

FCC TEST REPORT

for

Channel Well Technology Co., Ltd.

Power Adapter

Prepared for : Channel Well Technology Co., Ltd.
Address : No.222, Sec. 2, Nankan Rd., Lujhu Township,
Taoyuan Hsien 33855 Taiwan

Prepared by : EST Technology Co., Ltd.
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EST Technology Co., Ltd.

Applicant:	Channel Well Technology Co., Ltd.		
Address:	No.222, Sec. 2, Nankan Rd., Lujhu Township, Taoyuan Hsien 33855 Taiwan		
Manufacturer:	Channel Well Technology Co., Ltd.		
Address:	No.222, Sec. 2, Nankan Rd., Lujhu Township, Taoyuan Hsien 33855 Taiwan		
Factory:	Channel Well Technology(Guangzhou)Co., Ltd.		
Address:	Bld. B, Eastern Hi-tech Industrial Base, Zengjiang Street, Zengcheng, Guangzhou, Guangdong 511300, P.R. China		
E.U.T:	Power Adapter		
Model Number:	CAD030051		
Trade Name:	CWT	Serial No.:	-----
Date of Receipt:	Jul. 26, 2016	Date of Test:	Jul. 26, - 27, 2016
Test Specification:	FCC Part 15 Subpart B Class B:2016 ANSI C63.4:2014 ICES-003:2016		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied.		
Issue Date: Jul. 27, 2016			
Prepared by:	Tested by:	Approved by:	
			
Amy / Assistant	Sean / Engineer	Iceman Hu / Manager	
Other Aspects:	None.		
Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.			

1. GENERAL PRODUCT INFORMATION

1.1. Product Function

Refer to Technical Construction Form and User Manual.

1.2. Description of Device (EUT)

Description	: Power Adapter
Model No.	: CAD030051
System Input Voltage	: AC 100-240V, 50/60Hz, 1.2A
Output	: DC 5V, 6A
DC Power Cord	: Unshielded, Undetachable 0.9m

1.3. Difference between Model Numbers

None.

1.4. Independent Operation Modes

The basic operation modes are:

1.4.1. Full Load

1.4.2. Half Load

2. TEST SITES

2.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	FCC Part 15:2016 ANSI C63.4:2014 ICES-003:2016	Class B	PASS
		Minimum passing margin is 5.35dB at 0.402MHz	
Radiated Emission Test	FCC Part 15:2016 ANSI C63.4:2014 ICES-003:2016	Class B	PASS
		Minimum passing margin is 4.32dB at 46.90MHz	

2.2. Test Facilities

EMC Lab : Certificated by CNAS, CHINA
 Registration No.: L5288
 Date of registration: December 07, 2015

 Certificated by FCC, USA
 Registration No.: 989591
 Date of registration: November 20, 2013

 Certificated by Industry Canada
 Registration No.: 9405A
 Date of registration: December 03, 2015

 Certificated by VCCI, Japan
 Registration No.: R-3663 & C-4103
 Date of registration: July 25, 2014

 Certificated by TUV Rheinland, Germany
 Registration No.: UA 50195514 0001
 Date of registration: February 07, 2015

 Certificated by TUV/PS, Shenzhen
 Registration No.: SCN1017
 Date of registration: January 27, 2011

 Certificated by Intertek ETL SEMKO
 Registration No.: 2011-RTL-L2-64
 Date of registration: April 28, 2011

 Certificated by Nemko, Hong Kong
 Registration No.: 175193
 Date of registration: May 4, 2011

Name of Firm : EST Technology Co., Ltd.

Site Location : Chilingxiang, Qishantou, Santun, Houjie, Dongguan,
 Guangdong, China

2.3. List of Test and Measurement Instruments

2.3.1. For conducted emission at the mains terminals test (844 Room)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde& Schwarz	ESVS30	832354	June 25,16	1 Year
Artificial Mains Network	Rohde& Schwarz	ENV216	101260	June 25,16	1 Year
Pulse Limiter	Rohde& Schwarz	ESH3-Z2	101100	June 25,16	1 Year

2.3.2. For radiated emission test (30MHz-1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde& Schwarz	ESVS10	100004	June 25,16	1 Year
Spectrum Analyzer	Agilent	E4411B	MY50140697	June 25,16	1 Year
Bilog Antenna	Teseq	CBL 6111D	27090	June 28,15	3 Year
Signal Amplifier	Agilent	310N	187037	June 25,16	1 Year

3. TEST SET-UP AND OPERATION MODES

3.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

3.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators



(EUT: Power Adapter)

3.3. Test Operation Mode and Test Software

Refer to Test Setup in clause 4.

3.4. Special Accessories and Auxiliary Equipment

None.

3.5. Countermeasures to Achieve EMC Compliance

None.

4. EMISSION TEST RESULTS

4.1. Conducted Emission at the Mains Terminals Test

RESULT : **Pass**
Test Procedure : ANSI C63.4:2014
Frequency Range : 0.15 to 30MHz
Test Site : Shielded Room
Limits : FCC Part 15:2016 Class B

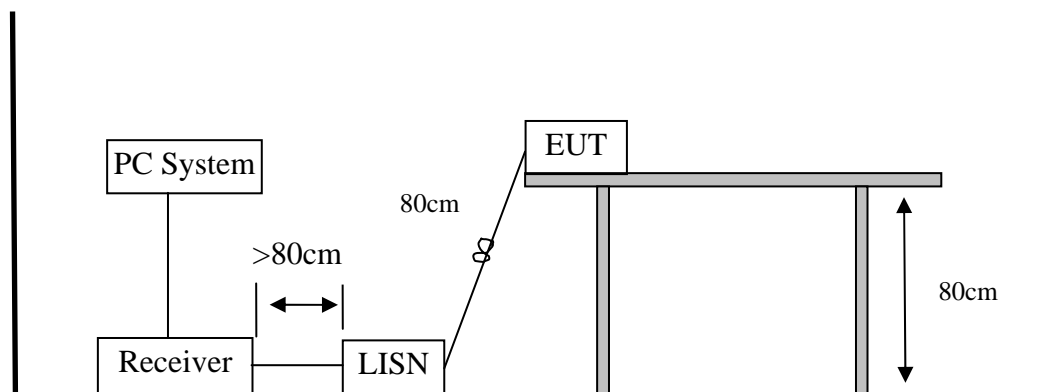
Test Setup

Date of Test : Jul. 27, 2016
M/N : CAD030051
Input Voltage : AC 120V/60Hz
Operation Mode : Half Load----worst case

The frequency range from 150 kHz to 30 MHz was investigated.

The bandwidth of the test receiver was set at 9 kHz.

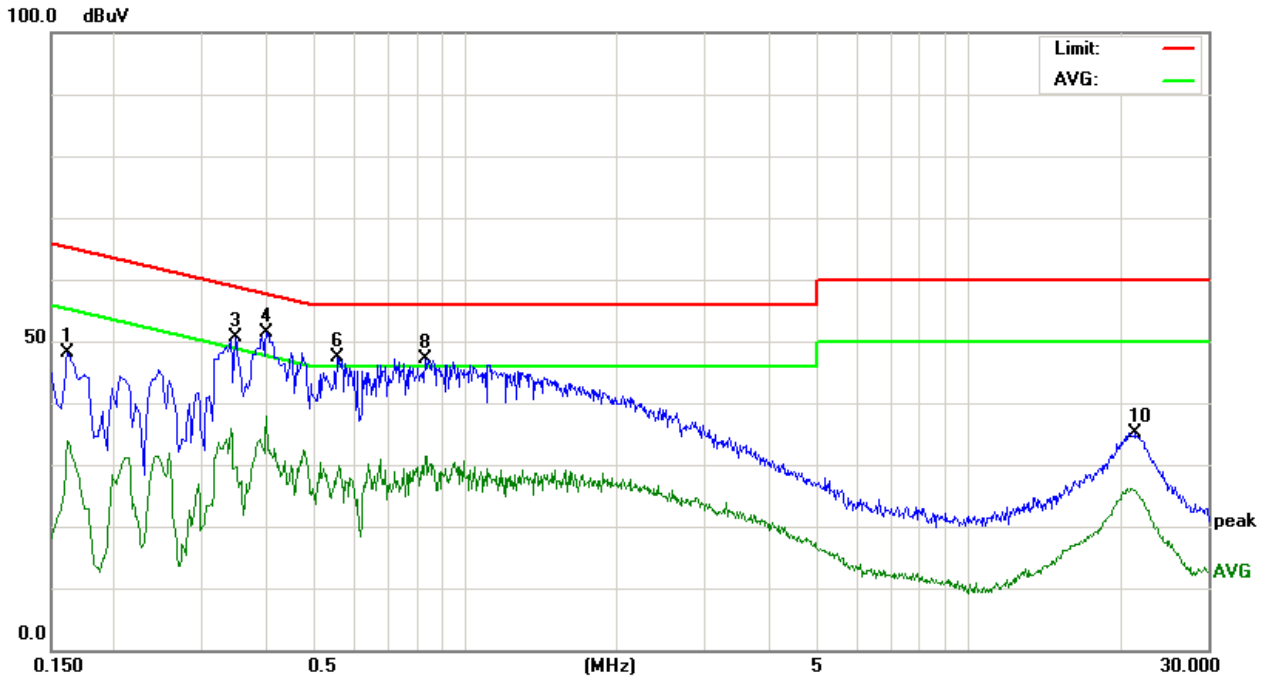
The test data of the worst case condition(s) was reported on the following page.



Note: Measurement Uncertainty: ± 2.54 dB at a level of confidence of 95%.

Test Data

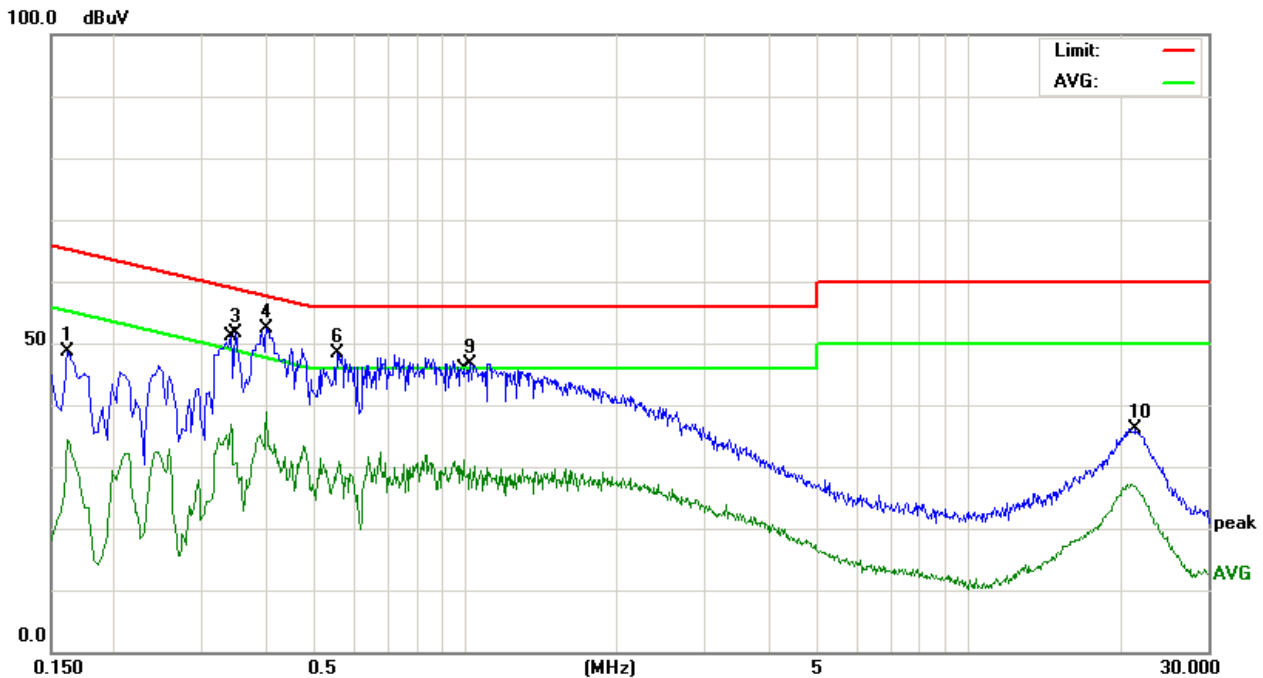
Model No.	CAD030051	6dB Bandwidth	10 kHz
Environmental Conditions	24deg.C, 60% RH, 1010hPa	Test Mode	Half Load
Tested by	Jason Lee	Phase	L1
Standard	FCC CLASS B		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.1620	37.34	10.84	48.18	65.36	-17.18	P	L1
0.3464	18.68	10.73	29.41	49.05	-19.64	A	L1
0.3500	39.91	10.72	50.63	58.96	-8.33	P	L1
0.4020	40.76	10.70	51.46	57.81	-6.35	P	L1
0.4020	27.17	10.70	37.87	47.81	-9.94	A	L1
0.5580	36.74	10.70	47.44	56.00	-8.56	P	L1
0.5580	18.30	10.70	29.00	46.00	-17.00	A	L1
0.8340	36.35	10.69	47.04	56.00	-8.96	P	L1
0.8340	20.76	10.69	31.45	46.00	-14.55	A	L1
21.5100	23.90	11.19	35.09	60.00	-24.91	P	L1

- Note:**
1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).
 2. Those frequencies only show peak emission level because that was below the Average limit, so no need to check average anymore.

Model No.	CAD030051	6dB Bandwidth	10 kHz
Environmental Conditions	24deg.C, 60% RH, 1010hPa	Test Mode	Half Load
Tested by	Jason Lee	Phase	L2
Standard	FCC CLASS B		



Conducted Emission Readings							
Frequency Range Investigated				150 kHz to 30 MHz			
Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector (P/Q/A)	Line (L1/L2)
0.1620	37.84	10.84	48.68	65.36	-16.68	P	L2
0.3420	26.26	10.73	36.99	49.15	-12.16	A	L2
0.3500	40.91	10.72	51.63	58.96	-7.33	P	L2
0.4020	41.76	10.70	52.46	57.81	-5.35	P	L2
0.4020	28.17	10.70	38.87	47.81	-8.94	A	L2
0.5580	37.74	10.70	48.44	56.00	-7.56	P	L2
0.5620	20.30	10.70	31.00	46.00	-15.00	A	L2
0.9939	20.56	10.67	31.23	46.00	-14.77	A	L2
1.0260	35.96	10.67	46.63	56.00	-9.37	P	L2
21.5100	24.90	11.19	36.09	60.00	-23.91	P	L2

Note: 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).
2. Those frequencies only show peak emission level because that was below the Average limit, so no need to check average anymore.

4.2. Radiated Emission Test

RESULT : **Pass**
Test Procedure : ANSI C63.4:2014
Frequency Range : 30 to 1000 MHz
Test Site : 10m Chamber
Limits : FCC Part 15:2016 Class B

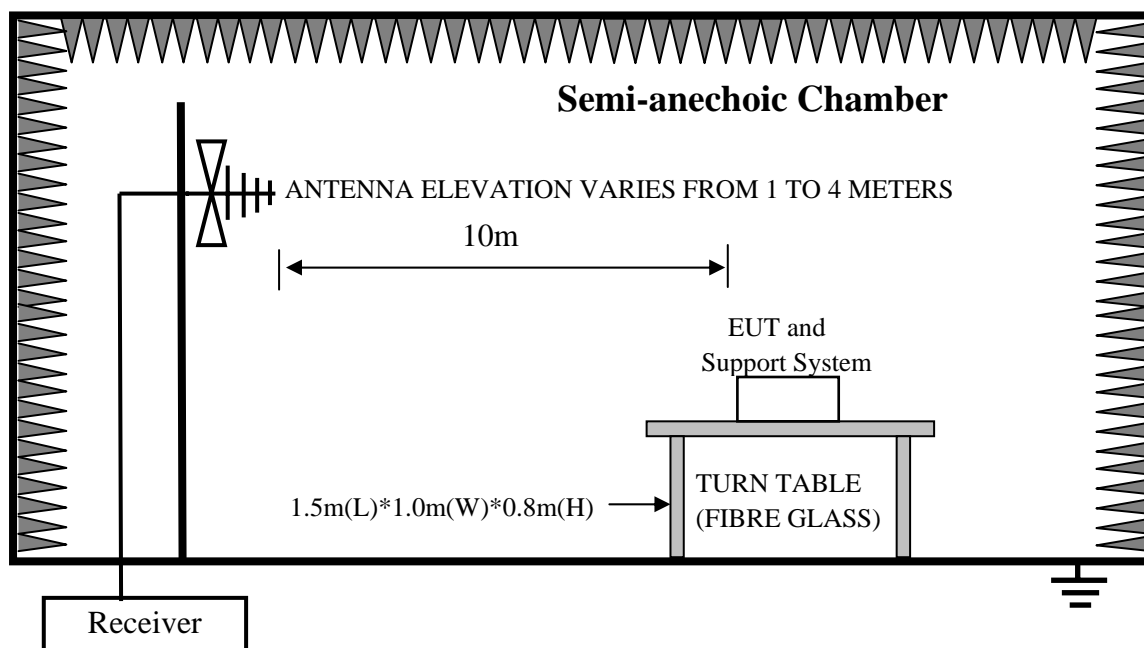
Test Setup

Date of Test : Jul. 27, 2016
M/N : CAD030051
Input Voltage : AC 120V/60Hz
Operation Mode : Full Load----worst case

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 10 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

The EUT was tested in the Chamber Site. It was pre-scanned with a Peak detector from the spectrum, and all the final readings from the test receiver were measured with the Quasi-Peak detector.

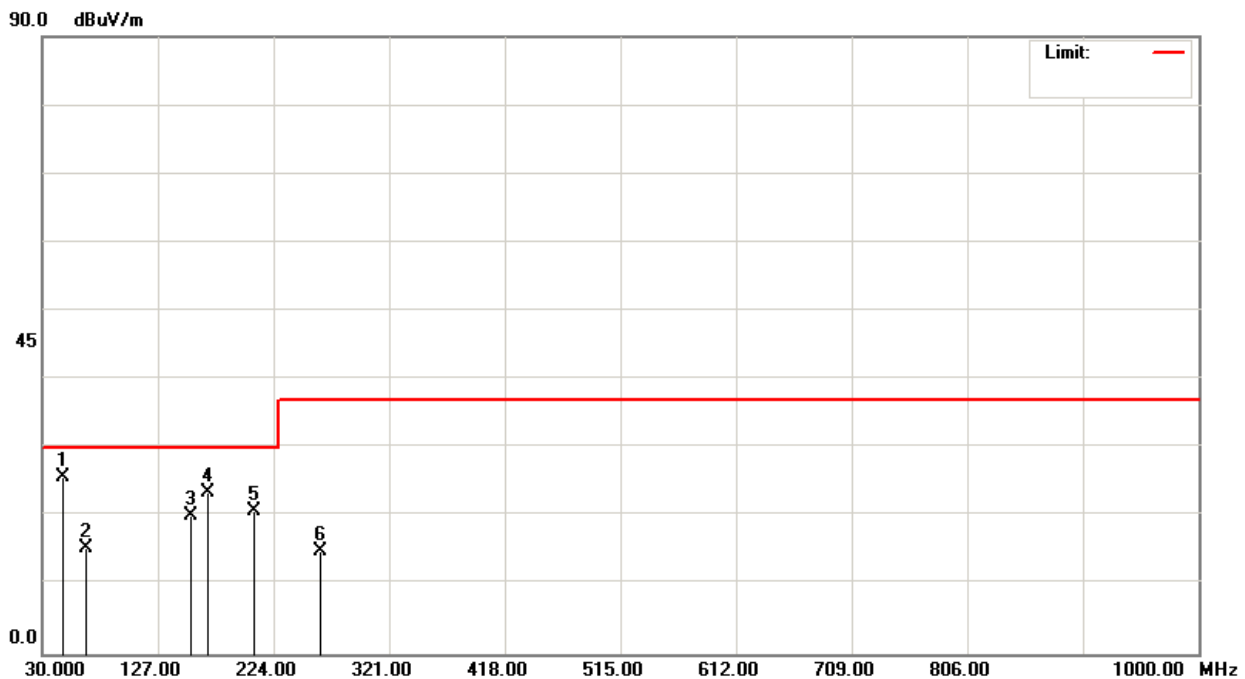
The bandwidth setting on the test receiver was 120 kHz.



Note: Measurement Uncertainty: ± 3.62 dB at a level of confidence of 95%.

Test Data

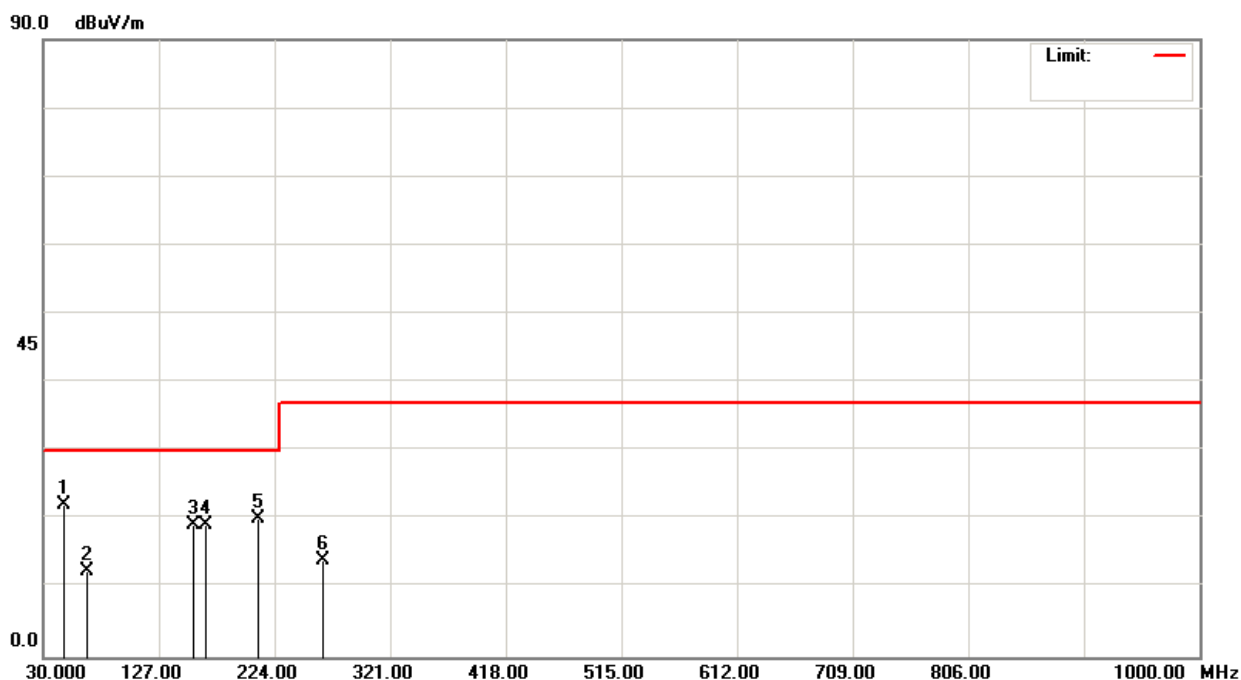
Model No.	CAD030051	Test Mode	Full Load
Environmental Conditions	22deg.C, 85% RH, 1010hPa	6dB Bandwidth	120 kHz
Antenna Pole	Vertical	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Jason Lee
Standard	FCC CLASS B W/ EN 55022 CLASS B LIMIT		



Radiated Emission Readings									
Frequency Range Investigated					30 MHz to 1000 MHz at 10m				
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
46.9000	43.40	-17.72	25.68	30.00	-4.32	100	254	Q	V
66.9000	37.40	-21.88	15.52	30.00	-14.48	100	240	Q	V
154.6000	37.10	-16.90	20.20	30.00	-9.80	100	124	Q	V
168.8000	41.10	-17.56	23.54	30.00	-6.46	100	68	Q	V
208.4000	38.40	-17.68	20.72	30.00	-9.28	100	113	Q	V
263.4000	27.89	-12.93	14.96	37.00	-22.04	100	97	Q	V

- Note:**
1. 30MHz to 1000MHz test is Applicable CISPR 22 / EN 55022 standard.
 2. The other emission levels were very low against the limit.
 3. P= Peak Reading; Q= Quasi-peak Reading.

Model No.	CAD030051	Test Mode	Full Load
Environmental Conditions	22deg.C, 85% RH, 1010hPa	6dB Bandwidth	120 kHz
Antenna Pole	Horizontal	Antenna Distance	10m
Detector Function	Quasi-peak.	Tested by	Jason Lee
Standard	FCC CLASS B W/ EN 55022 CLASS B LIMIT		



Radiated Emission Readings									
Frequency Range Investigated				30 MHz to 1000 MHz at 10m					
Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Detector (P/Q)	Pol. (H/V)
47.8000	40.11	-17.88	22.23	30.00	-7.77	100	254	Q	H
67.4000	34.28	-21.87	12.41	30.00	-17.59	100	240	Q	H
155.9000	36.18	-16.98	19.20	30.00	-10.80	100	124	Q	H
166.4000	36.71	-17.47	19.24	30.00	-10.76	100	97	Q	H
210.6000	37.89	-17.66	20.23	30.00	-9.77	100	113	Q	H
264.4000	27.11	-12.96	14.15	37.00	-22.85	100	68	Q	H

- Note:**
1. 30MHz to 1000MHz test is Applicable CISPR 22 / EN 55022 standard.
 2. The other emission levels were very low against the limit.
 3. P= Peak Reading; Q= Quasi-peak Reading.

5. PHOTOGRAPHS OF THE EUT

Figure 1
General Appearance of the EUT

