH

4.1. Photo of Power Line Conducted Emission Test

3.2. Photo of Radiated Emission Test





APPENDIX I
(Photos of EUT)

Figure 1
The EUT-Front View

Figure 2
The EUT-Back View

Figure 3
The EUT-Inside View

Figure 4
PCB of the EUT- Front View

Figure 5
PCB of the EUT- Back View