

FCC TEST REPORT

Product Name : HelloNurse
Trade Name : At Box
Model Name : NV-TRUX100
FCC ID : ZLLNV-TRUX100
Contains FCC ID (ZigBee module) : TYOJN5148M3
Serial Number : N/A
Technical Data : 5V/ 600mA, 3W
Report Number : EESZD04290009-2
Date : May 23, 2011
Regulations : See below

Test Standards	Results
<input checked="" type="checkbox"/> FCC Part 15 Subpart B: 2009	PASS

Prepared for:

At Box Technology Inc.**2F. -3, No. 716, JhongJheng Rd., JhengHe Dist., New Taipei City, Taiwan**

Prepared by:

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Check No.: 12711182

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CENTRE TESTING INTERNATIONAL (SHENZHEN) CORPORATION

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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant: At Box Technology Inc.
2F. -3, No. 716, JhongJheng Rd., JhengHe Dist., New Taipei City,
Taiwan

Manufacturer: At Box Technology Inc.
2F. -3, No. 716, JhongJheng Rd., JhengHe Dist., New Taipei City,
Taiwan

Authorization: Certification

Product Name: HelloNurse

Trade Name: At Box

Model Name: NV-TX100

FCC ID: ZLLNV-TRUX100

Serial Number: N/A

Report Number: EESZD04290009-2

Date of Test: May 03, 2011 to May 23, 2011

The above equipment was tested by CENTRE TESTING INTERNATIONAL (SHENZHEN) CORPORATION for compliance with the requirements set forth in FCC Rules and the measurement procedure according to ANSI C63.4-2009.

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

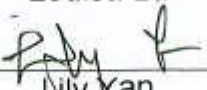
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Christy Chen

Reviewed by :


Louisa Lu

Approved by :


Lily Yan
Supervisor



Date

May 23, 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)
Conducted Emission	2.6
Radiated Emission	4.4

4. PRODUCT INFORMATION AND TEST SETUP

4.1. PRODUCT INFORMATION

Technical Data 5V/ 600mA, 3W

Adapter information: M/N: GS2U-003-050-A
Input: AC 100-240V, 50/60Hz
Output: DC 5V, 600mA, 3W max

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
3.	PC	Lenovo	PCG-3G1T	282170999014058	N/A
4.	Monitor	IBM	9205-AB6	VK-KZ133	Un-shielded 1.2M
5.	Mouse	IBM	M028UOL	23-468157	Un-shielded 1.2M
6.	Keyboard	IBM	89P8300	02284699	Un-shielded 1.2M

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:

Shielding Room No. 1 - Conducted Emission Test				
Equipment	Manufacturer	Model	Serial No.	Due Date
Receiver	R&S	ESCI	100009	07/10/2011
LISN	R&S	ENV216	100098	07/10/2011

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	07/31/2011
Multi device Controller	ETS-LINGREN	2090	00057230	N/A
Horn Antenna	ETS-LINGREN	3117	00057407	06/07/2011
Microwave Preamplifier	Agilent	8449B	3008A02425	N/A

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

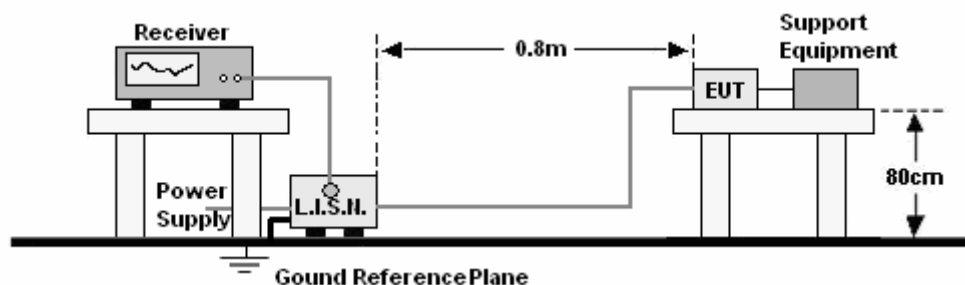
Limits for Class B digital devices

Frequency range (MHz)	Limits dB(μ V)	
	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



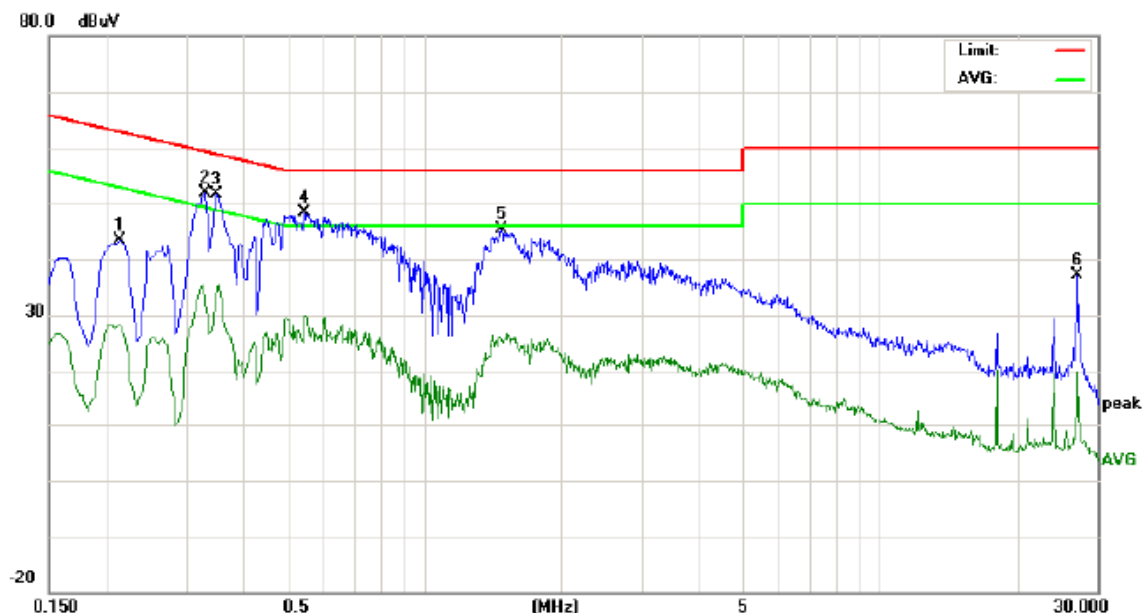
6.3. PROCEDURE OF CONDUCTED EMISSION TEST

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: 25

Limit: FCC Class B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 54 %

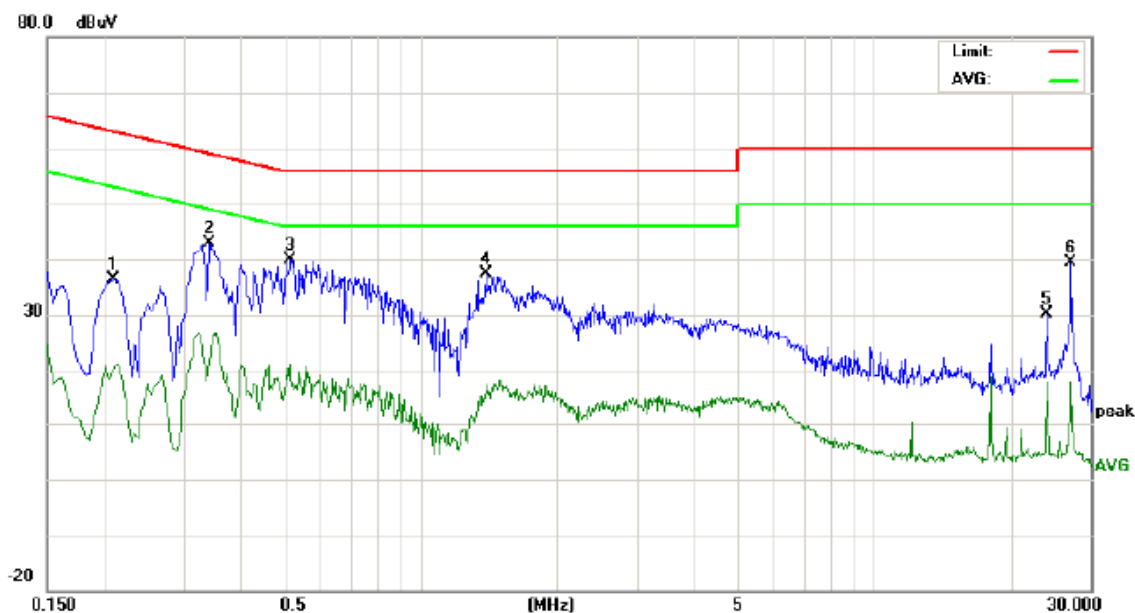
EUT: HelloNurse

M/N: NV-TRUX100

Mode: Data exchange

Note:

No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2140	33.46		18.41	9.81	43.27		28.22	63.04	53.04	-19.77	-24.82	P	
2	0.3300	42.17		23.28	9.81	51.98		33.09	59.45	49.45	-7.47	-16.36	P	
3	0.3500	41.85		23.82	9.81	51.66		33.63	58.96	48.96	-7.30	-15.33	P	
4	0.5460	38.56		20.03	9.82	48.38		29.85	56.00	46.00	-7.62	-16.15	P	
5	1.4740	35.38		15.86	9.88	45.26		25.74	56.00	46.00	-10.74	-20.26	P	
6	27.1540	26.73		9.64	10.34	37.07		19.98	60.00	50.00	-22.93	-30.02	P	



Site site #1

Limit: FCC Class B Conduction(QP)

EUT: HelloNurse

M/N: NV-TRUX100

Mode: Data exchange

Note:

Phase: **N**

Power: AC 120V/60Hz

Temperature: 25

Humidity: 54 %

No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor		Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG			peak	QP	AVG						
1	0.2100	26.54		10.21	9.81		36.35		20.02	63.20	53.20	-26.85	-33.18	P	
2	0.3420	32.97		11.85	9.81		42.78		21.66	59.15	49.15	-16.37	-27.49	P	
3	0.5180	30.06		8.79	9.81		39.87		18.60	56.00	46.00	-16.13	-27.40	P	
4	1.3900	27.45		6.53	9.88		37.33		16.41	56.00	46.00	-18.67	-29.59	P	
5	24.1340	19.81		7.46	10.36		30.17		17.82	60.00	50.00	-29.83	-32.18	P	
6	27.1540	28.96		7.63	10.34		39.30		17.97	60.00	50.00	-20.70	-32.03	P	

7. RADIATED EMISSION TEST

7.1. LIMITS

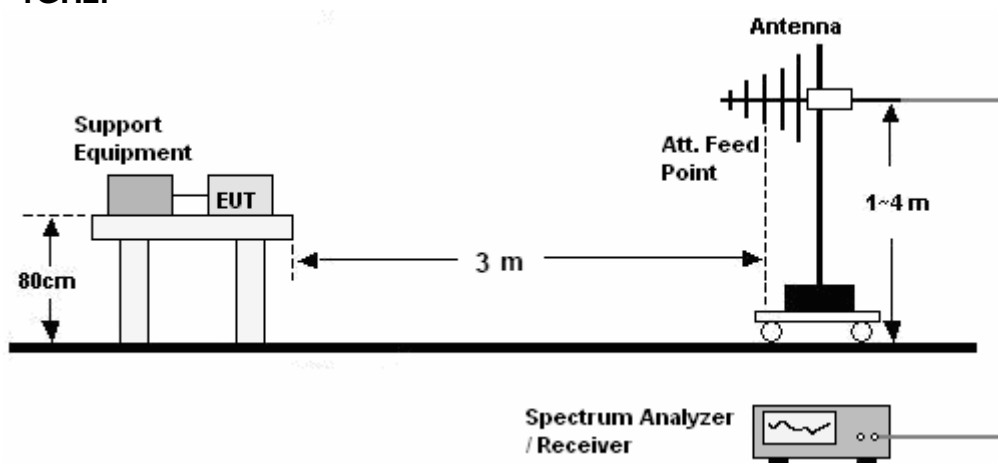
Limits for Class B digital devices

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

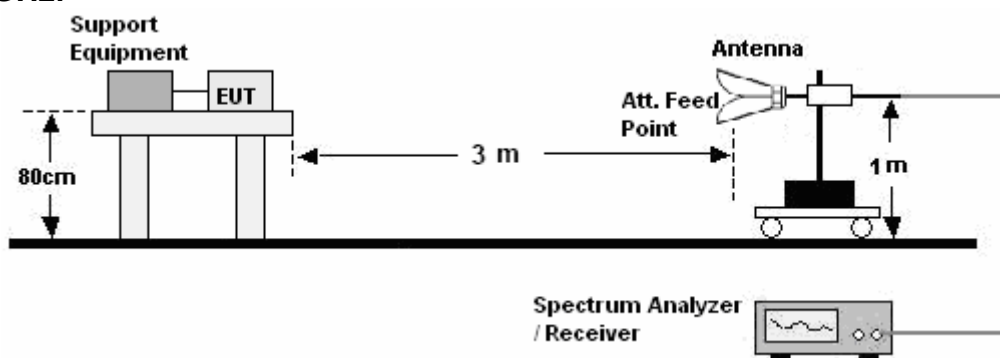
- NOTE:**
1. The lower limit shall apply at the transition frequency.
 2. The limits shown above are based on measuring equipment employing a CISPR quasi-peak detector function for frequencies below or equal to 1000MHz.
 3. The limits shown above are based on measuring equipment employing an average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

7.2. BLOCK DIAGRAM OF TEST SETUP

30MHz ~ 1GHz:



Above 1GHz:



7.3. PROCEDURE OF RADIATED EMISSION TEST

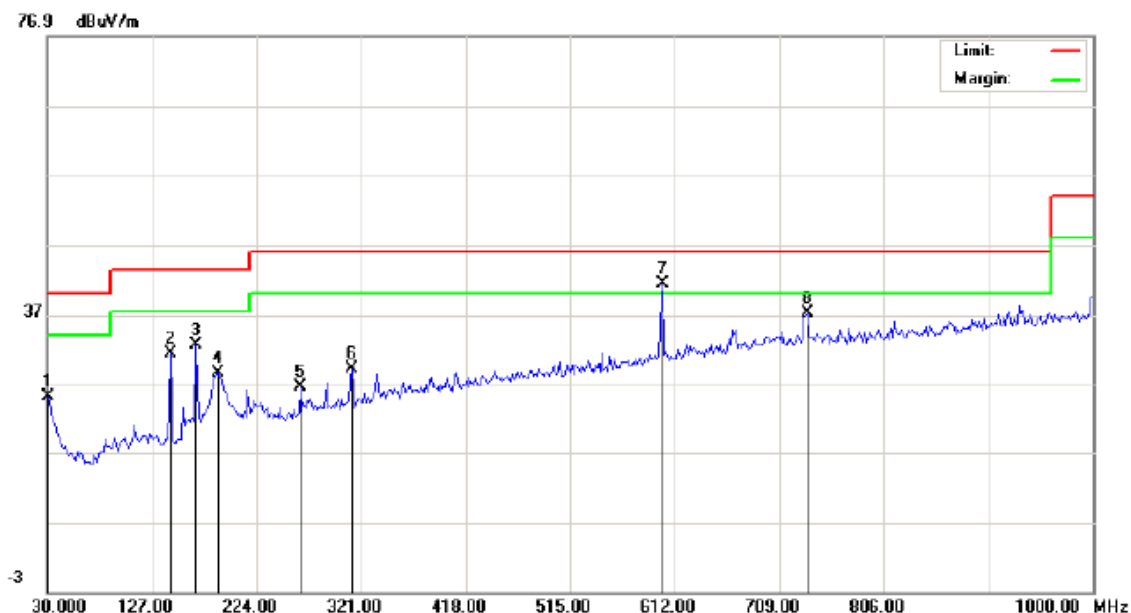
30MHz ~ 1GHz:

- 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.

Above 1GHz:

- 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 1MHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied 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 AV value: rotate the turntable from 0 to 360 degrees to find the degree where EUT radiated the maximum emission, then set the test frequency analyzer/receiver to AV value 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 Class B 3M Radiation

Power: AC 120V/60Hz

Humidity: 51 %

EUT: HelloNurse

M/N: NV-TRUX100

Mode: Data exchange

Note:

No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	30.0000	7.58			17.63	25.21			40.00		-14.79		P	
2	144.7833	21.26			10.09	31.35			43.50		-12.15		P	
3	167.4167	21.35			11.27	32.62			43.50		-10.88		P	
4	188.4333	16.64			11.88	28.52			43.50		-14.98		P	
5	264.4166	12.10			14.41	26.51			46.00		-19.49		P	
6	312.9166	12.95			16.16	29.11			46.00		-16.89		P	
7	600.6833	19.16			22.21	41.37			46.00		-4.63		P	
8	734.8667	12.25			24.87	37.12			46.00		-8.88		P	



Site site #1 Polarization: **Vertical** Temperature: 25
 Limit: FCC Class B 3M Radiation Power: AC 120V/60Hz Humidity: 51 %
 EUT: HelloNurse
 M/N: NV-TRUX100
 Mode: Data exchange
 Note:

No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	30.0000	12.50			17.63	30.13			40.00		-9.87		P	
2	42.9333	19.22			10.92	30.14			40.00		-9.86		P	
3	120.5333	15.10			9.19	24.29			43.50		-19.21		P	
4	144.7833	13.56			10.09	23.65			43.50		-19.85		P	
5	186.8167	14.19			11.86	26.05			43.50		-17.45		P	
6	233.7000	13.67			13.18	26.85			46.00		-19.15		P	
7	384.0500	8.95			17.98	26.93			46.00		-19.07		P	
8	400.2167	10.84			18.39	29.23			46.00		-16.77		P	
9	600.6833	22.91	22.01		22.21	45.12	44.22		46.00		-1.78		P	
10	633.0167	12.94			23.03	35.97			46.00		-10.03		P	
11	668.5833	14.97			23.94	38.91			46.00		-7.09		P	
12	865.8167	14.68			26.12	40.80			46.00		-5.20		P	

Remark:

The highest frequency generated is less than 500MHz, and upper frequency of measurement range is up to 5GHz, but the test data above 1GHz are very low, and they are not recorded.

APPENDIX 1 PHOTOGRAPHS OF TEST SETUP

CONDUCTED DISTURBANCE TEST SETUP



RADIATED DISTURBANCE TEST SETUP (below 1GHz)



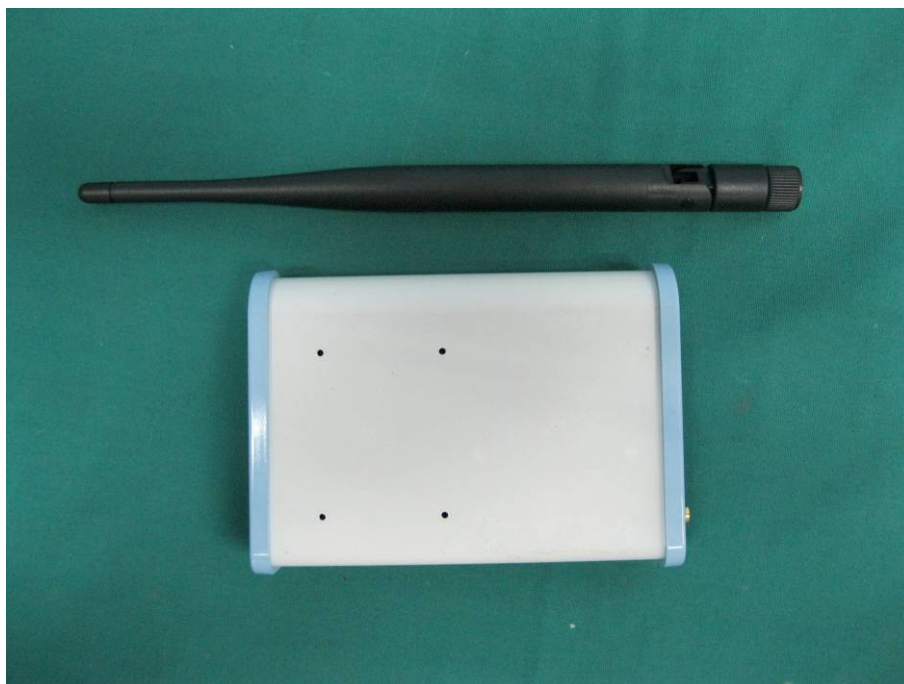
RADIATED DISTURBANCE TEST SETUP (above 1GHz)



APPENDIX 2 PHOTOGRAPHS OF EUT



View of EUT-1 (NV-TRUX100)



View of EUT-2 (NV-TRUX100)



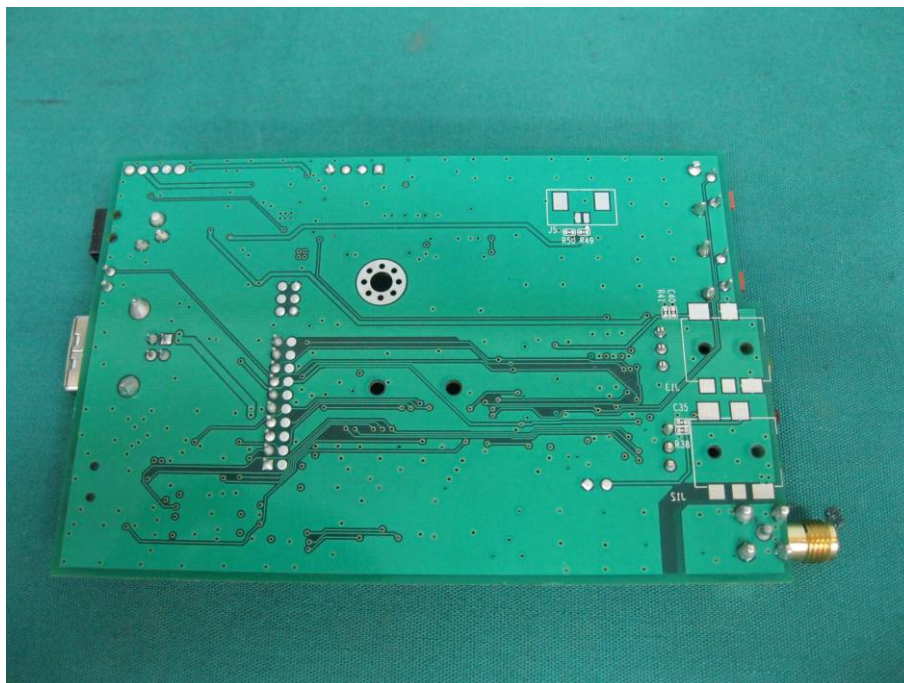
View of EUT-3 (NV-TRUX100)



View of EUT-4 (NV-TRUX100)



View of EUT-5 (NV-TRUX100)



View of EUT-6 (NV-TRUX100)



View of adapter-1



View of adapter-2

-----End of the report-----