FCC TEST REPORT

CATEGORY	:	Portable
PRODUCT NAME	:	Wireless Presenter
FCC ID.	:	OR7GP103T
FILING TYPE	:	Certification
BRAND NAME	:	GLOBLINK, TARGUS, HAMA, TRUST, SKYWAY, VIVANCO, MASTER CHOICE, MOTOROLA, LEADERSHIP, OFFICE DEPOT, CENTRIOS, PLANT21
MODEL NAME	:	GP-103T
APPLICANT	:	**Globlink Technology Inc.** 2F., 101, Rui-hu Street Nei-hu (114), Taipei, Taiwan.
MANUFACTURER	:	**Globlink Technology Inc.** 2F., 101, Rui-hu Street Nei-hu (114), Taipei, Taiwan.
ISSUED BY	:	**SPORTON INTERNATIONAL INC.** 6F, No. 106, Sec. 1, Hsin Tai Wu Rd., His Chih, Taipei Hsien, Taiwan, R.O.C.

Statements:

The test result in this report refers exclusively to the presented test model / sample.
Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

Certificate or Test Report could not be used by the applicant to claim the product endorsement by CNLA and any agency of U.S. government.

The test equipments used to perform the test are calibrated and traceable to NML/ROC or NIST/USA.

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HISTORY OF THIS TEST REPORT

Received Date: Feb. 01, 2005
Test Date: Feb. 16, 2005
Original Report Issue Date: Feb. 17, 2005
Report No.: FR483130-01

■ No additional attachment.
☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

CERTIFICATE OF COMPLIANCE

with

47 CFR FCC Part 15 Subpart C

PRODUCT NAME	:	Wireless Presenter
BRAND NAME	:	GLOBLINK, TARGUS, HAMA, TRUST, SKYWAY, VIVANCO, MASTER CHOICE, MOTOROLA, LEADERSHIP, OFFICE DEPOT, CENTRIOS, PLANT21
MODEL NAME	:	GP-103T
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MANUFACTURER	:	**Globlink Technology Inc.** 2F., 101, Rui-hu Street Nei-hu (114), Taipei, Taiwan.

I **HEREBY** CERTIFY THAT:

The measurements shown in this test report were made in accordance with the procedures given in ANSI C63.4-2003 and all test are performed according to 47 CFR FCC Part 15 Subpart C. Testing was carried out on Feb. 16, 2005 at SPORTON International Inc. LAB.

Dr. Alan Lane
Vice General Manager
Sporton International Inc.

1. General Description of Equipment under Test

1.1. Applicant

Globlink Technology Inc.
2F., 101, Rui-hu Street Nei-hu (114), Taipei, Taiwan.

1.2. Manufacturer

Globlink Technology Inc.
2F., 101, Rui-hu Street Nei-hu (114), Taipei, Taiwan.

1.3. Basic Description of Equipment under Test

This product is a wireless presenter. The technical data has been listed on section " Feature of Equipment under Test ". This product is used to wirelessly control the present material in the PC. It is produced to replace the function of the mouse and part of the keyboard. The transmitter is battery powered.

1.4. Features of Equipment under Test

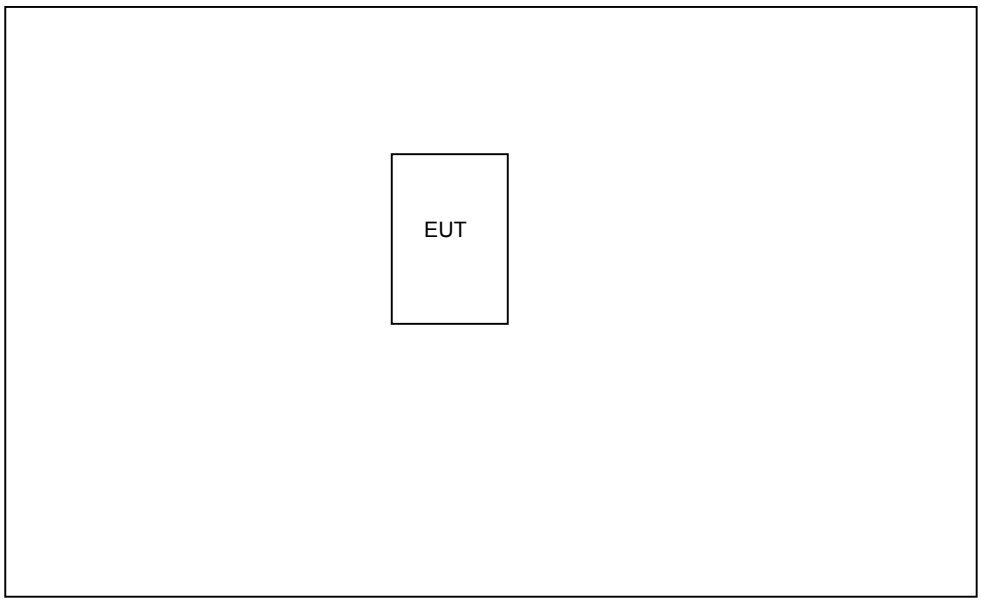
ITEMS	DESCRIPTION
Type of Modulation	GFSK
Number of Channels	8
Operating Frequency Band	2423 ~ 2477MHz
Function Type	Transmitter
Power Rating (DC/AC, Voltage)	3 VDC from battery
Duty Cycle	N.A.
Humidity Range	60% ~ 95%
Temperature Range (Operating)	0 ~ 55℃

1.5. Table for Carrier Frequencies

Channel	Frequency	Channel	Frequency
01	2423 MHz	05	2454.5 MHz
02	2431 MHz	06	2462 MHz
03	2439 MHz	07	2469.5 MHz
04	2447 MHz	08	2477 MHz

2. Test Configuration of the Equipment under Test

2.1. Connection Diagram of Test System



2.2. The Test Mode Description

1. The EUT has been programmed to continuously transmit or receive during testing. The used peripherals as well as the configuration fulfill the requirements of ANSI C63.4:2001.
2. The spurious above 1GHz, the following 3 modes for EUT placement was tested for ch1, ch4 and ch8.
   Mode 1: X axis
   Mode 2: Y axis
   Mode 3: Z axis
3. For spurious emission below 1GHz, they are independent of channel selection, so only channel 8 was tested.
4. The configuration is operated in a manner which tends to maximize its emission characteristics in a typical application.
5. 3 meters measurement distance in semi-anechoic chamber was used in this test.

2.3. Description of Test Supporting Units

Support Unit 1. – P.C. (HP)

FCC ID	: N/A
Model No.	: DC579AV
Power Supply Type	: Switching
Power Cord	: Non-Shielded
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

Support Unit 2. -- Printer (EPSON)

FCC ID	: N/A
Model No.	: Stylus Color 680
Power Supply Type	: Switching
Power Cord	: Non-Shielded
Serial No.	: SP0016
Data Cable	: Shielded, 360 degree via metal backshells, 1.35m
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

Support Unit 3. – Modem (ACEEX)

FCC ID	: IFAXDM141
Model No.	: OM141
Serial No.	: N/A
Remark	: This support device was tested to comply with FCC standards and authorized under Declaration of Conformity.

3. General Information of Test

3.1. Test Facility

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.
: TEL 886-3-327-3456
: FAX 886-3-318-0055
Test Site No : 03CH03-HY / CO04-HY

3.2. Standards for Methods of Measurement

Here is the list of the standards followed in this test report.
ANSI C63.4-2003
47 CFR FCC Part 15 Subpart C

3.3. DoC Statement

This EUT is also classified as a device of computer peripheral Class B which DoC has to be followed. It has been verified according to the rule of 47 CFR part 15 Subpart B, and found that all the requirements has been fulfilled.

3.4. Frequency Range Investigated

Radiated emission test: from 30 MHz to 10th carrier harmonic.

3.5. Test Distance

The test distance of radiated emission (30MHz~1GHz) test from antenna to EUT is 3 M.
The test distance of radiated emission (1GHz~10th carrier harmonic) test from antenna to EUT is 3 M.

3.6. Test Software

There is an reset button on the transmitter, we can change the channel from this reset button.

An executive programs, EMCTEST.EXE under WIN XP, which generate a complete line of continuously repeating " H " pattern was used as the test software.

The program was executed as follows:
a. Turn on the power of all equipment.
b. The PC reads the test program from the hard disk drive and runs it.
c. The PC sends " H" messages to the monitor, and the monitor displays " H " patterns on the screen.
d. The PC sends " H " messages to the printer, then the printer prints them on the paper.
e. The PC sends " H " messages to the internal Hard Disk, and the Hard Disk reads and writes the message.
a. Repeat the steps from c to e.

At the same time, "Press Key " was executed to keep transmitting signals and the receiver reads message in EUT.

4. List of Measurements

4.1. Summary of the Test Results

Applied Standard: 47 CFR FCC Part 15 Subpart C			
Paragraph	**FCC Rule**	**Description of Test**	**Result**
5.1	15.249(a)	Maximum Field Strength of Fundamental	Pass
5.2	15.207	AC Power Line Conducted Emission	Pass
5.3	15.249(d)	Spurious Radiated Emission	Pass
5.4	15.203	Antenna Requirement	Pass

5. Test Result

5.1. Test of Maximum Field Strength of Fundamental

5.1.1. Applicable Standard

Section 15.249(a): The field strength of emissions within these bands specified at a distance of 3 meters (measurement instrumentation employing an average detector) shall comply with the following table. The peak field strength of any emission shall not exceed the maximum permitted average limits specified in the table by more than 20 dB under any condition of modulation

Fundamental Frequency (MHz)	Field Strength of Fundamental (millivolts/meter)	Unwanted Emission (microvolts/meter)
2400-2483.5	50	500
5725-5875	50	500

5.1.2. Measuring Instruments

Item 6~17 of the table is on section 6.

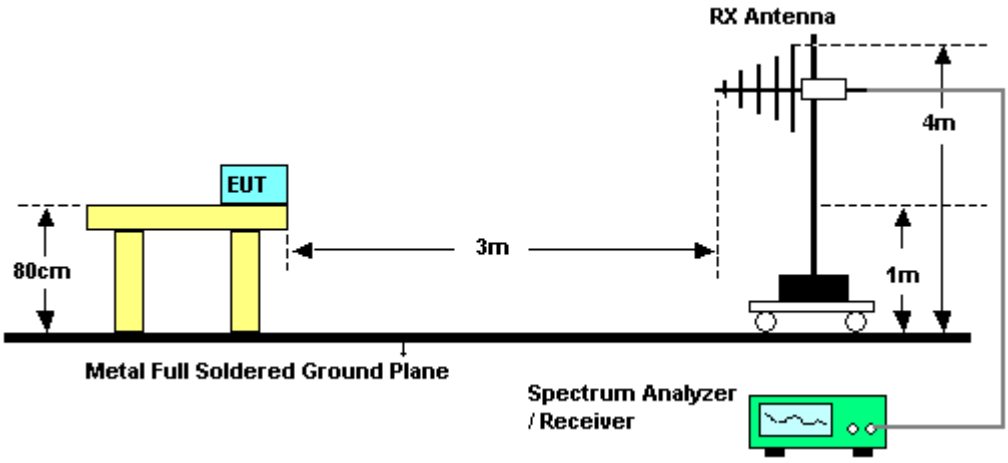
5.1.3. Description of Major Test Instruments Setting

- Spectrum Analyzer : R&S FSP40 (Radiated Measurement)
  Attenuation : Auto
  Center Frequency : Carrier Frequency
  Span Frequency : Suitable for observe
  RB : 1 MHz for PK value / 1 MHz for AV value
  VB : 1 MHz for PK value / 10 Hz for AV value
  Detector : Peak
  Trace : Max Hold
  Sweep Time : Auto

5.1.4. Test Procedures

1. Configure the EUT according to ANSI C63.4.
2. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.
4. For carrier field strength emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. For carrier field strength emission, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.

5.1.5. Test Setup Layout

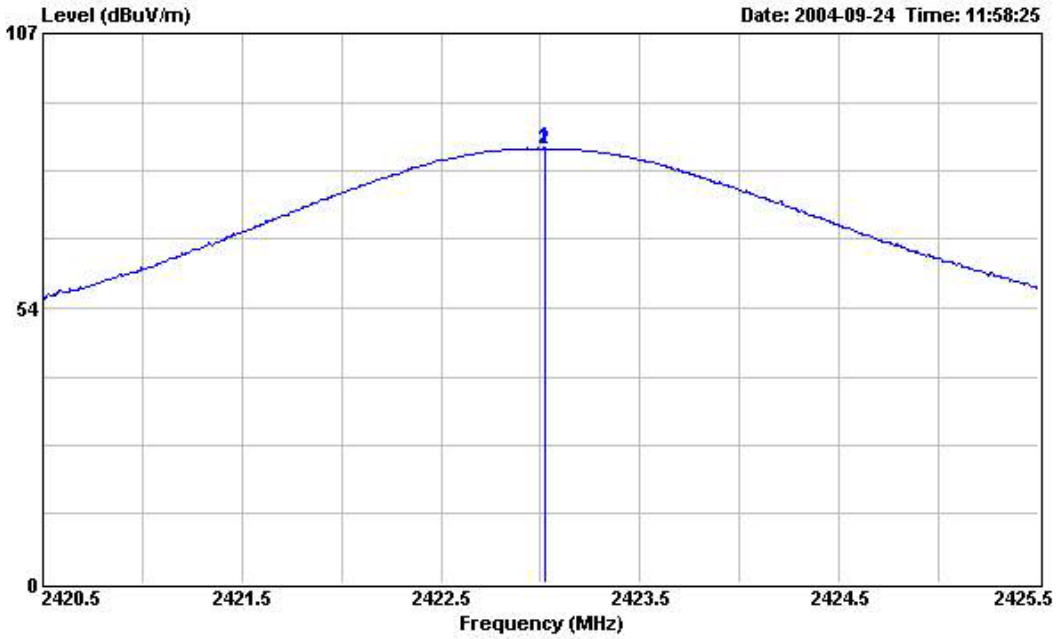


5.1.6. Test Criteria

All test results complied with the requirements of Section 15.249(a). Measurement Uncertainty is 2.26dB.

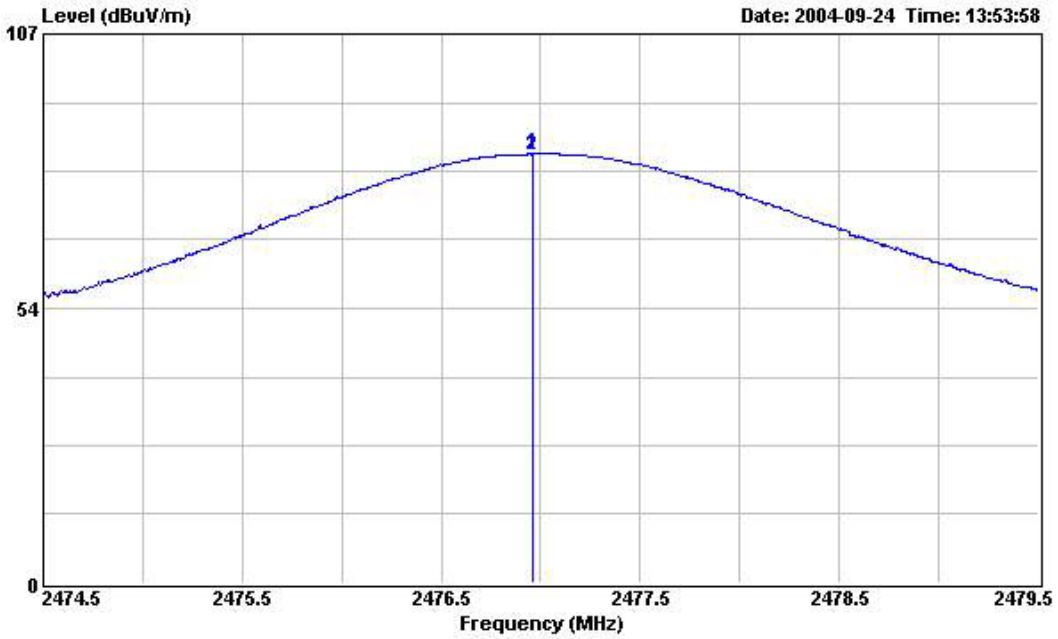
5.1.7. Test Result

Test Channel	CH 01	Temperature	23 deg. C	Tested By	Steve Chen
Frequency	2423MHz	Humidity	61%		



Frequency (MHz)	Level (dBuV/m)	Read Level (dBuV)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Limit Line (dBuV/m)	Detect Mode
2423.020	84.68	54.58	28.35	1.75	0.00	114	Peak
2423.020	84.31	54.21	28.35	1.75	0.00	94	AV

Test Channel	CH 08	Temperature	23 deg. C	Tested By	Steve Chen
Frequency	2477MHz	Humidity	61%		



Frequency (MHz)	Level (dBuV/m)	Read Level (dBuV)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Limit Line (dBuV/m)	Detect Mode
2476.960	83.61	53.36	28.46	1.79	0.00	114	Peak
2476.960	83.28	53.03	28.46	1.79	0.00	94	AV

Note:
Correct Factor = Antenna Factor + Cable Loss - Preamp Factor.
Read Level = Level of Receiver or Spectrum.
Level = Read Level + Correct Factor.

5.2. Test of AC Power Line Conducted Emission

The transmitter is battery powered, there is no need to do this testing.

5.3. Test of Spurious Radiated Emission

5.3.1. Applicable Standard

Section 15.249(d): Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

5.3.2. Measuring Instruments

Please reference item 1~17 in chapter 6 for the instruments used for testing.

5.3.3. Description of Major Test Instruments Setting

- Amplifier (HP 8447D)
  RF Gain 25 dB
  Signal Input 0.1 MHz -1.3 GHz

- Spectrum Analyzer (R&S FSP40)
  Attenuation 10 dB
  Start Frequency 1 GHz
  Stop Frequency 18 GHz
  Resolution Bandwidth 1 MHz
  Video Bandwidth 1 MHz
  Signal Input 9 KHz to 40 GHz

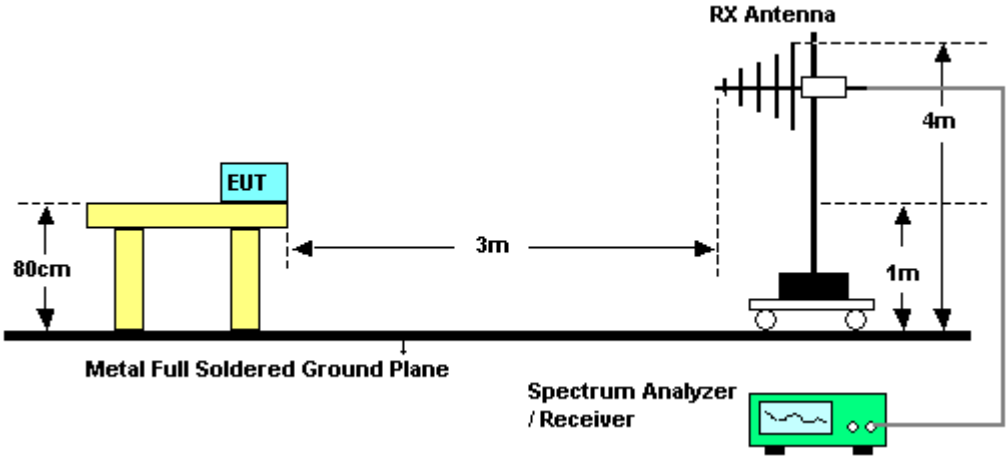
- Amplifier (MITEQ AFS44)
  RF Gain 40 dB
  Signal Input 100 MHz -26.5 GHz

5.3.4. Test Procedures

1. Configure the EUT according to ANSI C63.4.
2. The EUT was placed on the top of the turntable 0.8 meter above ground.
3. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
4. Power on the EUT and all the supporting units.
5. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
6. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of both horizontal and vertical polarization.
7. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
8. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.

9. For emission above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
10. If the emission level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz and average method for above the 1GHz. the reported.
11. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB higher than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

5.3.5. Test Setup Layout



5.3.6. Test Criteria

All test results complied with the requirements of Section 15.249(d). Measurement Uncertainty is 2.26dB.

5.3.7. Test Results

Note:
Emission level (dBuV/m) = 20 log Emission level (uV/m)
Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

Test Mode	Mode 1 (CH08)	**Temperature**	23 deg. C	**Tested By**	Ted Chiu
Freq. Range	30MHz~1GHz	**Humidity**	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	52.270	8.77	-31.23	40.00	27.71	11.20	0.00	30.14	Peak	---	---
2	169.740	11.41	-32.09	43.50	27.68	13.64	0.00	29.91	Peak	---	---
3	194.390	12.64	-30.86	43.50	27.86	15.35	0.00	30.57	Peak	---	---
1	324.000	12.99	-33.01	46.00	29.11	14.54	0.00	30.66	Peak	---	---
2	467.200	17.97	-28.03	46.00	32.98	16.26	0.00	31.27	Peak	---	---
3	858.400	19.14	-26.86	46.00	27.57	21.78	0.00	30.21	Peak	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	46.830	12.99	-27.01	40.00	31.15	12.02	0.00	30.18	Peak	---	---
2	119.590	10.14	-33.36	43.50	28.58	11.85	0.00	30.29	Peak	---	---
3	179.430	17.18	-26.32	43.50	33.00	14.20	0.00	30.02	Peak	---	---
1	416.800	13.87	-32.13	46.00	27.85	16.66	0.00	30.64	Peak	---	---
2	659.200	18.41	-27.59	46.00	28.35	20.58	0.00	30.52	Peak	---	---
3	906.400	26.63	-19.37	46.00	34.65	21.84	0.00	29.86	Peak	---	---

Test Mode	Mode 2 (CH08)	Temperature	23 deg. C	Tested By	Ted Chiu
Freq. Range	30MHz~1GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	42.070	10.29	-29.71	40.00	28.15	12.51	0.00	30.37	Peak	---	---
2	47.510	9.19	-30.81	40.00	27.45	11.88	0.00	30.14	Peak	---	---
3	53.630	8.53	-31.47	40.00	27.70	11.07	0.00	30.24	Peak	---	---
1	467.200	15.47	-30.53	46.00	30.48	16.26	0.00	31.27	Peak	---	---
2	640.800	18.00	-28.00	46.00	28.08	20.52	0.00	30.60	Peak	---	---
3	873.600	19.70	-26.30	46.00	28.06	21.75	0.00	30.11	Peak	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	46.830	10.59	-29.41	40.00	28.75	12.02	0.00	30.18	Peak	---	---
2	59.580	9.38	-30.62	40.00	29.21	10.53	0.00	30.36	Peak	---	---
3	97.660	8.50	-35.00	43.50	29.88	8.88	0.00	30.26	Peak	---	---
1	436.000	17.42	-28.58	46.00	31.62	16.51	0.00	30.71	Peak	---	---
2	602.400	17.02	-28.98	46.00	27.68	20.41	0.00	31.07	Peak	---	---
3	957.600	21.61	-24.39	46.00	27.95	22.96	0.00	29.30	Peak	---	---

Test Mode	Mode 3 (CH08)	Temperature	23 deg. C	Tested By	Ted Chiu
Freq. Range	30MHz~1GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	42.070	9.76	-30.24	40.00	27.62	12.51	0.00	30.37	Peak	---	---
2	47.510	9.34	-30.66	40.00	27.60	11.88	0.00	30.14	Peak	---	---
3	92.900	6.89	-36.61	43.50	27.82	8.65	0.00	29.58	Peak	---	---
1	467.200	15.11	-30.89	46.00	30.12	16.26	0.00	31.27	Peak	---	---
2	925.600	20.59	-25.41	46.00	27.95	22.26	0.00	29.62	Peak	---	---
3	960.000	22.05	-23.95	46.00	28.32	23.02	0.00	29.29	Peak	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	62.980	9.32	-30.68	40.00	29.54	10.29	0.00	30.51	Peak	---	---
2	96.300	8.03	-35.47	43.50	29.18	8.81	0.00	29.96	Peak	---	---
3	122.140	10.03	-33.47	43.50	28.39	12.03	0.00	30.39	Peak	---	---
1	407.200	14.39	-31.61	46.00	28.60	16.74	0.00	30.95	Peak	---	---
2	628.000	17.98	-28.02	46.00	28.25	20.48	0.00	30.75	Peak	---	---
3	957.600	21.38	-24.62	46.00	27.72	22.96	0.00	29.30	Peak	---	---

Test Mode	Mode 1 (CH 01)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4846.000	46.16	-7.84	54.00	54.97	33.04	2.54	44.39	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4846.000	47.44	-6.56	54.00	56.25	33.04	2.54	44.39	Average	111	49

Test Mode	Mode 2 (CH 01)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4846.000	49.45	-4.55	54.00	58.26	33.04	2.54	44.39	Average	121	21

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4846.000	47.74	-6.26	54.00	56.55	33.04	2.54	44.39	Average	---	---

Test Mode	Mode 3 (CH 01)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4846.000	48.41	-5.59	54.00	57.22	33.04	2.54	44.39	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4846.000	52.19	-1.81	54.00	61.00	33.04	2.54	44.39	Average	181	2

Test Mode	Mode 1 (CH 04)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4710.000	41.02	-12.98	54.00	50.03	32.79	2.48	44.28	Average	---	---
2	4894.000	48.54	-5.46	54.00	57.33	33.13	2.50	44.42	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4894.000	50.73	-3.27	54.00	59.52	33.13	2.50	44.42	Average	166	70

Test Mode	Mode 2 (CH 04)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4894.000	51.82	-2.18	54.00	60.61	33.13	2.50	44.42	Average	185	39

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4894.000	50.80	-3.20	54.00	59.59	33.13	2.50	44.42	Average	---	---

Test Mode	Mode 3 (CH 04)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4894.000	51.66	-2.34	54.00	60.45	33.13	2.50	44.42	Average	179	59

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4956.000	56.40	-17.60	74.00	65.19	33.24	2.44	44.47	Peak	---	---
2	4956.000	51.63	-2.37	54.00	60.42	33.24	2.44	44.47	Average	---	---

Test Mode	Mode 1 (CH 08)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4956.000	49.65	-4.35	54.00	58.44	33.24	2.44	44.47	Average	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4956.000	52.21	-1.79	54.00	61.00	33.24	2.44	44.47	Average	126	88

Test Mode	Mode 2 (CH 08)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4846.000	50.24	-3.76	54.00	59.05	33.04	2.54	44.39	Average	123	3

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4846.000	47.13	-6.87	54.00	55.94	33.04	2.54	44.39	Average	---	---

Test Mode	Mode 3 (CH 08)	Temperature	23 deg. C	Tested By	Steve Chen
Freq. Range	1GHz~25GHz	Humidity	61%		

(A) Polarization: Horizontal

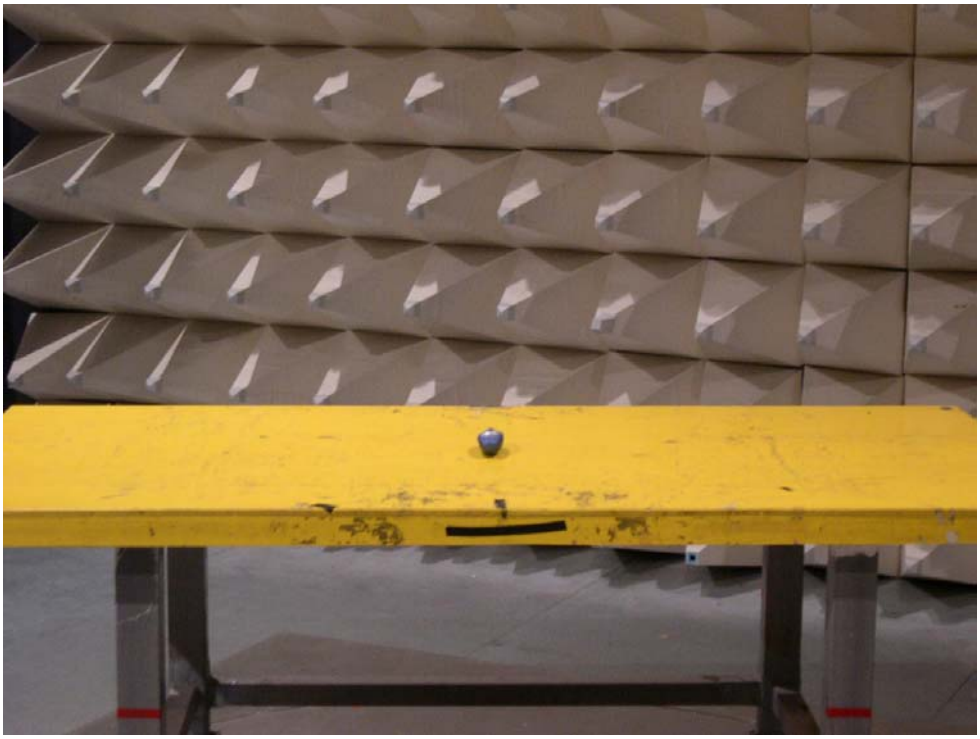
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4956.000	49.04	-4.96	54.00	57.83	33.24	2.44	44.47	Average	---	---
2	4956.000	49.04	-24.96	74.00	57.83	33.24	2.44	44.47	Peak	---	---

(B) Polarization: Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4956.000	51.66	-2.34	54.00	60.45	33.24	2.44	44.47	Average	148	4
2	4956.000	51.66	-22.34	74.00	60.45	33.24	2.44	44.47	Peak	---	---

5.3.8. Photographs of Radiated Emission Test Configuration

FRONT VIEW



REAR VIEW

5.4. Antenna Requirements

5.4.1. Standard Applicable

Section 15.203: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

5.4.2. Antenna Connected Construction

There is no antenna connector for printed antenna.

5.4.3. Test Criteria

All test results complied with the requirements of Section 15.203.

6. List of Measuring Equipments Used

Items	Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz~1GHz 3m	Jun. 21, 2004	Radiation (03CH03-HY)
2	Spectrum analyzer	R&S	FSP40	100004	9KHZ~40GHz	Aug. 23, 2003	Radiation (03CH03-HY)
3	Amplifier	HP	8447D	2944A09072	100KHz – 1.3GHz	Nov. 05, 2003	Radiation (03CH03-HY)
4	Biconical Antenna	SCHWARZBECK	VHBB 9124	301	30MHz –200MHz	Jul. 24, 2003	Radiation (03CH03-HY)
5	Log Antenna	SCHWARZBECK	VUSLP 9111	221	200MHz -1GHz	Jul. 24, 2003	Radiation (03CH03-HY)
6	RF Cable-R03m	Jye Bao	RG142	CB021	30MHz~1GHz	Dec. 03, 2003	Radiation (03CH03-HY)
7	Amplifier	MITEQ	AFS44	879981	100MHz~26.5GHz	Jul. 23, 2003	Radiation (03CH03-HY)
8	Horn Antenna	EMCO	3115	6821	1GHz – 18GHz	Sep. 12, 2003	Radiation (03CH03-HY)
9	Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	Radiation (03CH03-HY)
10	Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)
11	Horn Antenna	Schwarzbeck	BBHA9170	154	15GHz~40GHz	Jun. 09, 2004	Radiation (03CH03-HY)
12	RF Cable-HIGH	Jye Bao	RG142	CB030-HIGH	1GHz~29.5GHz	Dec. 05, 2003	Radiation (03CH03-HY)

※ Calibration Interval of instruments listed above is one year.

7. Company Profile

SPORTON Lab. was established in 1986 with one shielded room: the first private EMI test facility, offering local manufacturers an alternative EMI test familial apart from ERSO. In 1988, one 3M and 10M/3M open area test site were setup and also obtained official accreditation from FCC, VCCI and NEMKO. In 1993, a Safety laboratory was founded and obtained accreditation from UL of USA, CSA of Canada and TUV (Rhineland & PS) of Germany. In 1995, one EMC lab, including EMI and EMS test facilities was setup. In 1997, SPORTON Group has provided financial expense to relocate the headquarter to Orient Scientific Park in Taipei Hsien to offer more comprehensive, more qualified and better service to local suppliers and manufactures. In 1999, Safety Group and Component Group were setup. In 2001, SPORTON has established 3M/10M chamber in Hwa Ya Technology Park.

7.1. Certificate of Accreditation

Taiwan	BSMI, CNLA, DGT
USA	FCC, NVLAP, UL
EU	Nemko, TUV
Japan	VCCI
Canada	Industry Canada

7.2. Test Location

SHIJR	ADD：	6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C.
	TEL：	02-2696-2468
	FAX：	02-2696-2255
HWA YA	ADD：	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
	TEL：	03-327-3456
	FAX：	03-318-0055
LINKOU	ADD：	No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C
	TEL：	02-2601-1640
	FAX：	02-2601-1695
DUNGHU	ADD：	No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C.
	TEL：	02-2631-4739
	FAX：	02-2631-9740
JUNGHE	ADD：	7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C.
	TEL：	02-8227-2020
	FAX：	02-8227-2626
NEIHU	ADD：	4Fl., No. 339, Hsin Hu 2nd Rd., Taipei 114, Taiwan, R.O.C.
	TEL：	02-2794-8886
	FAX：	02-2794-9777

8. CNLA Certificate of Accreditation

Test Lab.	:	Sporton International Inc.
Accreditation Number	:	1190
Originally Accredited	:	2003/12/15
Effective Period	:	2003/12/15~2006/12/14
Accredited Scope	:	47 CFR FCC Part 15 Subpart C (9kHz~40GHz)

Taiwan Accreditation Foundation
Chinese National Laboratory Accreditation
Certificate of Accreditation

Accreditation Criteria:	ISO 17025
Accreditation Number:	1190
Organization/Laboratory:	EMC & Wireless Communications Laboratory,Sporton International Inc.
Originally Accredited:	December 15, 2003
Effective Period:	December 15, 2003 To December 14, 2006
Accredited Scope:	Electrical Testing Field, 7 items, details shown in the following pages.
Specific Accreditation Program:	Recognition and Approval of Designated Laboratory for Commodities Inspection

President, Taiwan Accreditation Foundation
Date:July 19, 2004

(This document is invalid unless accompanied by all 4 pages)

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APPENDIX A. Photographs of EUT

SPORTON International Inc.
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FAX : 886-2-2696-2255

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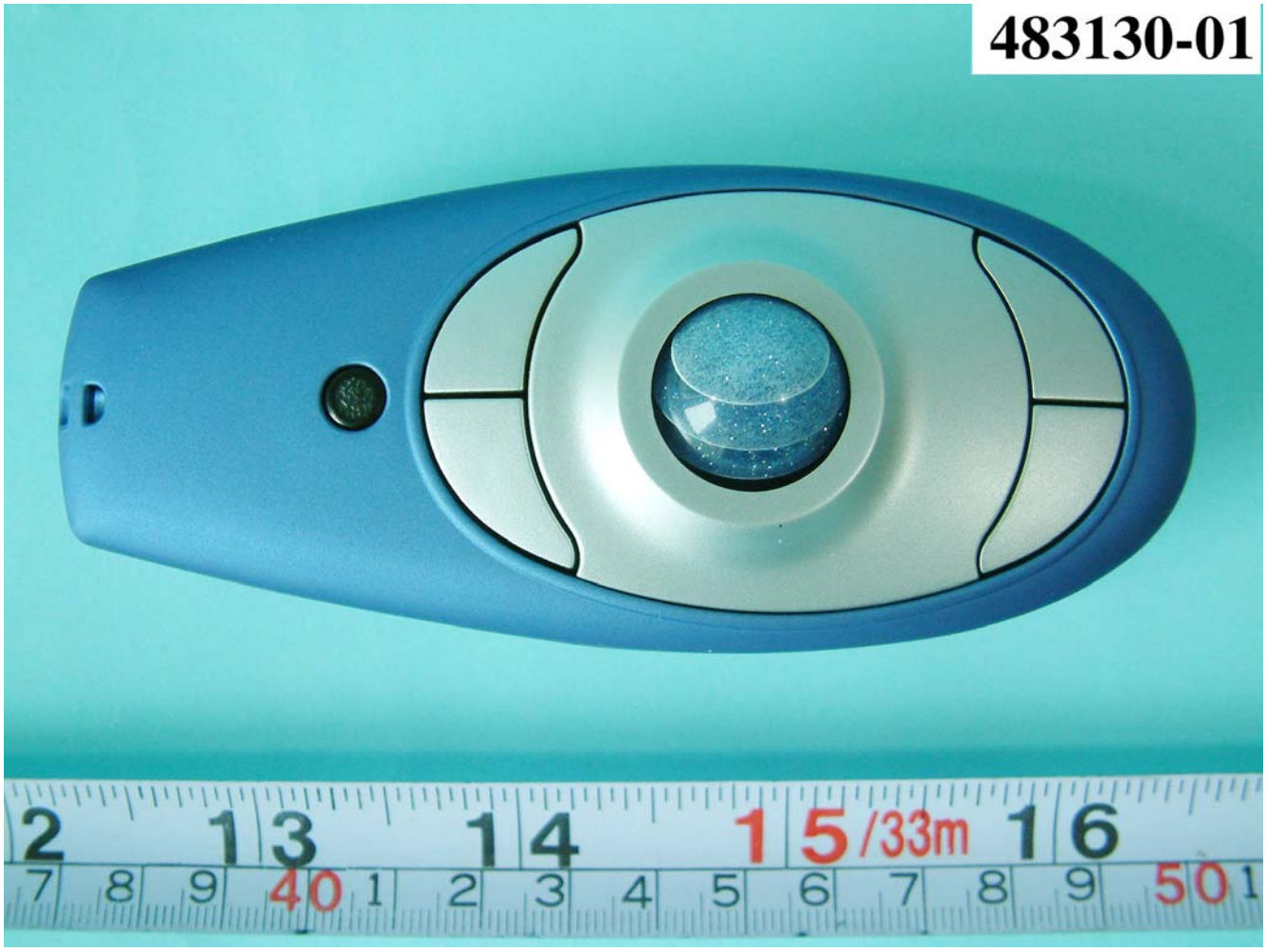

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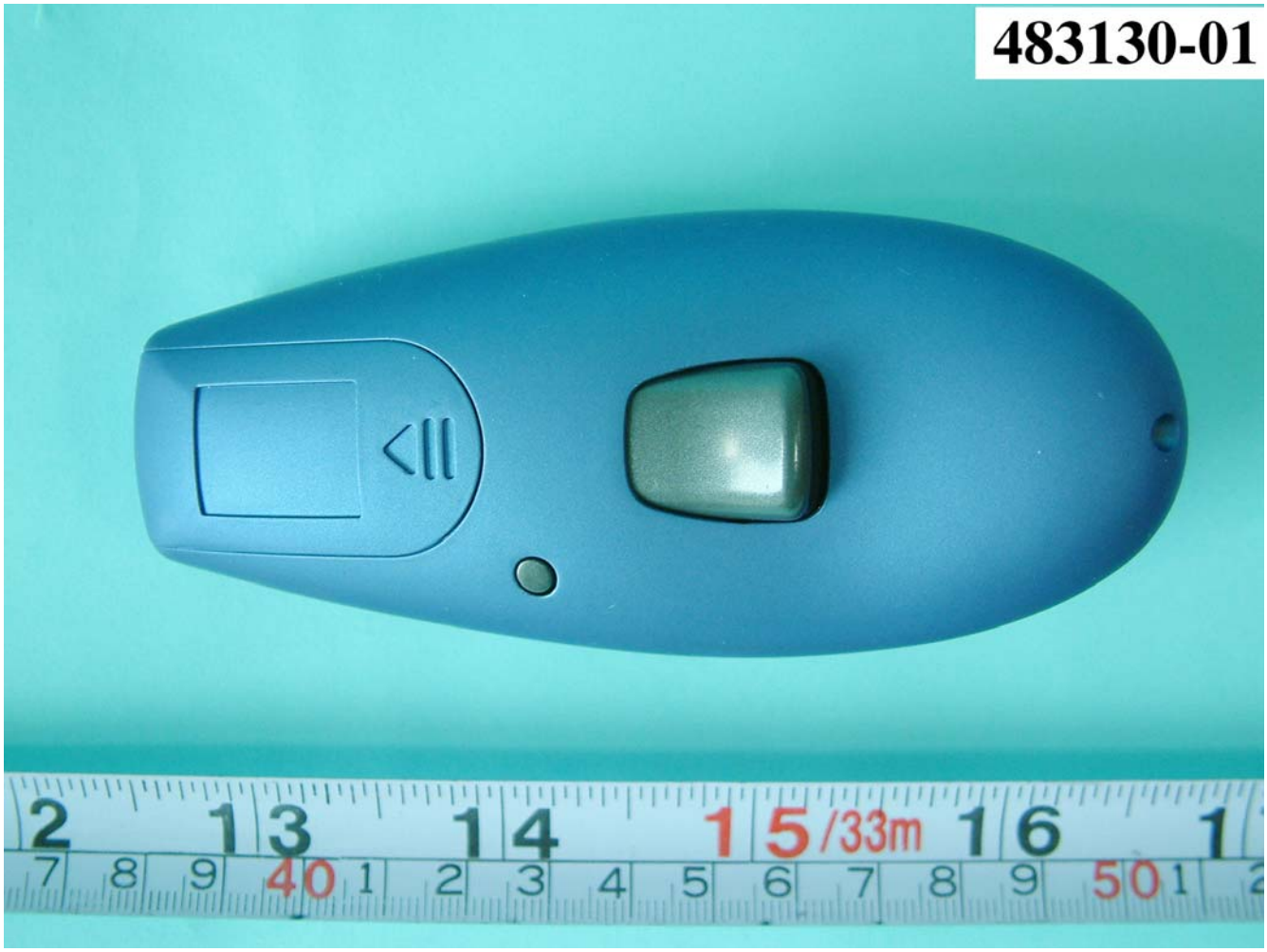
FAX : 886-2-2696-2255



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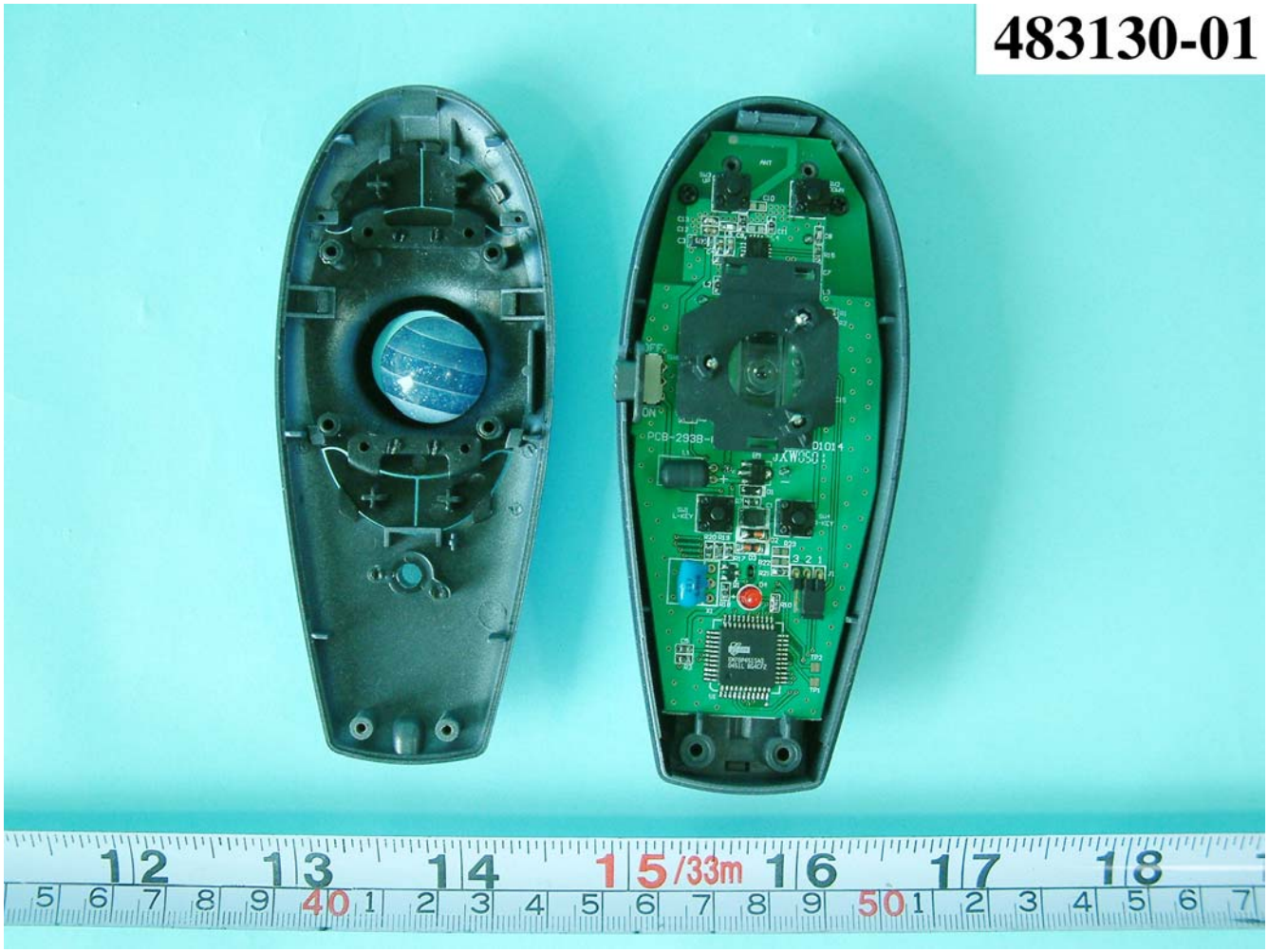
FAX : 886-2-2696-2255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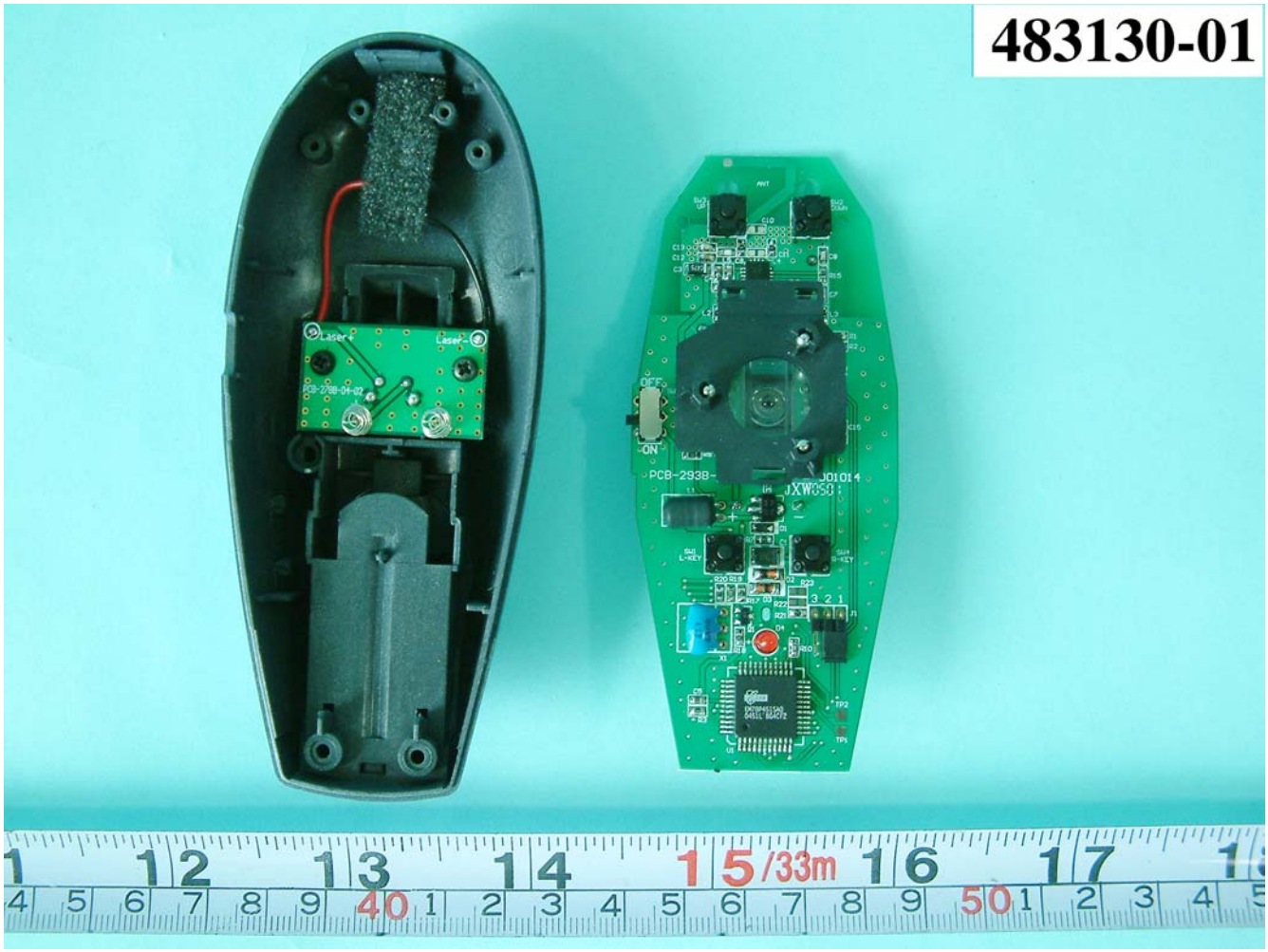
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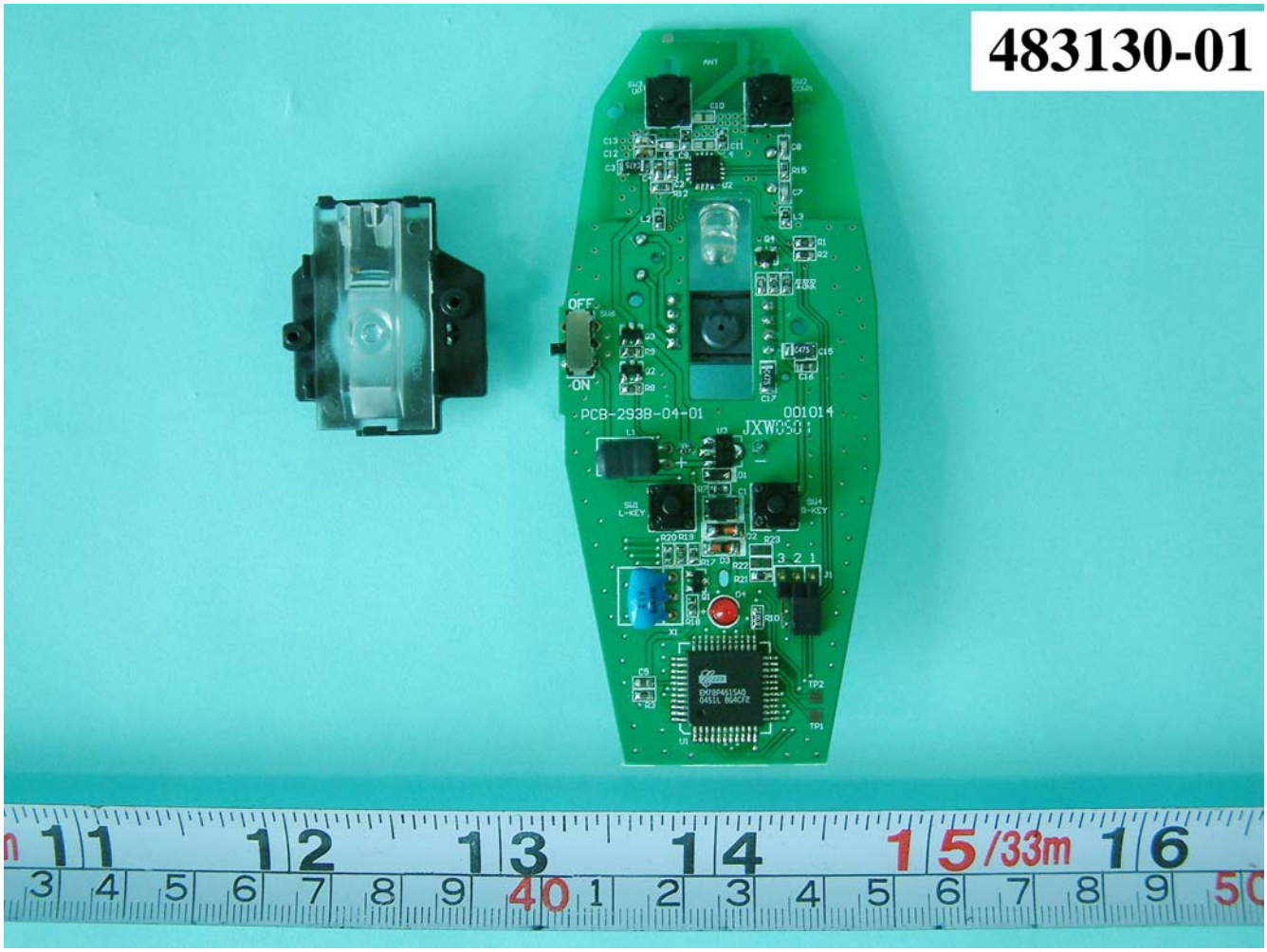
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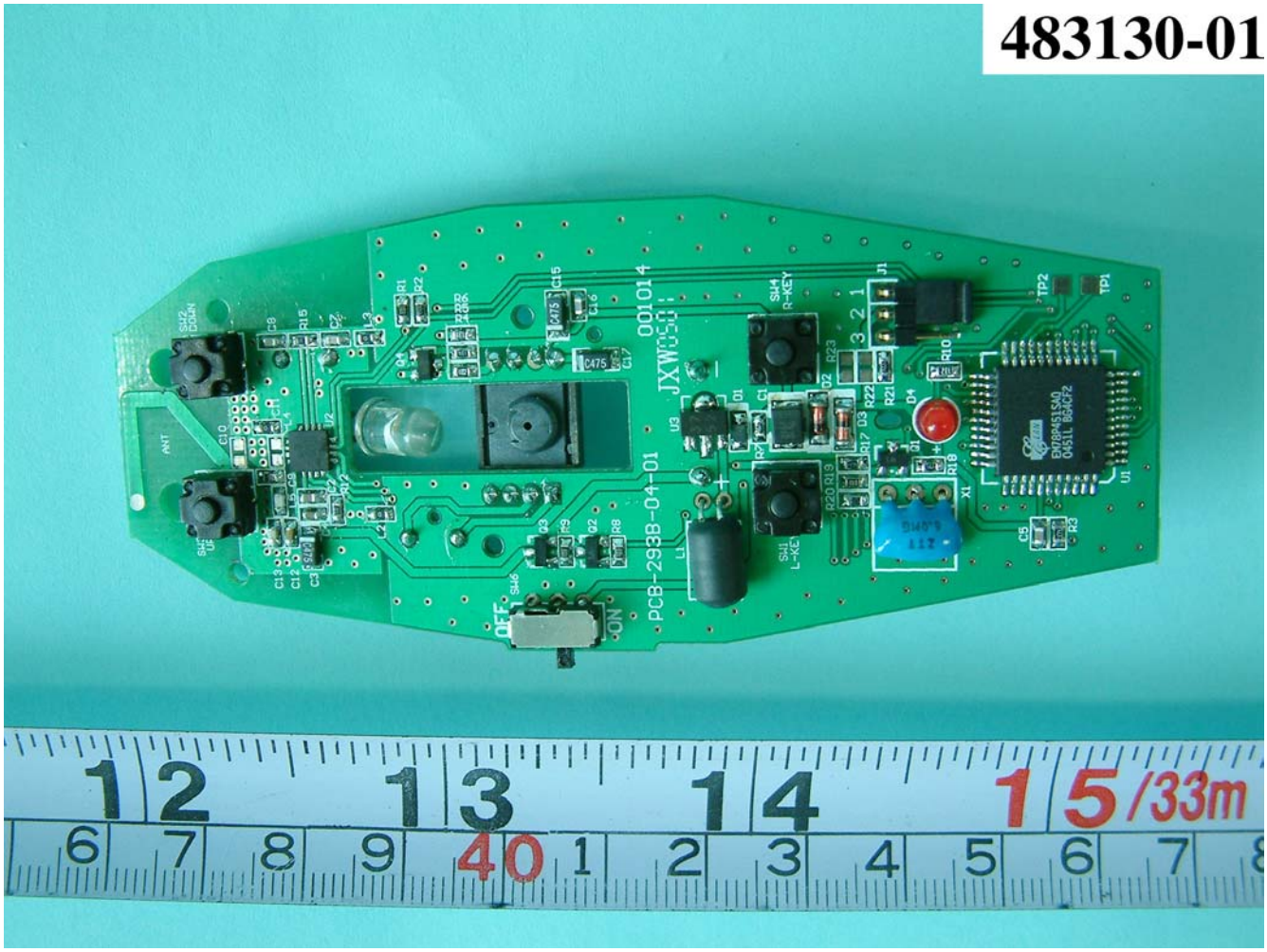
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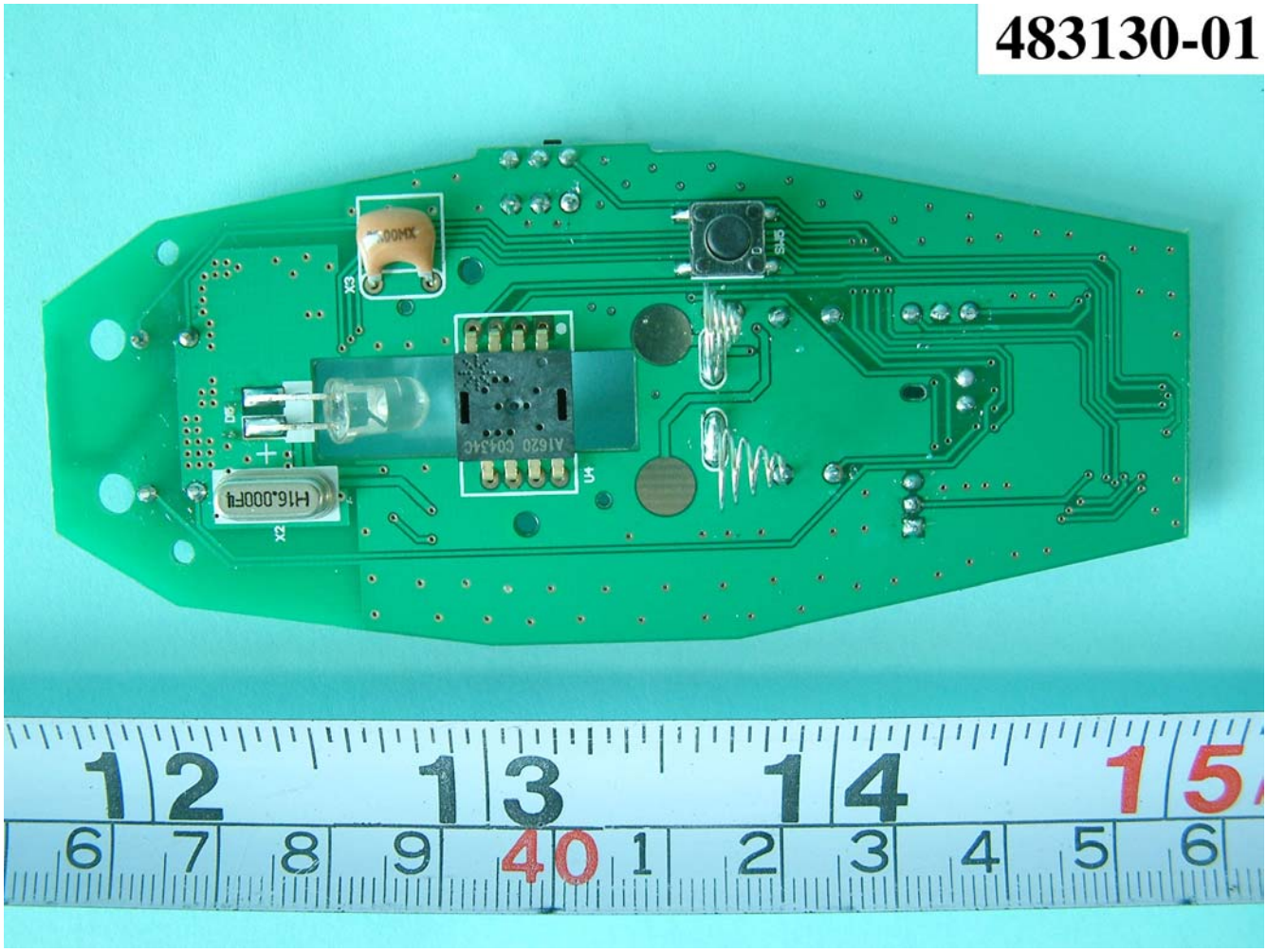
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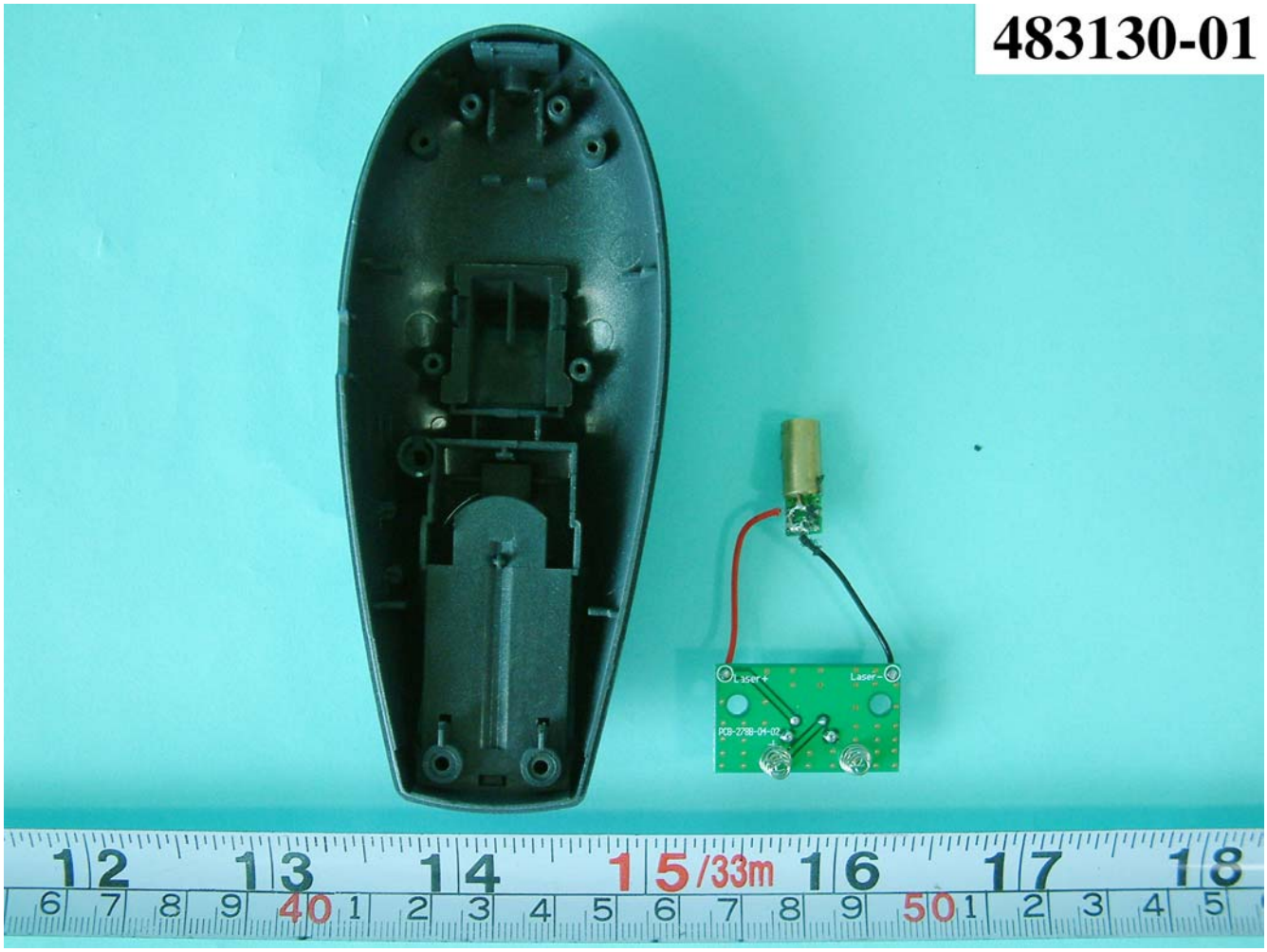

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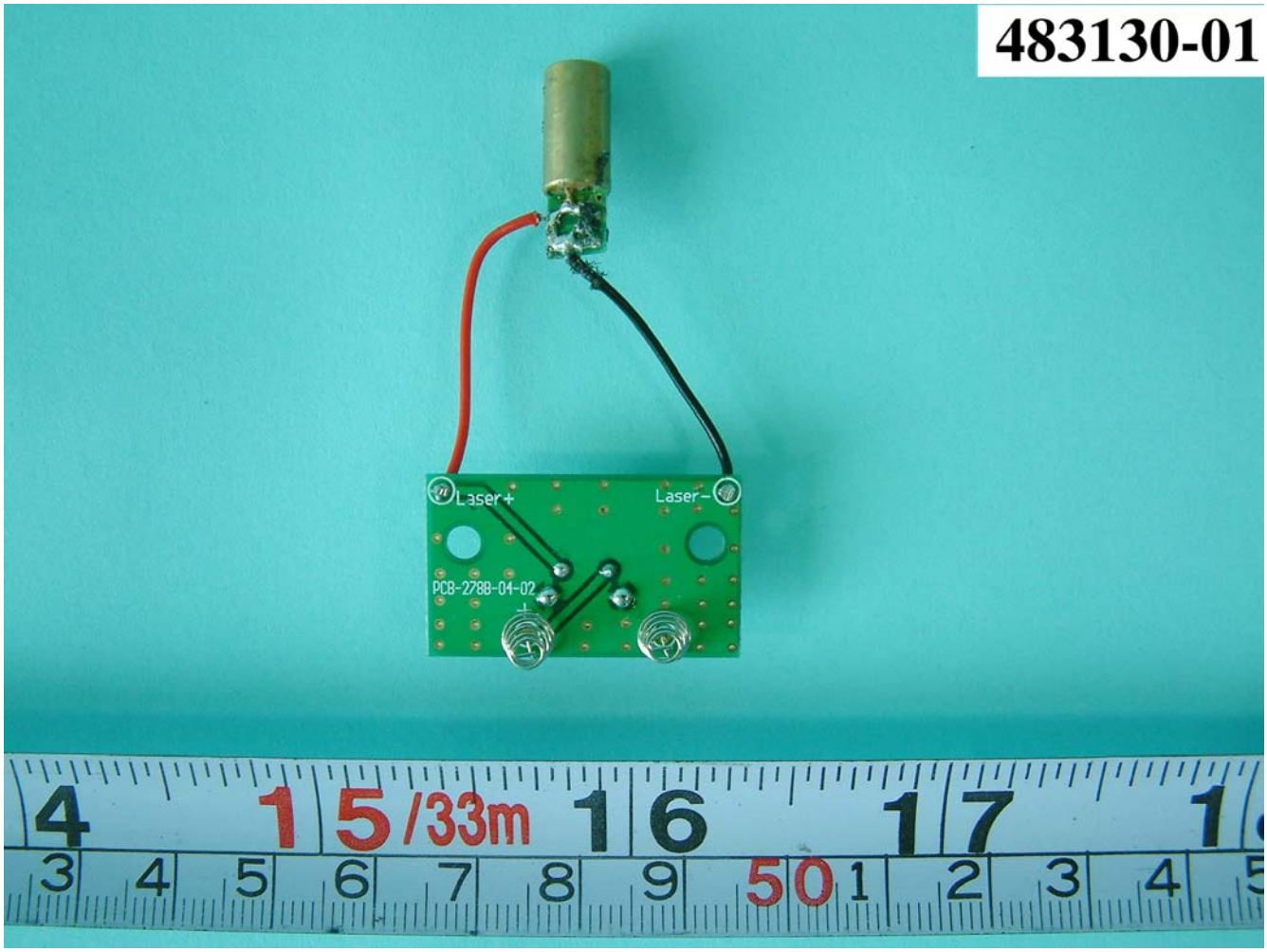
FAX : 886-2-2696-2255



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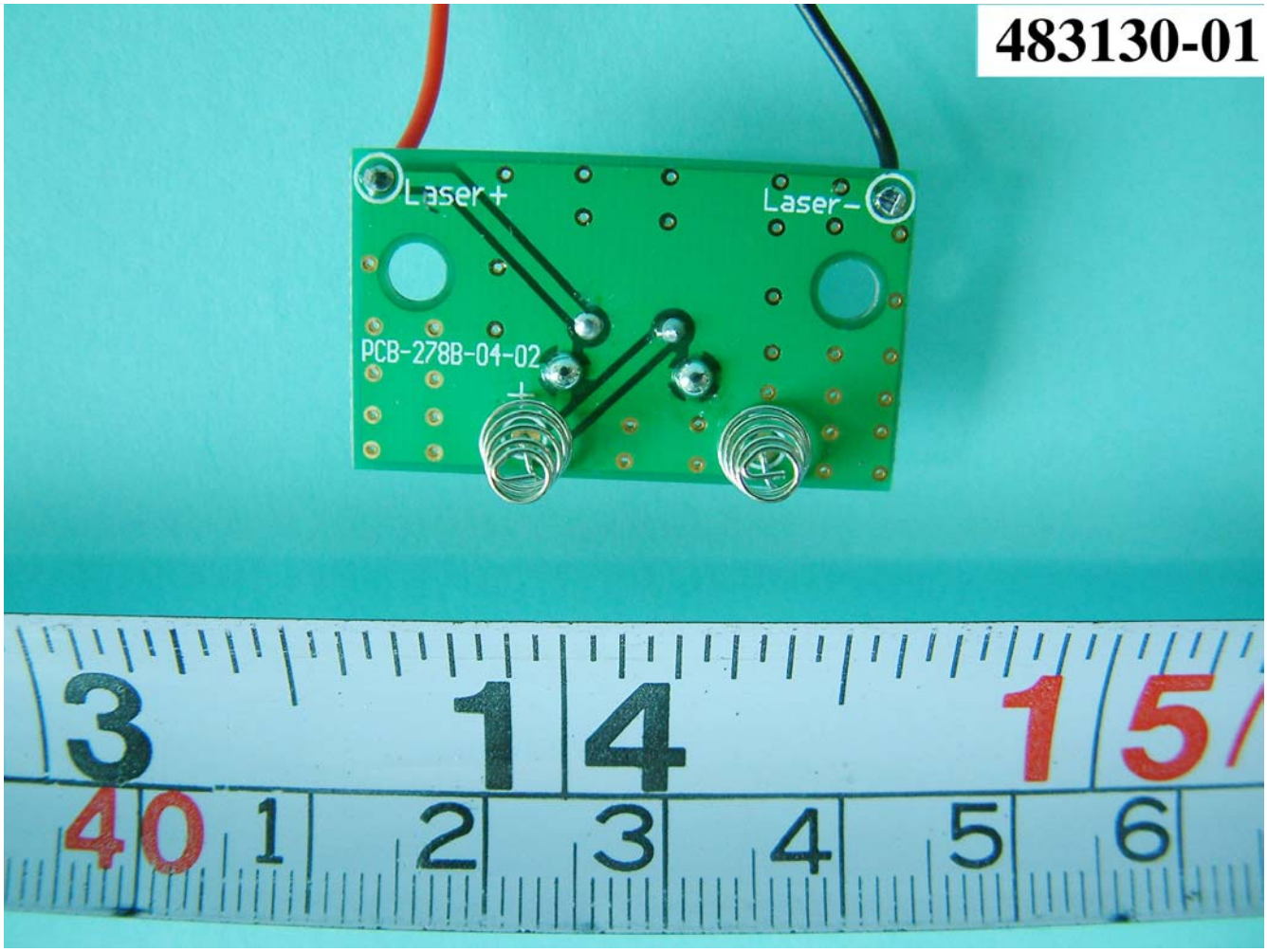
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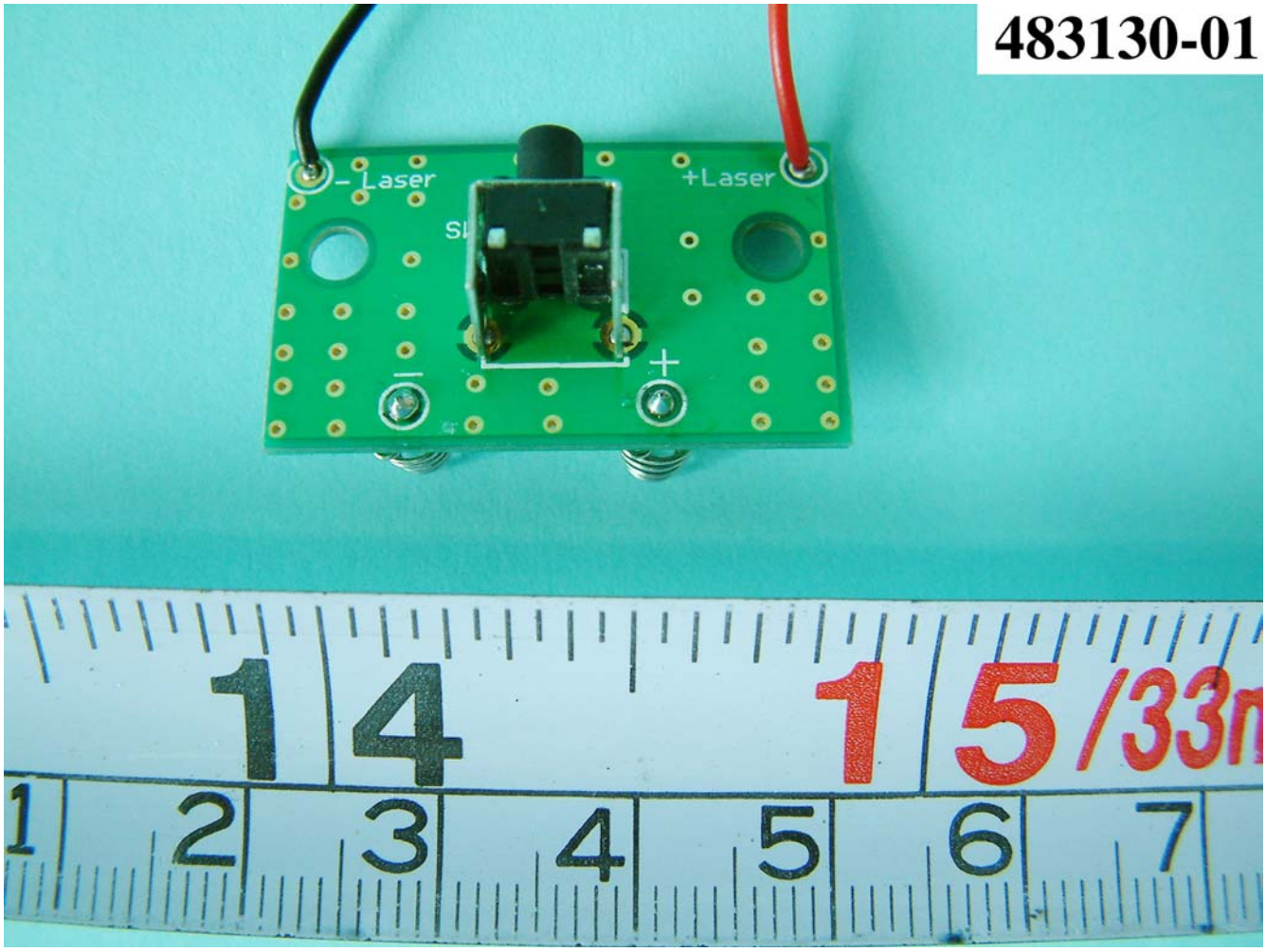
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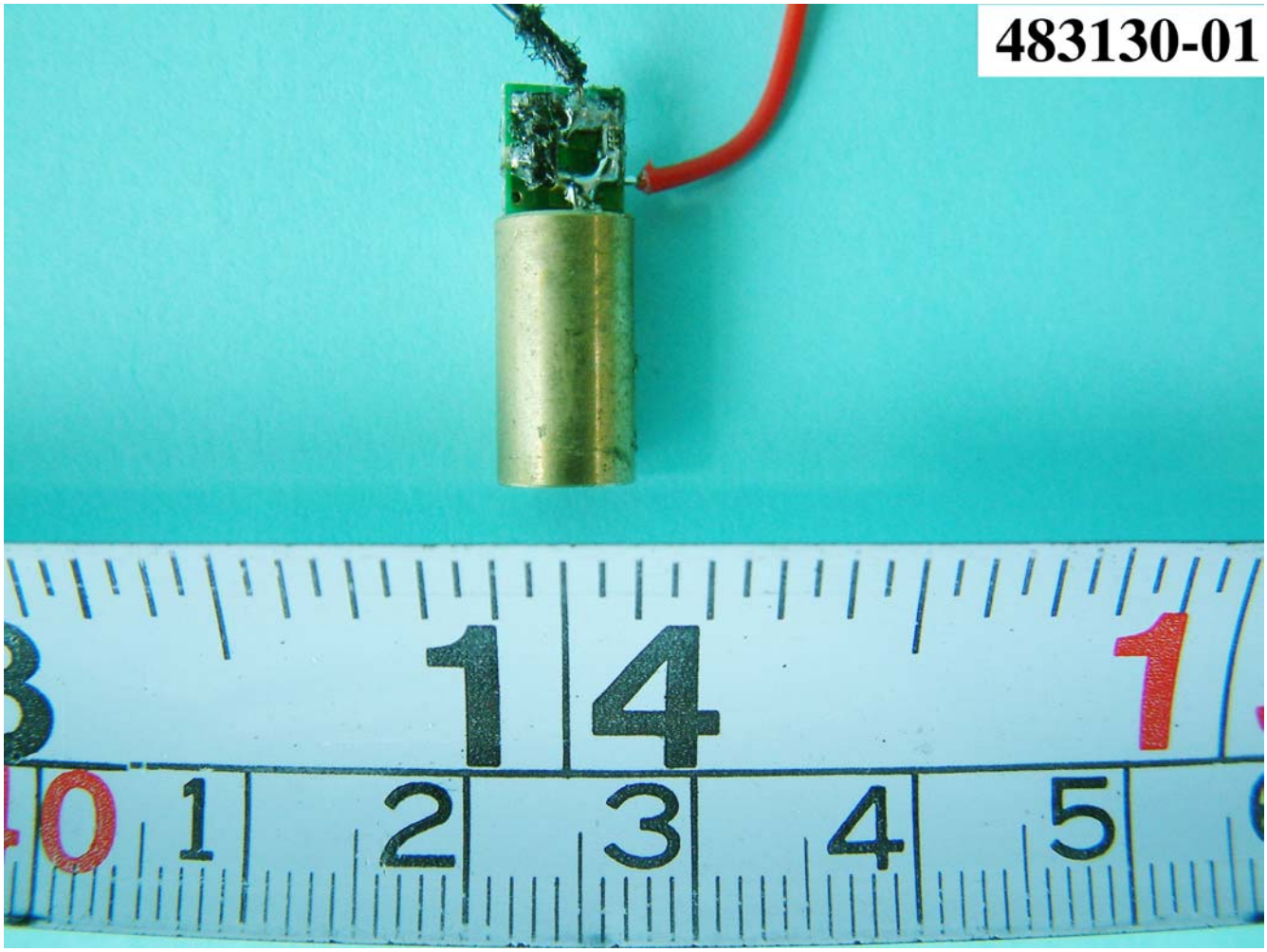
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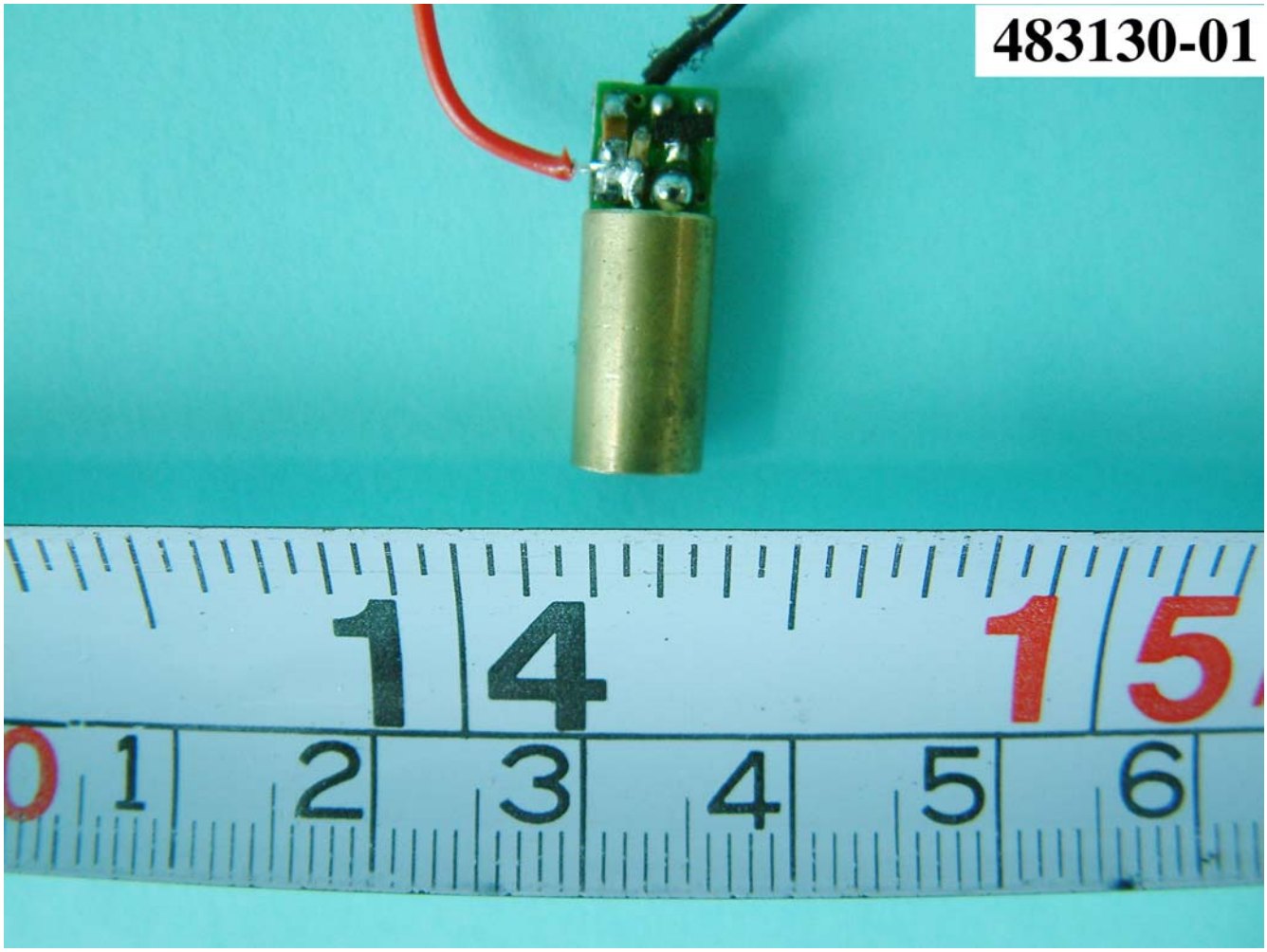

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