Shenzhen Huatongwei International Inspection Co., Ltd.
Keji S,12th , Road, Hi-tech Industrial Park, Shenzhen, Guangdong, China
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CNASL1225

TEST REPORT

FCC Rules and Regulations Part 18 2009

Industrial, scientific, and medical equipment – Limits and methods of measurement

Report Reference No.....:	**WE10050016**
FCC ID.....:	**YF2UB-ST5-11524-A**
Compiled by (position printed name signature)....:	File administrators Wenling Li
Supervised by (position printed name signature)....:	Test Engineer Eric Zhang
Approved by (position printed name signature)....:	Manager Jimmy Li
Date of issue.....:	July 13, 2010
Testing Laboratory Name .....:	**Shenzhen Huatongwei International Inspection Co., Ltd**
Address.....:	Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Testing location/ procedure .....:	Full application of Harmonised standards ☒ Partial application of Harmonised standards ☐ Other standard testing methods ☐
Applicant's name.....:	**NEW DYNAMIC ELECTRON CO.,LTD**
Address.....:	No.26 building, Common-Rich Industrial District, Tian-Xin Village, Ping-shan Town, Longgang District, Shenzhen City.
Test specification:	
Standard .....:	**FCC Rules and Regulations Part 18 2009**
TRF Originator.....:	Shenzhen Huatongwei International Inspection Co., Ltd
Master TRF.....:	Dated 2006-06

Test item description ..... :	ST5 energy saving fluorescent lamp
Trade Mark .....:	/
Manufacturer .....:	NEW DYNAMIC ELECTRON CO.,LTD
Model/Type reference.....:	UB-ST5-11524-A-XX
Listed Models .....:	/
Ratings.....:	120V 60Hz
Result.....:	**Positive**

EMC -- T E S T R E P O R T

Test Report No. :	WE10050016	July13, 2010 Date of issue

Equipment under Test	:	ST5 energy saving fluorescent lamp
Model / Type	:	UB-ST5-11524-A-XX
Listed Model	:	/
Applicant	:	NEW DYNAMIC ELECTRON CO.,LTD
Address	:	No201-16, Tongda Road, South Zone, Hushan District, Jiangshan, zhejiang, china
Manufacturer	:	NEW DYNAMIC ELECTRON CO.,LTD
Address	:	No201-16, Tongda Road, South Zone, Hushan District, Jiangshan, zhejiang, china

Test Result according to the standards on page 4:	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

FCC Rules and Regulations Part 18 2009 Industrial, scientific, and medical equipment – Limits and methods of measurement

2 . SUMMARY

2.1. General Remarks

Date of receipt of test sample : May 23, 2010

Testing commenced on : May 23, 2010

Testing concluded on : July 13, 2010

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage : o 230V / 50 Hz o 115V / 60Hz
o 12 V DC o 24 V DC
■ Other (specified in blank below)

AC 120V / 60Hz

2.3. Short description of the Equipment under Test (EUT)

The EUT is an ST5 energy saving fluorescent lamp.

.
Serial No.: Prototype

2.4. EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

Test program (customer specific)

Emissions tests……..: According to FCC Rules and Regulations Part 18 2009 and MP-5 1986, searching for the highest disturbance.

2.5. EUT configuration

No peripheral devices were connected during the measurement.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

3.2. Test Facility

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

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: March 30, 2009. Valid time is until March 29, 2012.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept 30, 2011.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory 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 662850, Renewal date Jul 01, 2009.

IC-Registration No.: 5377A

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on February 13, 2011.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2484. Date of Registration: December 20, 2009. Valid time is until December 19, 2012.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: December 20, 2009. Valid time is until December 19, 2012.

IECEE CB

Shenzhen Huatongwei International Inspection Co Ltd has been assessed and determined to fully comply with the requirements of ISO/IEC 17025: 2005-05, The Basic Rules, IECEE 01: 2008-11 and Rules of Procedure IECEE 02: 2008-10, and the relevant IECEE CB-Scheme Operational Documents.
It is therefore entitled to operate as a CB Testing Laboratory under the responsibility of Nemko A/S. This certificate remains valid until December 3rd 2012 at which time it will be reissued by the IECEE Executive Secretary upon successful completion of the normally scheduled 3-year Reassessment Program administered by the IECEE CB Scheme.

DNV

Shenzhen Huatongwei International Inspection Co Ltd has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025(2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until 09 July, 2010.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4. Test Description

Emission Measurement		
Radiated Emission	FCC Rules and Regulations Part 18 2009	PASS
Conducted Disturbance	FCC Rules and Regulations Part 18 2009	PASS

Remark: The measurement uncertainty is not included in the test result.

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24dB	(1)
Conducted Disturbance	0.15~30 MHz	3.39dB	(1)

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

3.6. Equipments Used during the Test

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2010/05
2	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2009/11
3	RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	2009/11
4	TURNTABLE	ETS	2088	2149	2009/11
5	ANTENNA MAST	ETS	2075	2346	2009/11
6	EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	N/A	2009/11
7	Amplifer	Sonoma	310N	E009-13	2009/11
8	Triple-Loop Antenna	ROHDE & SCHWARZ	HM020	100004	2009/11

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100106	2009/11
2	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2009/11
3	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100044	2009/11
4	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2009/11

4. TEST CONDITIONS AND RESULTS

4.1. Radiated Emission

For test instruments and accessories used see section 3.6.

4.1.1. Description of the test location

Test location: Shielded room No. 4

4.1.2. Limits of disturbance

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 88	3	40
88~216	3	43.5
216~1000	3	46

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

4.1.3. Description of the test set-up

4.1.3.1. Operating Condition

The EUT is running during the test, and the maximum emanating results are recorded.

4.1.3.2. Test Procedure

EUT is tested in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level. EUT is set 3 meters away from the center of receiving antenna, and the antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test.

For loop antenna, the height is setted at around 2 meters. And pre-test the EUT with antenna rotating 3 axis. The worst case will be recorded in the report.

4.1.4. Test result

The requirements are **Fulfilled**

Band Width: 120KHz at 30 to 1000MHz 200Hz at 0.009 to 0.15MHz 9KHz at 0.15 to 30MHz

Frequency Range: 0.009kHz to 1000MHz

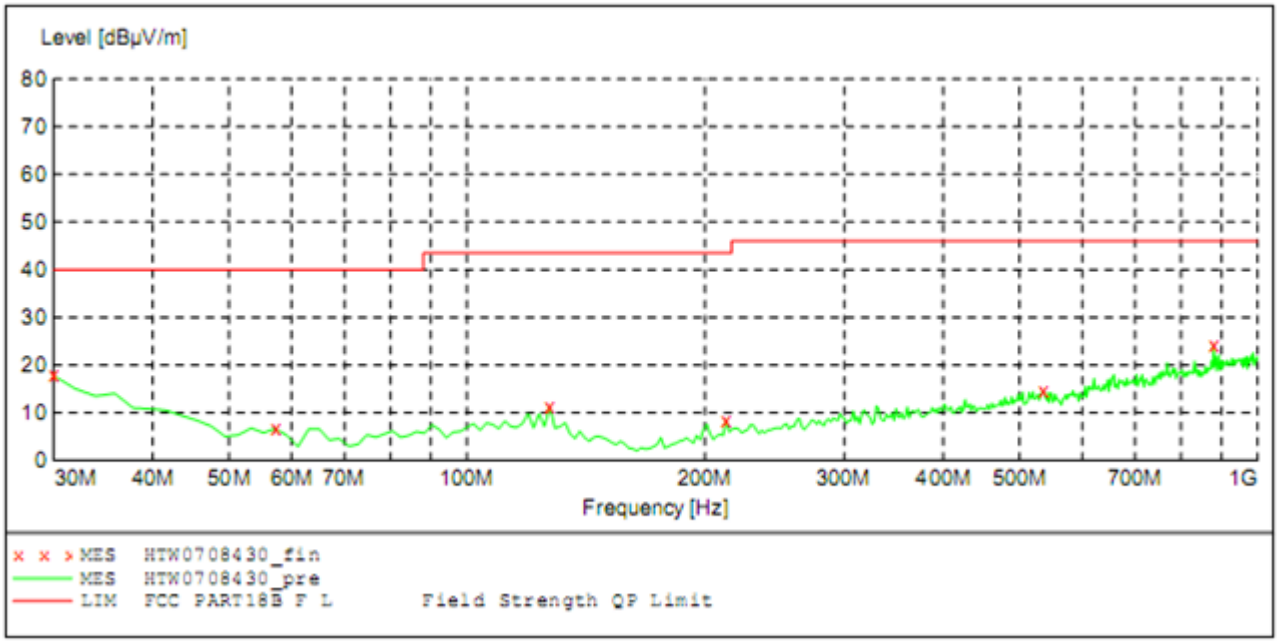
UB-ST5-11524-A-XX:

Frequency Range: 9K to 30MHz									
Frequency (KHz)	Emssion Level (dBuV/m)	Antenna Height (cm)	Detector	RAW (dBuV/m)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)	Result
9.49	41.36	200	QP	45.84	20.4	6.02	-30.9	-4.48	Pass
40.62	57.26	200	QP	63.18	19.8	5.98	-31.7	-5.92	Pass
41.36	55.12	200	QP	61.04	19.8	5.98	-31.7	-5.92	Pass
150.96	40.78	200	QP	46.91	19.5	5.97	-31.6	-6.13	Pass
265.12	36.24	200	QP	42.37	19.5	5.97	-31.6	-6.13	Pass
590.55	30.25	200	QP	36.99	19.2	5.96	-31.9	-6.74	Pass

Note : The worst case radiated emission configuration photo please refer to the setup photo.

SWEEP TABLE: "test (30M-1G)"

```
Short Description:            Field Strength
Start      Stop       Detector  Meas.     IF         Transducer
Frequency  Frequency            Time      Bandw.
30.0 MHz   1.0 GHz    MaxPeak   Coupled   100 kHz    HL562 09
```

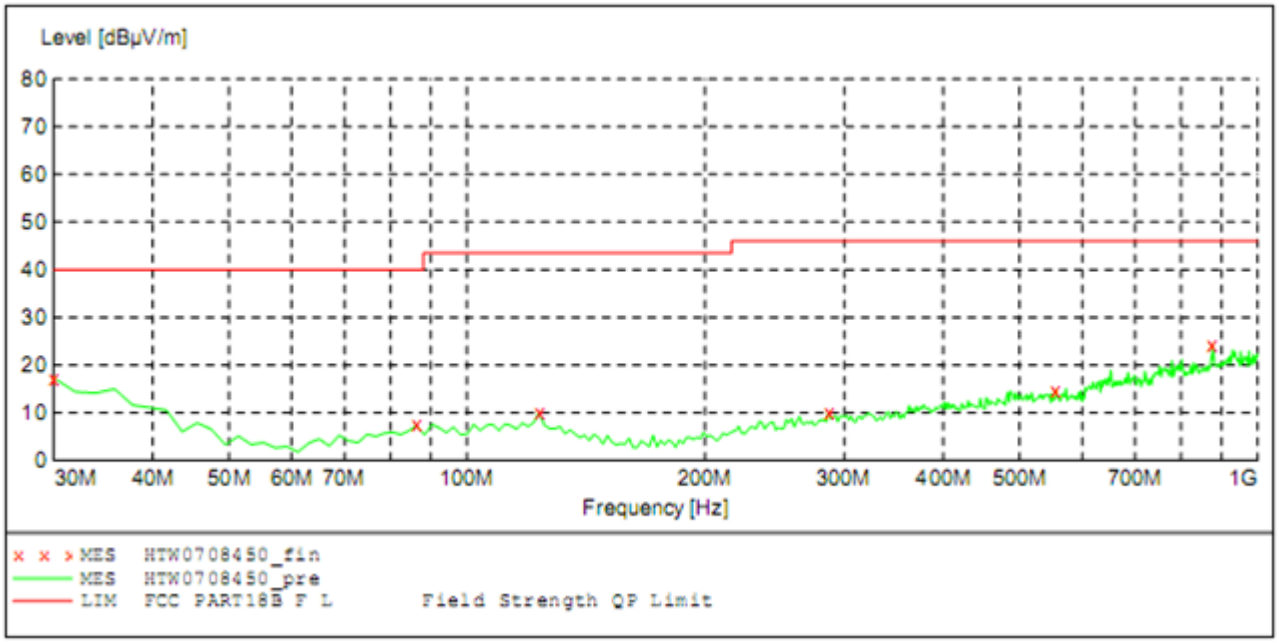


Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Dete ctor	RAW (dBuV/ m)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)	Polari-zation
30.00	17.80	40.00	22.2	100	QP	22.5	21.2	5.9	-31.80	-4.7	V
57.21	6.70	40.00	33.3	150	QP	25.3	7.2	6.0	-31.80	-18.6	V
127.19	11.40	43.50	32.1	100	QP	25.4	12.0	5.9	-31.90	-14.0	V
212.72	8.50	43.50	35	150	QP	22.6	9.5	8.4	-32.00	-14.1	V
535.41	14.50	43.50	29	150	QP	21.2	16.0	9.3	-32.00	-6.7	V
879.47	24.00	46.00	22	150	QP	26.1	20.8	8.9	-31.80	-2.1	V

Remarks: Margin=Limit—Level, Level=read values＋transducer, Transducer=Antenna Factor＋Pre-Amplifier Factor＋Cable loss

SWEEP TABLE: "test (30M-1G)"

```
Short Description:            Field Strength
Start      Stop       Detector  Meas.     IF        Transducer
Frequency  Frequency            Time      Bandw.
30.0 MHz   1.0 GHz    MaxPeak   Coupled   100 kHz   HL562 09
```



Frequency (MHz)	Emssion Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Dete ctor	RAW (dBuV/ m)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-amplifier (dB)	Correction Factor (dB/m)	Polari-zation
30.00	17.30	40.00	22.7	100	QP	22	21.2	5.9	-31.80	-4.7	H
86.37	7.40	40.00	32.6	150	QP	21.7	7.2	10.3	-31.80	-14.3	H
123.30	10.00	43.50	33.5	100	QP	23	12.0	6.9	-31.90	-13.0	H
286.59	10.00	46.00	36.0	150	QP	21.1	9.5	11.4	-32.00	-11.1	H
556.79	14.80	46.00	31.2	150	QP	21.5	16.0	9.3	-32.00	-6.7	H
877.53	24.20	46.00	21.8	150	QP	26.3	20.8	8.9	-31.80	-2.1	H

Remarks: Margin=Limit—Level, Level=read values＋transducer, Transducer=Antenna Factor＋Pre-Amplifier Factor＋Cable loss

4.2. Conducted Disturbance

For test instruments and accessories used see section 3.6.

4.2.1. Description of the test location

Test location: Shielded room No. 3

4.2.2. Limits of disturbance

Limit of Conducted Disturbance at Mains Ports

Frequency Range (MHz)	Limits (dBuV)
0.45~2.51	48
2.51~3.0	70
3.0~30.0	48

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

4.2.3. Description of the test set-up

4.2.3.1. Operating Condition

The EUT is running during the test, and the maximum emanating results are recorded.

4.2.3.2. Test Procedure

EUT is placed on a nonmetal table 0.4 meter above the grounded reference plane. The power line of the EUT is connected to the LISN which is connected to receiver by coaxial line, and then disturbance signals of the neutral line and live line can be detected by the receiver.

4.2.4. Test result

The requirements are **Fulfilled**

Band Width: 9KHz

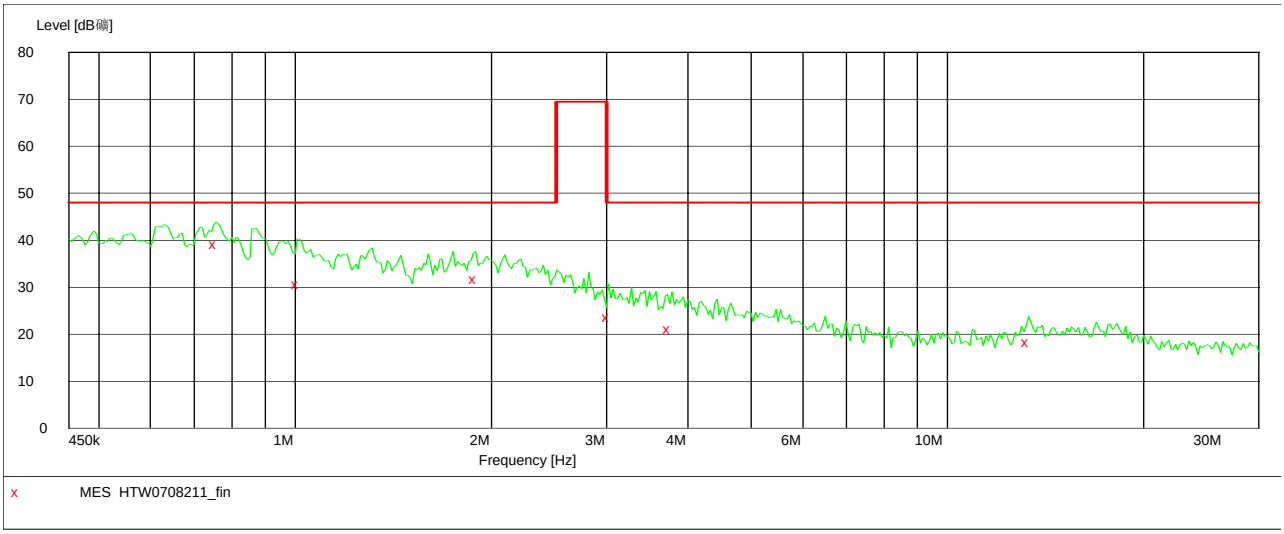
Frequency Range: 150KHz to 30MHz

Remarks: The limits are kept. For detailed results, please see the following page(s).
Margin=Limit—Level, Level=read values＋transducer, Transducer=Insertion loss of LISN＋ Cable loss＋Insertion loss of Pulse limiter

UB-ST5-11524-A-XX:

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



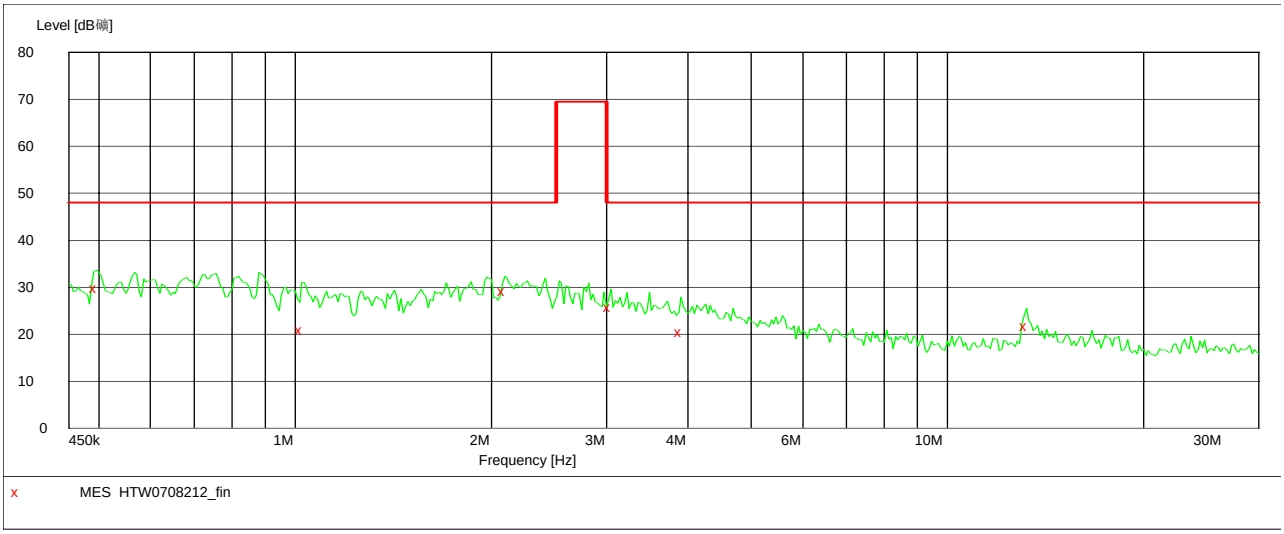
MEASUREMENT RESULT: "HTW0708211_fin"

7/8/2010 11:05AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.757500	39.10	10.1	48	8.9	QP	L1	GND
1.014000	30.60	10.2	48	17.4	QP	L1	GND
1.900500	31.70	10.2	48	16.3	QP	L1	GND
3.034500	23.70	10.2	48	24.3	QP	L1	GND
3.759000	21.10	10.2	48	26.9	QP	L1	GND
13.335000	18.30	10.5	48	29.7	QP	L1	GND

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



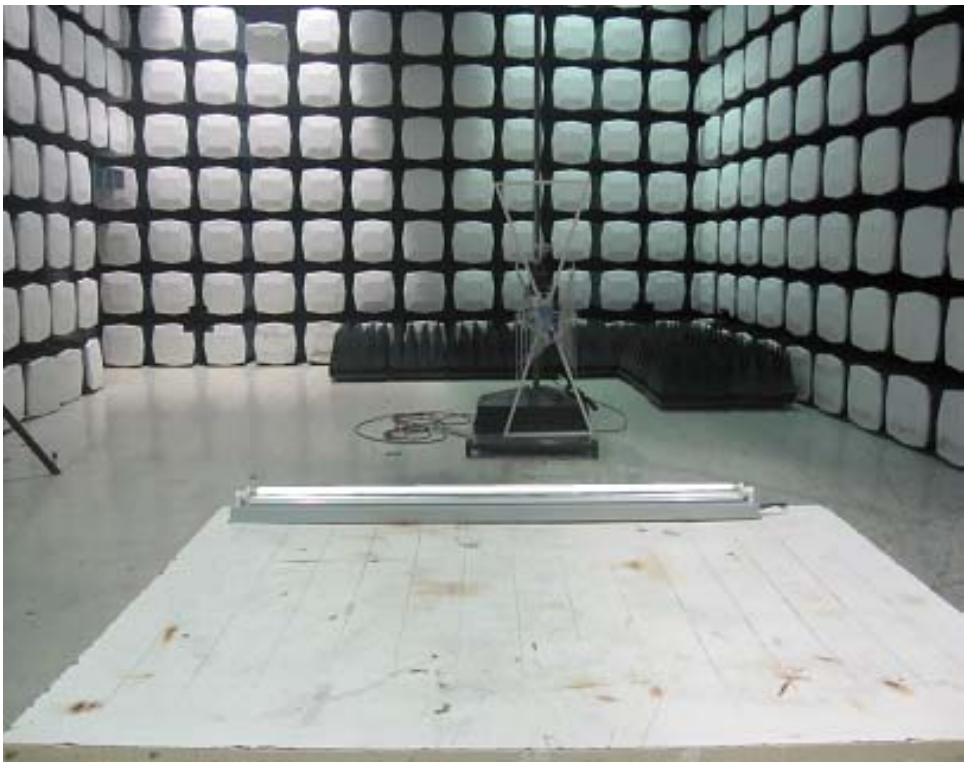
MEASUREMENT RESULT: "HTW0708212_fin"

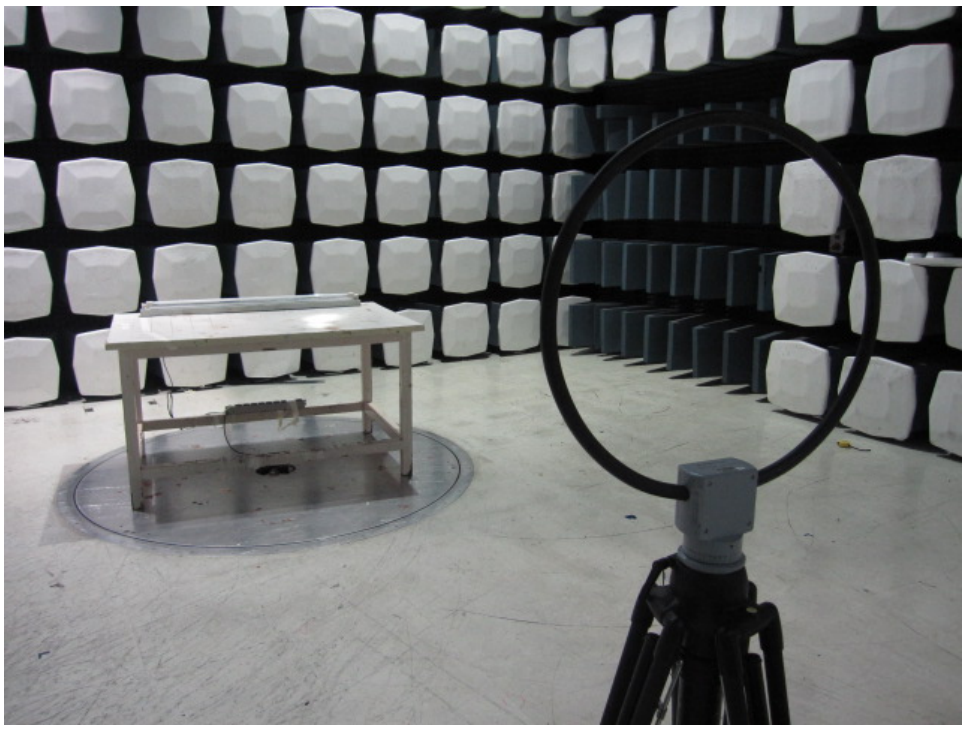
7/8/2010 11:11AM

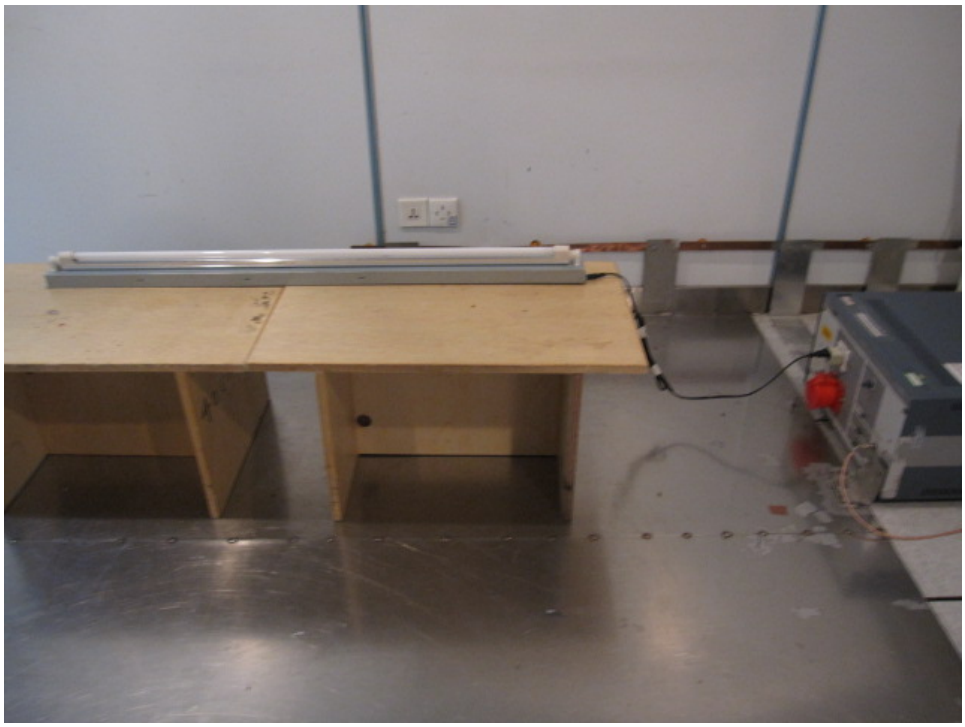
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.496500	29.90	10.1	48	18.1	QP	N	GND
1.027500	21.00	10.2	48	27.0	QP	N	GND
2.103000	29.20	10.2	48	18.8	QP	N	GND
3.052500	25.90	10.2	48	22.1	QP	N	GND
3.921000	20.50	10.2	48	27.5	QP	N	GND
13.240500	21.80	10.5	48	26.2	QP	N	GND

5. Test Set-up Photos of the EUT

UB-ST5-11524-A-XX:



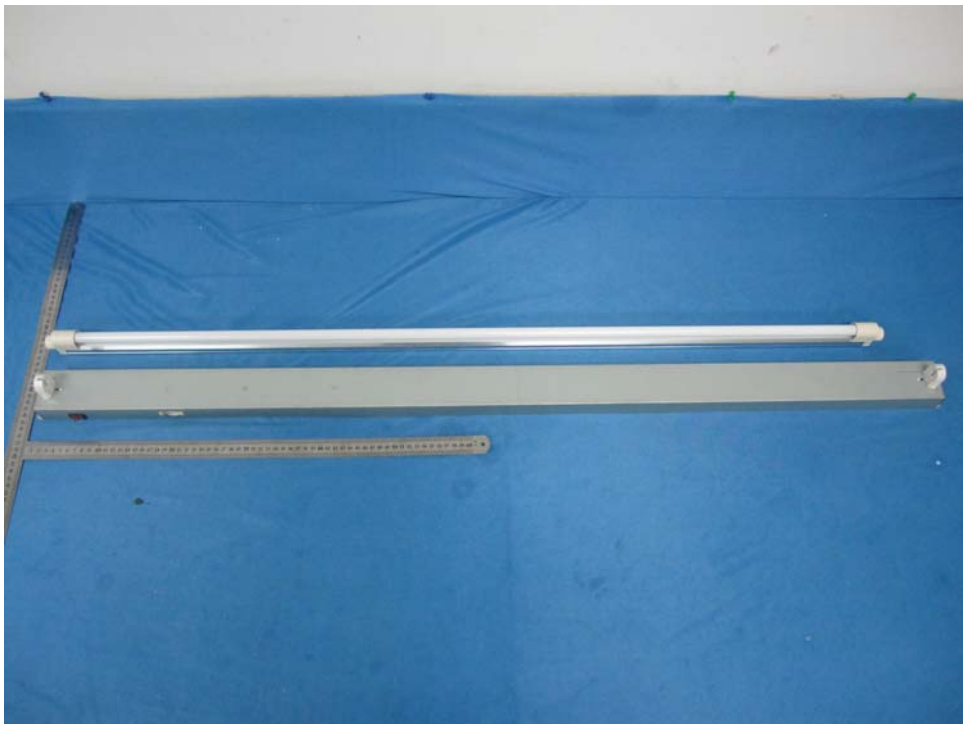


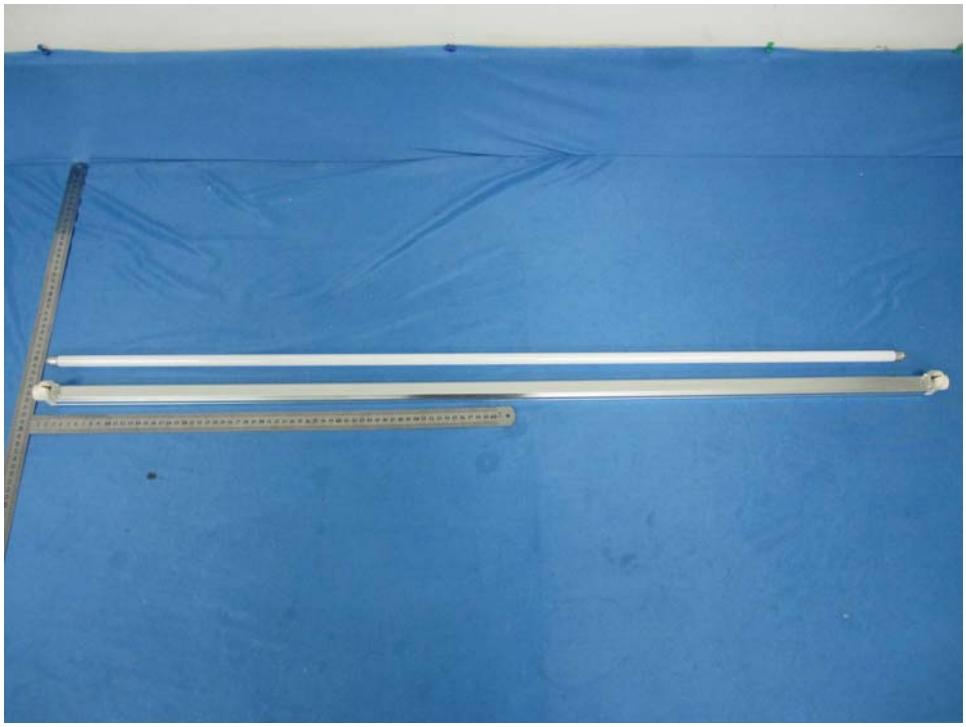


6. External and Internal Photos of the EUT

6.1. External photos of the EUT

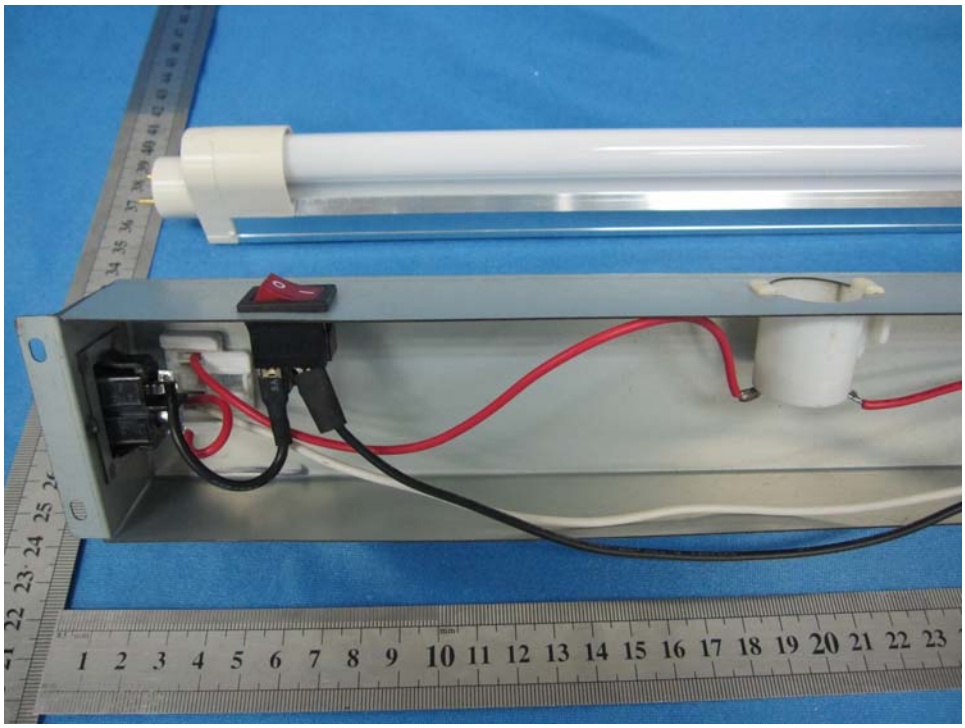
UB-ST5-11524-A-XX:

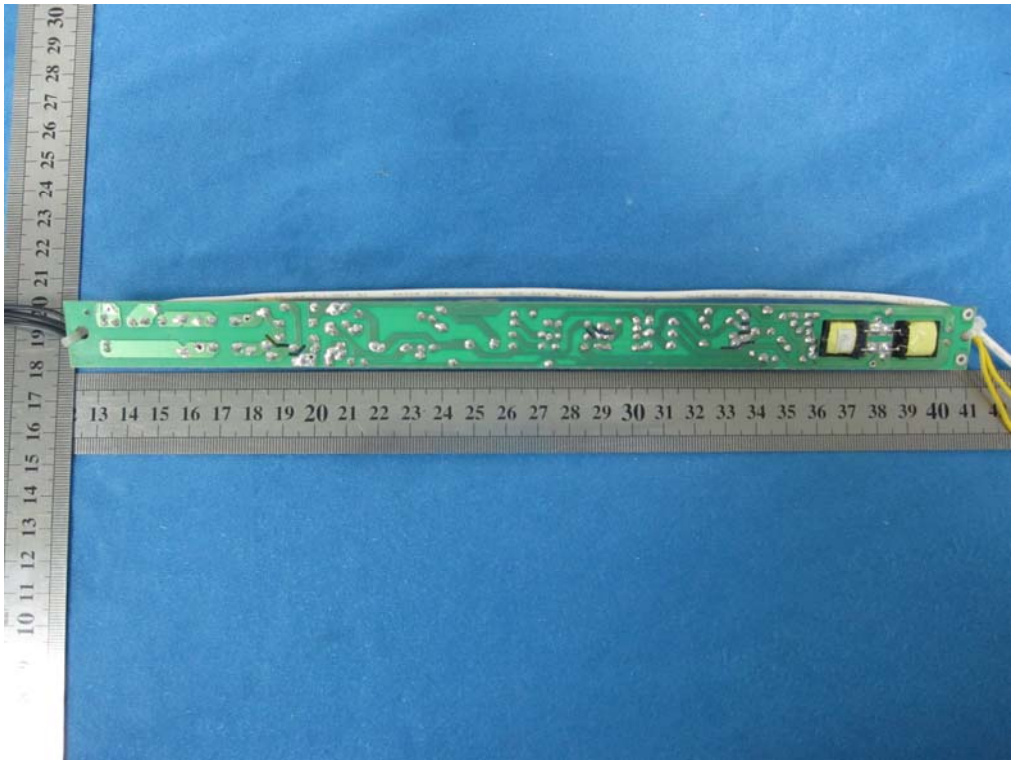




6.2. Internal photos of the EUT

UB-ST5-11524-A -XX:





..... End Of Report.....