



**CENTRE OF TESTING SERVICE
INTERNATIONAL**

OPERATE ACCORDING TO ISO/IEC 17025

FCC TEST REPORT

TEST REPORT NUMBER : CGZ3150703-00761-E



CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China



TEST REPORT FOR FCC ID 47 CFR PART 18 OCT, 2014 Industrial, Scientific, and Medical Equipment	
Report Reference No.	CGZ3150703-00761-E
Date of issue	09 July 2015
Testing Laboratory Name	CENTRE OF TESTING SERVICE CO., LTD.
Address	A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China
Testing location/ procedure	Full application of Harmonised standards ☒ Partial application of Harmonised standards ☐ Other standard testing method ☐
Applicant's name	Patterson Medical Holdings, Inc.
Address	28100 Torch Parkway, Suite 700, Warrenville, IL 60555-3938
Test specification:	
Standard	47 CFR PART 18 OCT, 2014
Test Report Form No.	CTSEMC-1.0
TRF Originator	CENTRE OF TESTING SERVICE CO., LTD.
Master TRF	Dated 2009-01
CENTRE OF TESTING SERVICE CO., LTD. All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the CENTRE OF TESTING SERVICE CO., LTD. is acknowledged as copyright owner and source of the material. CENTRE OF TESTING SERVICE CO., LTD. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
Test item description	Jamar Smart Hand Dynamometer
Trade Mark	Jamar
Manufacturer	Anatomy Supply Partners, LLC
Model/Type reference	081669928
Ratings	Battery 1.5V*2
Result	PASSED

Compiled by:

Kate zhang / File administrators

Supervised by:

Duke yang / Technique principal

Approved by:

Vincent yao / Manager

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service



FCC-- TEST REPORT

Test Report No. : CGZ3150703-00761-E
09 July 2015
 Date of issue

Type / Model..... 081669928

EUT..... Jamar Smart Hand Dynamometer

Applicant..... Patterson Medical Holdings, Inc.

Address..... 28100 Torch Parkway, Suite 700, Warrenville, IL 60555-3938

Telephone..... +1-630-393-6000

Fax..... +1-630-393-7600

Contact..... George Uriniuk

Manufacturer..... Anatomy Supply Partners,LLC

Address..... 3450 Atlanta Industrial ParkwayAtlanta, GA 30331

Telephone..... +1-404-696-6999

Fax..... +1-404-699-6080

Contact..... Lorne Tritt

Factory..... /

Address..... /

Telephone..... /

Fax..... /

Contact..... /

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.



TABLE OF CONTENTS

Description	Page
1 TEST STANDARDS.....	4
2 SUMMARY	4
2.1 GENERAL REMARKS	4
2.2 FINAL ASSESSMENT	4
3 EQUIPMENT UNDER TEST	5
3.1 Power supply system utilised.....	5
3.2 Short description of the Equipment under Test (EUT).....	5
3.3 EUT operation mode	5
3.4 EUT configuration	5
4 TEST ENVIRONMENT	6
4.1 Address of the test laboratory	6
4.2 Test facility.....	6
4.3 Environmental conditions	6
4.4 Definitions of symbols used in this test report.....	6
4.5 Statement of the measurement uncertainty	6
4.6 Measurement Uncertainty	7
4.7 Test Description	7
5 TEST CONDITIONS AND RESULTS	8
5.1 Conducted disturbance	8
5.2 Radiated disturbance.....	10
6 USED TEST EQUIPMENT.....	16
7 DEVIATION TO TEST SPECIFICATIONS.....	17
8 Manufacturer/ Approval holder Declaration	17

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service



1 TEST STANDARDS

The tests were performed according to following standards:

- 47 CFR PART 18 OCT, 2014
- ANSI C63.4-2009

2 SUMMARY

2.1 GENERAL REMARKS

Date of receipt of test sample	04 July 2015
Testing commenced on	04~08 July 2015
Testing concluded on	09 July 2015

2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

- - Fulfilled.
- ☐ - **Not** fulfilled.

The equipment under test

- - Fulfils the FCC requirements cited on page 1.
- ☐ - **Does** not fulfil the FCC requirements cited on page 1.



3 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage: ☒ Battery 1.5V*2
☐ Others

3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1
Serial number: Prototype

3.3 EUT operation mode

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

☒ Normal

Operating Mode: Normal

☐ The equipment under test was operated during the measurement under the following conditions:
Test program (customer specific)

Emissions tests.....: According to 47 CFR PART 18, searching for the highest disturbance.

3.4 EUT configuration

(The CDF filled by the applicant can be viewed at the test laboratory.)

The following peripheral devices and interface cables were connected during the measurement:

Name:	/
M/N:	/
S/N:	/
Manufacturer:	/
Power Cord:	/
Certificate:	/

☐ - unscreened power cables

☐ - customer specific cables



4 TEST ENVIRONMENT

4.1 Address of the test laboratory

A101, No.65, Zhuji Road, Tianhe District, Guangzhou, Guangdong, China
 Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

4.2 Test facility

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

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD. has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on May 22, 2014.

FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE 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 No.971995, July 13, 2012.

4.3 Environmental conditions

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

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

4.4 Definitions of symbols used in this test report

- - The black square indicates that the listed condition, standard or equipment is applicable for this report.
- - The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

4.5 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 CTS 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.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service



4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	$\pm 1.22\text{dB}$	(1)
Power disturbance	30MHz~300MHz	$\pm 1.38\text{dB}$	(1)
Radiation emission (3m)	30MHz~300MHz	$\pm 3.14\text{dB}$	(1)
	300MHz~1000MHz	$\pm 3.18\text{dB}$	(1)

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

4.7 Test Description

4.7.1 Description of Standards and Results

EMISSION		
Description of Test Item	Standard	Results
Conducted Emission Test	47 CFR PART 18 OCT, 2014 ANSI C63.4: 2009	N/A
Radiated Emission Test	47 CFR PART 18 OCT, 2014 ANSI C63.4: 2009	PASSED

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

5 TEST CONDITIONS AND RESULTS

5.1 Conducted disturbance

For test instruments and accessories used see section 7 part 7.2.

5.1.1 Description of the test location

Test location: Shielded room

5.1.2 Description of the test set-up

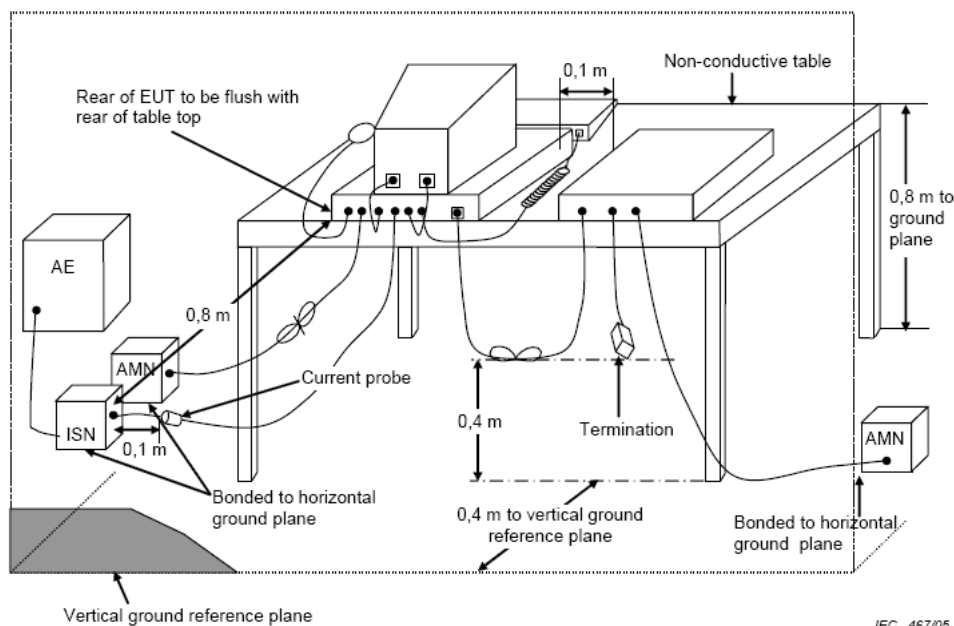
5.1.2.1 Test procedure

The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. let EUT working in test mode, then test it. 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 Part 18 on Conducted Emission Test.

The frequency range from 450kHz to 30MHz is checked

The EUT is normal during the test, and the results of the maximum emanation are recorded

5.1.2.2 Block Diagram of Test Setup



IEC 467/05

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service



5.1.3 Limits disturbance

Frequency	Maximum RF Line Voltage (dB μ V)	
	Quasi-peak Level	
450 k Hz ~ 2.51 M Hz	48	
2.51 M Hz ~ 3 M Hz	69.5	
3 M Hz ~ 30MHz	48	

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

5.1.4 Test result

The requirements are	Fulfilled
Band width	9kHz
Frequency range	0.45 MHz - 30 MHz
Min. limit margin	N/A

Remarks: The EUT power supply by battery, Not applicable.

5.2 Radiated disturbance

For test instruments and accessories used see section 6 part 6.1.

5.2.1 Description of the test location

Test location : Semi-Anechoic chamber

Test disturbance: 3 Meter

5.2.2 Description of the test set-up

5.2.2.1 Test procedure

The 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. The EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to FCC Part 18 on radiated emission Test.

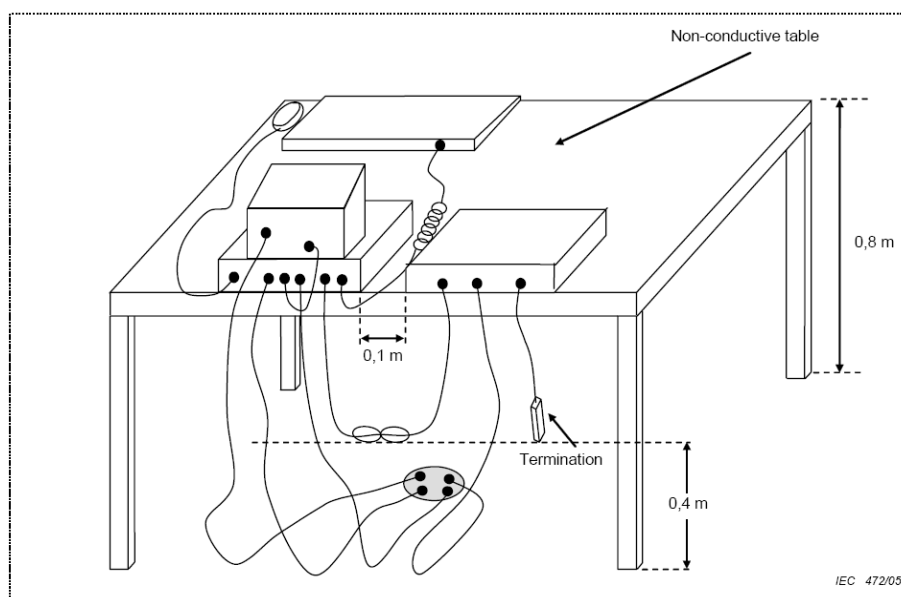
The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 120kHz RBW below 1GHz .

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 300kHz VBW below 1GHz.

The EUT is normal during the test, and the results of the maximum emanation are recorded

5.2.2.2 Block Diagram of Test Setup



Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**5.2.3 Limits of disturbance (FCC Part 18)**

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

5.2.4 Test result

The requirements are	Fulfilled
Band width	120kHz
Frequency range	30MHz – 1GHz
Min. limit margin	>19.05 dB at 30MHz – 1GHz

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

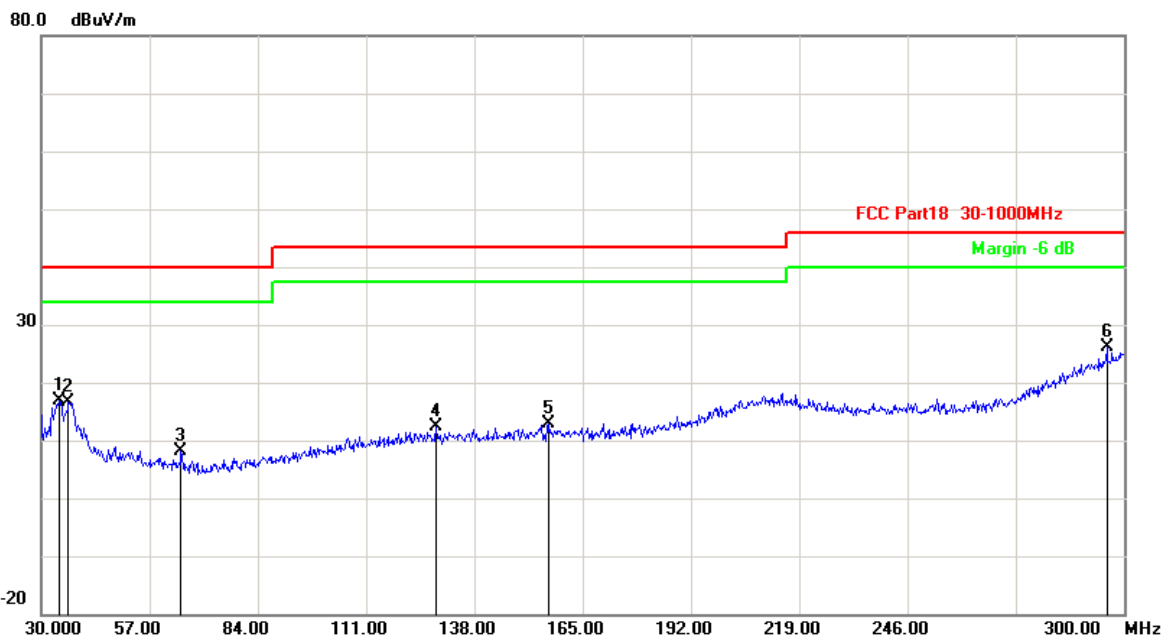
Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

Test point:	Horizontal	Result:	■ – passed
Test Model:	Normal		□ - not passed
Remarks:			

EUT	Jamar Smart Hand Dynamometer
MODEL NO.	081669928
Operating Condition	AC 120V,60Hz,35W
Test Condition	Ambient Temperature: 24°C Humidity: 56%
Operator	Duke



No.	Frequency (MHz)	Factor (dB/m)	Reading (dB μ V)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	34.5900	-16.63	33.50	16.87	40.00	-23.13	QP
2	36.7500	-16.91	33.46	16.55	40.00	-23.45	QP
3	64.8300	-20.21	28.37	8.16	40.00	-31.84	QP
4	128.2800	-16.24	28.73	12.49	43.50	-31.01	QP
5	156.6300	-15.97	28.86	12.89	43.50	-30.61	QP
6	295.6800	-2.56	28.79	26.23	46.00	-19.77	QP

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

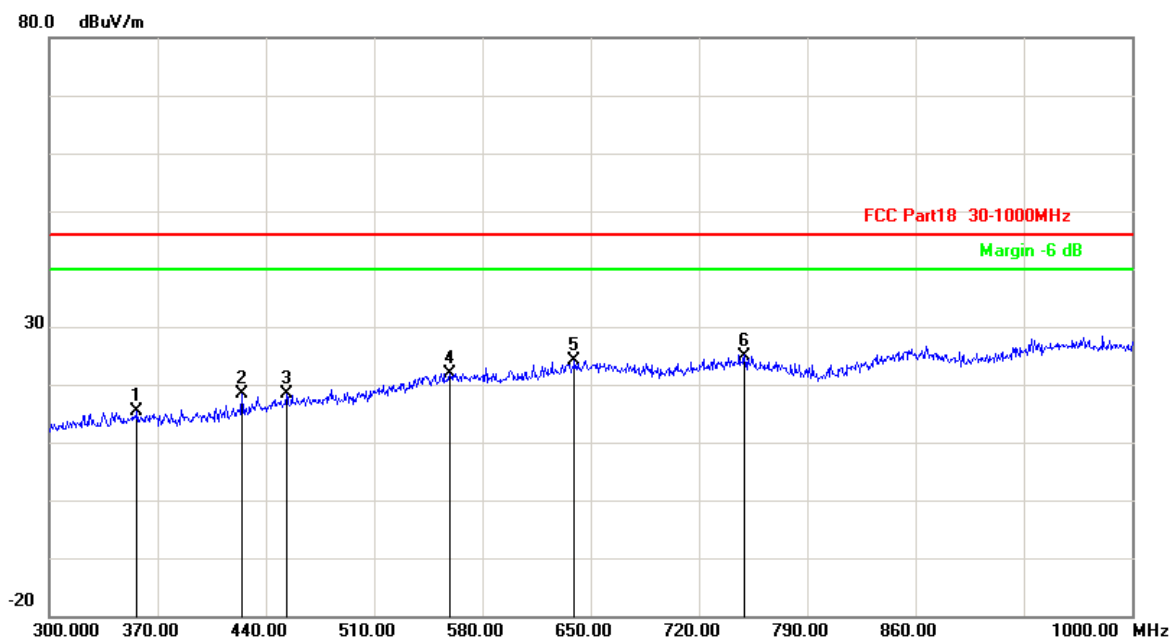
Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBμV)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	356.7000	-11.24	26.63	15.39	46.00	-30.61	QP
2	424.6000	-9.50	27.84	18.34	46.00	-27.66	QP
3	453.3000	-8.44	26.81	18.37	46.00	-27.63	QP
4	559.0000	-5.66	27.64	21.98	46.00	-24.02	QP
5	639.5000	-3.72	27.93	24.21	46.00	-21.79	QP
6	749.4000	-1.63	26.63	25.00	46.00	-21.00	QP

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

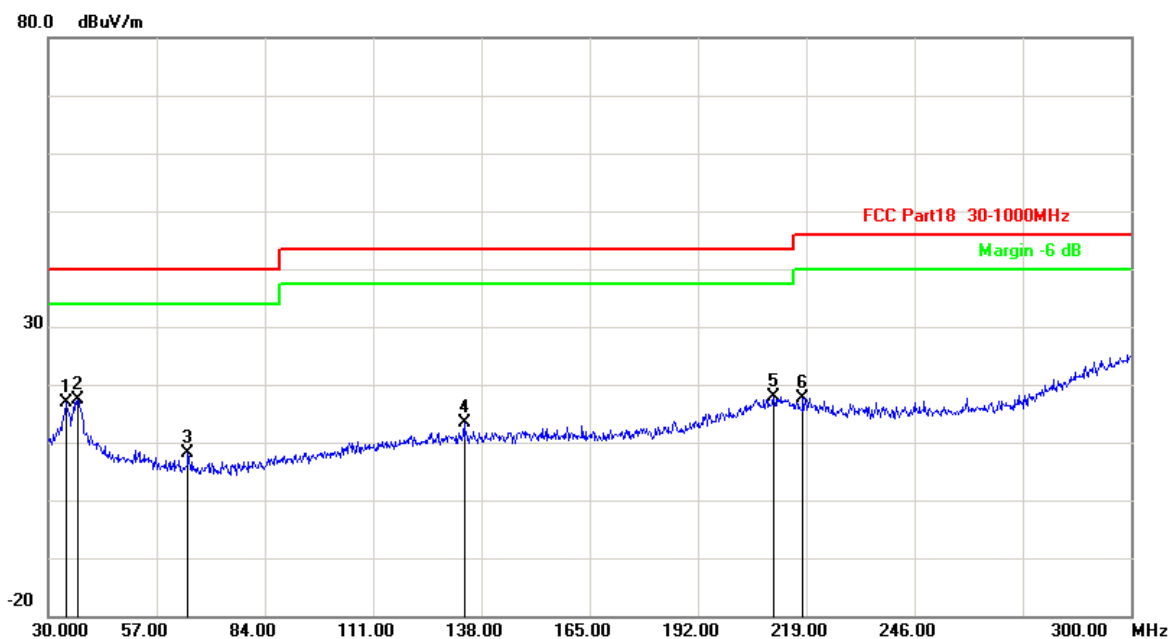
Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

Test point:	Vertical	Result:	■ – passed
Test Model:	Normal		□ - not passed
Remarks:			

EUT	Jamar Smart Hand Dynamometer
MODEL NO.	081669928
Operating Condition	AC 120V,60Hz
Test Condition	Ambient Temperature: 24°C Humidity: 56%
Operator	Duke



No.	Frequency (MHz)	Factor (dB/m)	Reading (dB μ V)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	34.5900	-16.63	33.52	16.89	40.00	-23.11	QP
2	37.2900	-16.98	34.41	17.43	40.00	-22.57	QP
3	64.8300	-20.21	28.42	8.21	40.00	-31.79	QP
4	133.6800	-16.11	29.58	13.47	43.50	-30.03	QP
5	210.9000	-10.26	28.17	17.91	43.50	-25.59	QP
6	218.1900	-10.79	28.48	17.69	46.00	-28.31	QP

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

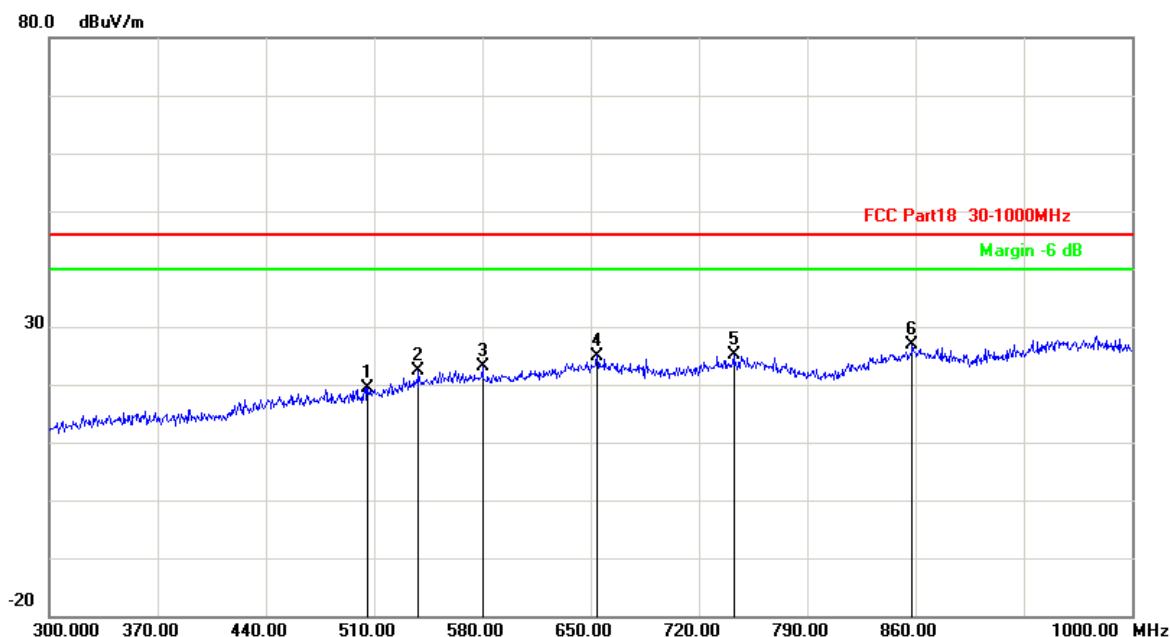
Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service



No.	Frequency (MHz)	Factor (dB/m)	Reading (dB μ V)	Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
1	505.8000	-7.84	27.30	19.46	46.00	-26.54	QP
2	538.7000	-6.23	28.58	22.35	46.00	-23.65	QP
3	580.0000	-5.60	28.70	23.10	46.00	-22.90	QP
4	654.2000	-3.27	28.27	25.00	46.00	-21.00	QP
5	742.4000	-1.92	27.01	25.09	46.00	-20.91	QP
6	857.9000	-0.53	27.48	26.95	46.00	-19.05	QP

Note: Level=Reading+Factor. Margin= Level-Limit.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service



6 USED TEST EQUIPMENT

6.1					
Radiated disturbance (Electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03/24
2	EMI Test Receiver	ROHDE & SCHWARZ	ESVS 10	842885/001	2014/11/04
3	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2015/03/24
4	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2015/03/24
5	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2015/03/24
6	Pre-Amplifier	EMC	EMC330	980113	2015/03/24
7	Pre-Amplifier	EMC	EMC012645	980114	2015/03/24
8	EMI Test Software	Farad	EZ-EMC	N/A	N/A

6.2					
Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2014/11/04
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2014/11/04
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	100140	2014/11/04
4	Pulse Limiter	ROHDE & SCHWARZ	ESHS-Z2	100301	2014/11/04
5	EMI Test Software	Farad	EZ-EMC	N/A	N/A

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, Guangdong, China

Tel: +86-20-85543113 (32 lines)

Fax: +86-20-38780406

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service



7 DEVIATION TO TEST SPECIFICATIONS

1. 47 CFR Part 18: OCT, 2014

Industrial, Scientific, and Medical Equipment

2. ANSI C63.4 : 2009

American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

8 Manufacturer/ Approval holder Declaration

The following identical model(s):

N/A

Belong to the tested device:

Magnifier Lamp : **Jamar Smart Hand Dynamometer**
Model name: **081669928**