

FCC TEST REPORT  
FOR  
Matsunichi Communication Holdings R&D (Shenzhen) Co., Ltd.

Mobile Hard Drive  
Model No.: DM189

Prepared for : Matsunichi Communication Holdings R&D (Shenzhen) Co., Ltd.  
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Report Number : 201007685F  
Date of Test : Jul. 12~14, 2010  
Date of Report : Jul. 16, 2010

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APPENDIX I (Photos of EUT) (3 Pages)

## TEST REPORT

Applicant : Matsunichi Communication Holdings R&D (Shenzhen) Co., Ltd.  
Manufacturer : Goldland Electronics (Shenzhen) Co., Ltd.  
EUT : Mobile Hard Drive  
Model No. : DM189  
Rating : DC 5V via USB Port  
Trade Mark : Matsunichi

## Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B 15.107&15.109-2007 & ANSI C63.4-2009

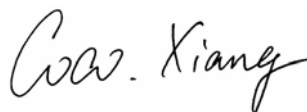
The device described above is tested by Anbotek Compliance Laboratory Limited To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and Anbotek Compliance Laboratory Limited Is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Anbotek Compliance Laboratory Limited

Date of Test : Jul. 12~14, 2010

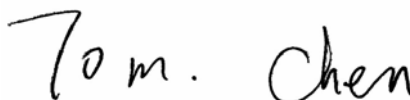


Prepared by :  
(Engineer)



Reviewer :

(Project Manager)



Approved & Authorized Signer :  
(Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

Description	: Mobile Hard Drive
Model Number	: DM189
Test Power Supply	: AC 120V, 60Hz for PC
Notebook PC	: Manufacturer: IBM M/N: 2373 S/N: 99-OL5HH CE , FCC: DOC
Applicant	: Matsunichi Communication Holdings R&D (Shenzhen) Co., Ltd.
Address	: 43B/F, INTERNAL CHAMBER OF COMMERCE TOWER, FUHUA RD3 CBD, FUTIAN DISTRICT, SHENZHEN, CHINA
Manufacturer	: Goldland Electronics (Shenzhen) Co., Ltd.
Address	: Matsunichi Hi-Tech Bld, South of Chuangjing Street, Lanzhu Road, Longgang Industrial Zone, Shenzhen, China
Date of Sample received	: Jul. 10, 2010
Date of Test	: Jul. 12~14, 2010

## 1.2. Description of Test Facility

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

### **CNAS - LAB Code: L3503**

Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

### **FCC-Registration No.: 607248**

Anbotek Compliance Laboratory Limited, 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 607248, November 12, 2008.

### **IC-Registration No.: 8058A**

Anbotek Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A, November 12, 2008.

### **Test Location**

All Emissions tests were performed  
Anbotek Compliance Laboratory Limited. at 2F, Langfeng Building, Kefa Road North, Hi-tech Industrial Park, Nanshan District, Shenzhen 518057, China

## 1.3. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.3dB

Conduction Uncertainty : Uc = 2.7dB

## 2. POWER LINE CONDUCTED MEASUREMENT

### 2.1. Test Equipment

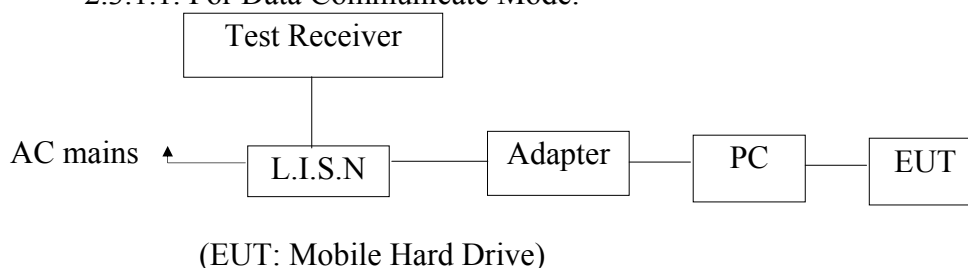
The following test equipments are used during the power line conducted measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2009	1 Year
2.	Artificial Mains	Rohde & Schwarz	ENV216	10055	Nov. 12, 2009	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303 N/A		N/A
4.	EMI Test Software	R/S N/A		N/A	N/A	N/A
5.	Coaxial cable	ANBOTEK	N/A	N/A	Nov. 05, 2009	1 Year

### 2.2. Block Diagram of Test Setup

2.2.1. Block diagram of connection between the EUT and simulators

2.3.1.1. For Data Communicate Mode.



### 2.3. Power Line Conducted Emission Measurement Limits (FCC Part 15

Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. \*Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

### 2.4. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission

Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

EUT : Mobile Hard Drive  
Model Number : DM189  
Applicant : Matsunichi Communication Holdings R&D (Shenzhen) Co., Ltd.

## 2.5. Operating Condition of EUT

- 2.5.1. Setup the EUT and simulator as shown as Section 2.2.
- 2.5.2. Turn on the power of all equipment.
- 2.5.3. Let the EUT work in test mode (Data Communicate) and measure it.

## 2.6. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. 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 ANSI C63.4-2009 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9KHz.

The frequency range from 150KHz to 30MHz is checked.

The test result are reported on Section 2.7.

## 2.7. Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150KHz to 30 MHz is investigated.

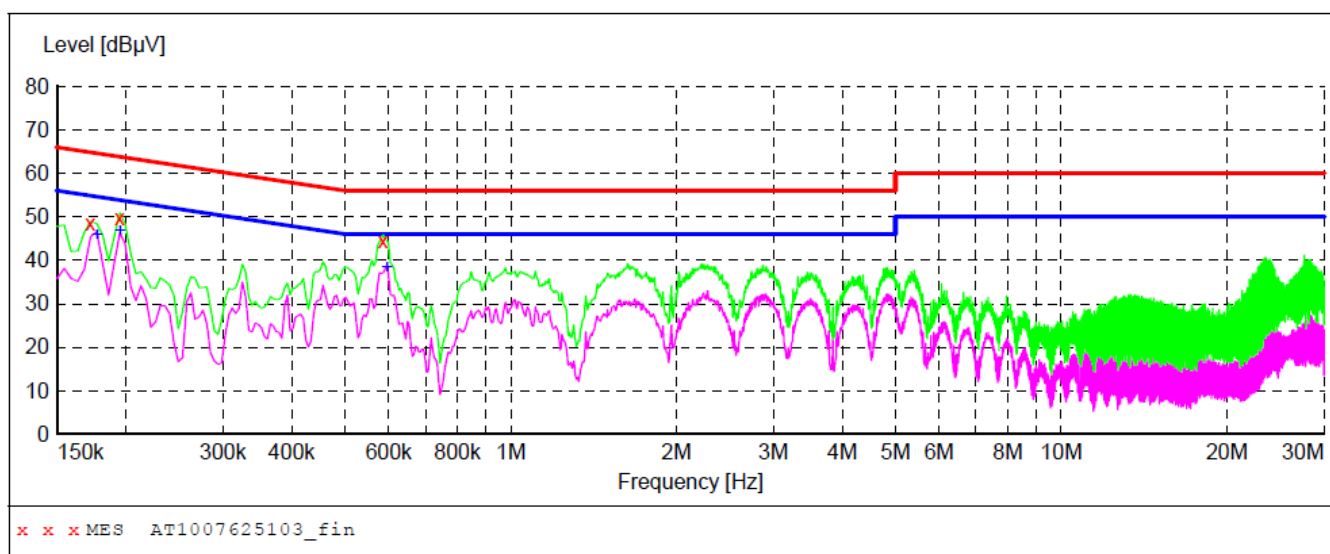
The test curves Please refer the following pages.

**CONDUCTED EMISSION TEST DATA**

EUT: Mobile Hard Drive M/N: DM189  
 Operating Condition: Data Communicate  
 Test Site: 1# Shielded Room  
 Operator: Juice.X u  
 Test Specification: AC 120V/60Hz for PC  
 Comment: Live Line  
 Tem:25°C Hum:50%

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "AT1007625103\_fin"**

7/13/2010 9:38PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.172500	48.40	10.9	65	16.4	QP	L1	GND
0.195000	49.60	10.7	64	14.2	QP	L1	GND
0.586500	44.30	9.9	56	11.7	QP	L1	GND

**MEASUREMENT RESULT: "AT1007625103\_fin2"**

7/13/2010 9:38PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.177000	46.10	10.8	55	8.5	AV	L1	GND
0.195000	47.00	10.7	54	6.8	AV	L1	GND
0.595500	38.60	9.9	46	7.4	AV	L1	GND

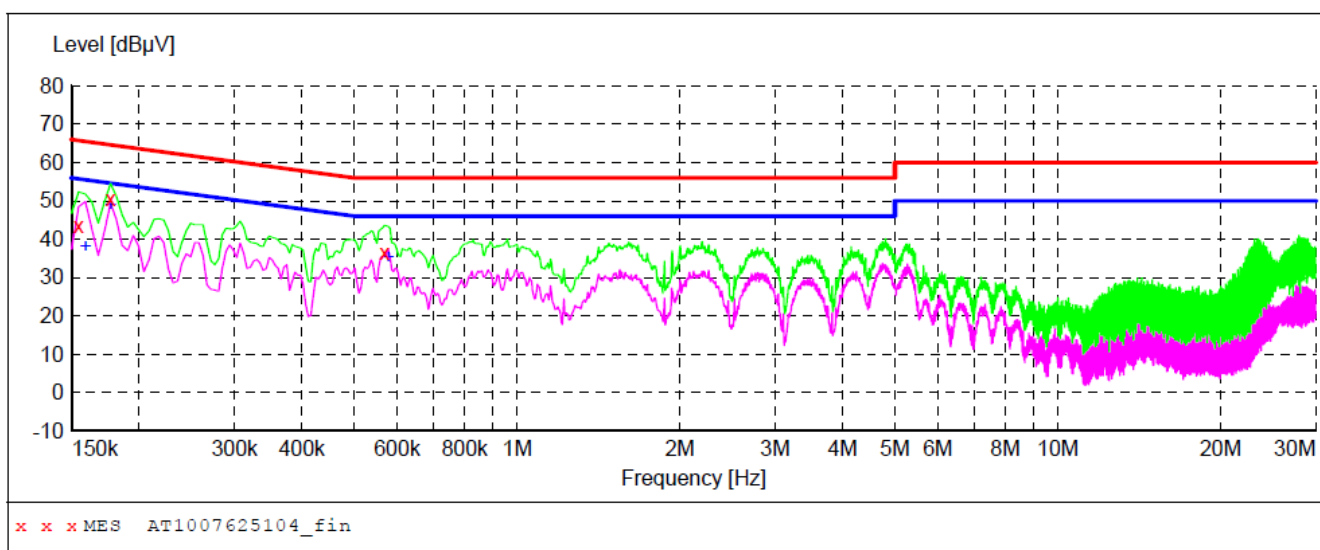


**CONDUCTED EMISSION TEST DATA**

EUT: Mobile Hard Drive M/N: DM189  
Operating Condition: Data Communicate  
Test Site: 1# Shielded Room  
Operator: Juice.X u  
Test Specification: AC 120V/60Hz for PC  
Comment: Neutral Line  
Tem:25°C Hum:50%

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "AT1007625104\_fin"**

7/13/2010 9:35PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.154500	43.40	11.3	66	22.4	QP	N	GND
0.177000	50.60	10.8	65	14.0	QP	N	GND
0.568500	36.30	9.9	56	19.7	QP	N	GND

**MEASUREMENT RESULT: "AT1007625104\_fin2"**

7/13/2010 9:35PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.159000	38.10	11.0	56	17.4	AV	N	GND
0.177000	49.20	10.8	55	5.4	AV	N	GND
0.577500	35.30	9.9	46	10.7	AV	N	GND

### 3. RADIATED EMISSION MEASUREMENT

#### 3.1. Test Equipment

The following test equipments are used during the radiated emission measurement:

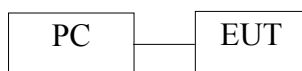
##### 3.1.1. For Anechoic Chamber

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	SHURPLE	ESPI	101604	Nov. 12, 2009	1 Year
2.	Bilog Antenna	Schwarzbeck	VULB9163	100015	Nov. 12, 2009	1 Year
3.	Pre-am plifier	Compliance Direction	PAP-0203	22008	Nov. 12, 2009	1 Year
4.	EMI Test Software	SHURPLE N/A		N/A	N/A	N/A
5.	Coaxial cable	ANBOTEK	N/A	N/A	N/A	N/A

#### 3.2. Block Diagram of Test Setup

##### 3.2.1. Block diagram of connection between the EUT and simulators

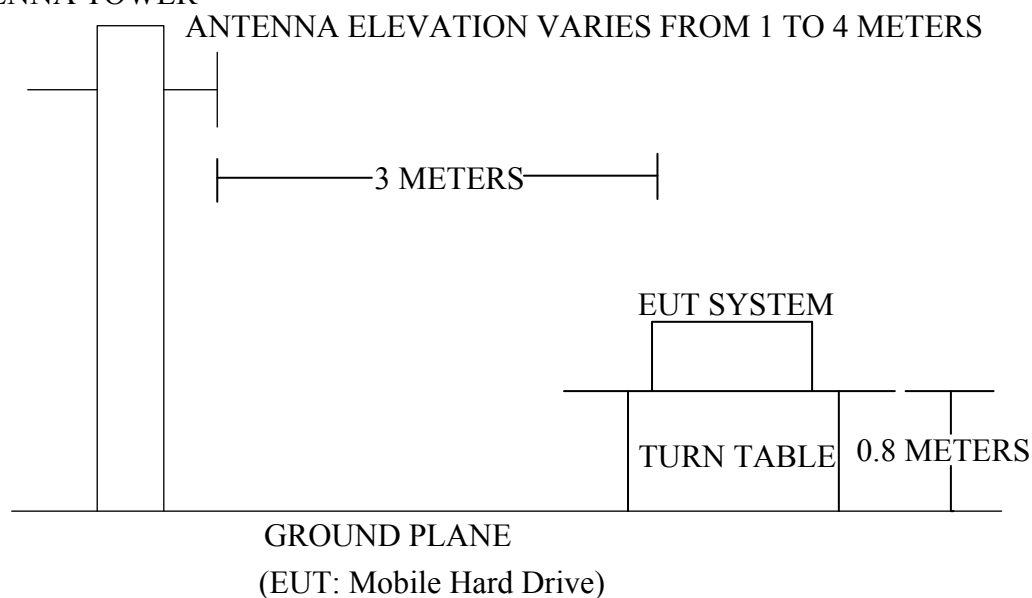
##### 3.2.1.1. For Data Communicate Mode.



(EUT: Mobile Hard Drive)

##### 3.2.2. Anechoic Chamber Test Setup Diagram

ANTENNA TOWER



### 3.3. Radiated Emission Limit (Subpart B Class B)

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V/m dB(}$	$\mu\text{V)/m}$
30~88.3		100	40.0
88~216.3		150	43.5
216~960.3		200	46.0
960~1000.3		500	54.0

- Remark :
- (1) Emission level (dB) $\mu\text{V} = 20 \log$  Emission level  $\mu\text{V/m}$
  - (2) The smaller limit shall apply at the cross point between two frequency bands.
  - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

### 3.4. EUT Configuration on Measurement

The following equipments are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

EUT : Mobile Hard Drive  
 Model Number : DM189  
 Applicant : Matsunichi Communication Holdings R&D (Shenzhen) Co., Ltd.

### 3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT as shown in Section 3.2.
- 3.5.2. Let the EUT work in test mode (Data Communicate) and measure it.

### 3.6. Test Procedure

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. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (Trilog Broadband Antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission measurement.

The bandwidth of the EMI test receiver (ESPI) is set at 120kHz.

The frequency range from 30MHz to 1000MHz is checked.

The test mode (Data Communicate) is tested in chamber and all the test results are listed in Section 3.7.

### 3.7. Radiated Emission Measurement Results

**PASS.**

The test curves Please refer the following pages.

Remarks: All measurements were carried out in peak mode. As long as the values stay under the limit line 6dB, No QP measurement are carried out.


**Anbotek Compliance Laboratory Limited**

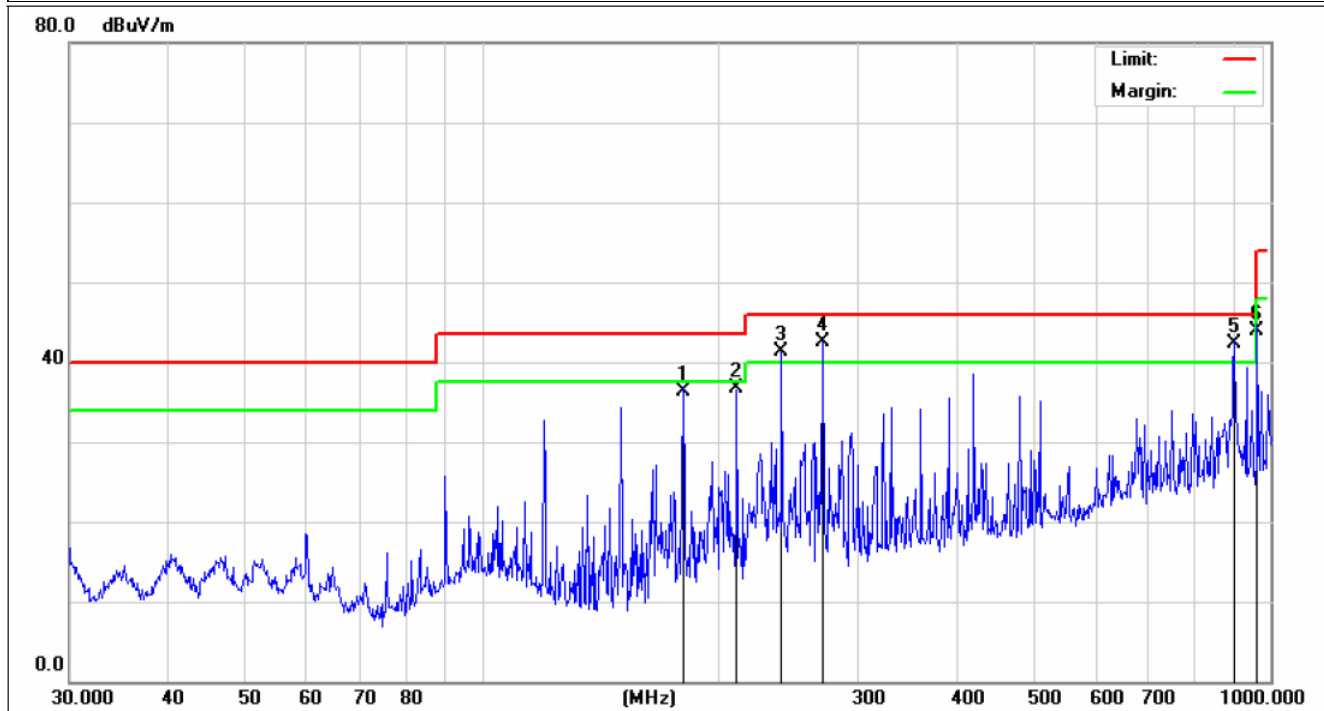
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 Park, Nanshan District, Shenzhen 518057, China

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Fax: (86)755-26014772

Http://www.anbotek.com

<b>Job No.:</b>	<b>AT1007625F</b>	<b>Polarization:</b>	<b>Horizontal</b>
<b>Standard:</b>	<b>(RE)FCC Part 15_class B_3m</b>	<b>Power Source:</b>	<b>DC 5V via USB Port</b>
<b>Test item:</b>	<b>Radiation Test</b>	<b>Date:</b>	<b>2010/07/13</b>
<b>Temp.(C)/Hum.(%RH):</b>	<b>24.3( C)/55%RH</b>	<b>Time:</b>	<b>20:20:35</b>
<b>EUT:</b>	<b>Mobile Hard Drive</b>	<b>Test By:</b>	<b>Juice.Xu</b>
<b>Model:</b>	<b>DM189</b>	<b>Distance:</b>	<b>3m</b>
<b>Note:</b>	<b>Data Communicate</b>		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	180.0165	61.80	-25.41	36.39	43.50	-7.11	QP
2	210.0482	60.64	-24.00	36.64	43.50	-6.86	QP
3	239.9874	63.87	-22.60	41.27	46.00	-4.73	QP
4	270.3747	64.50	-22.09	42.41	46.00	-3.59	QP
5	900.1473	51.05	-8.68	42.37	46.00	-3.63	QP
6	960.1023	52.02	-8.04	43.98	54.00	-10.02	QP


**Anbotek Compliance Laboratory Limited**

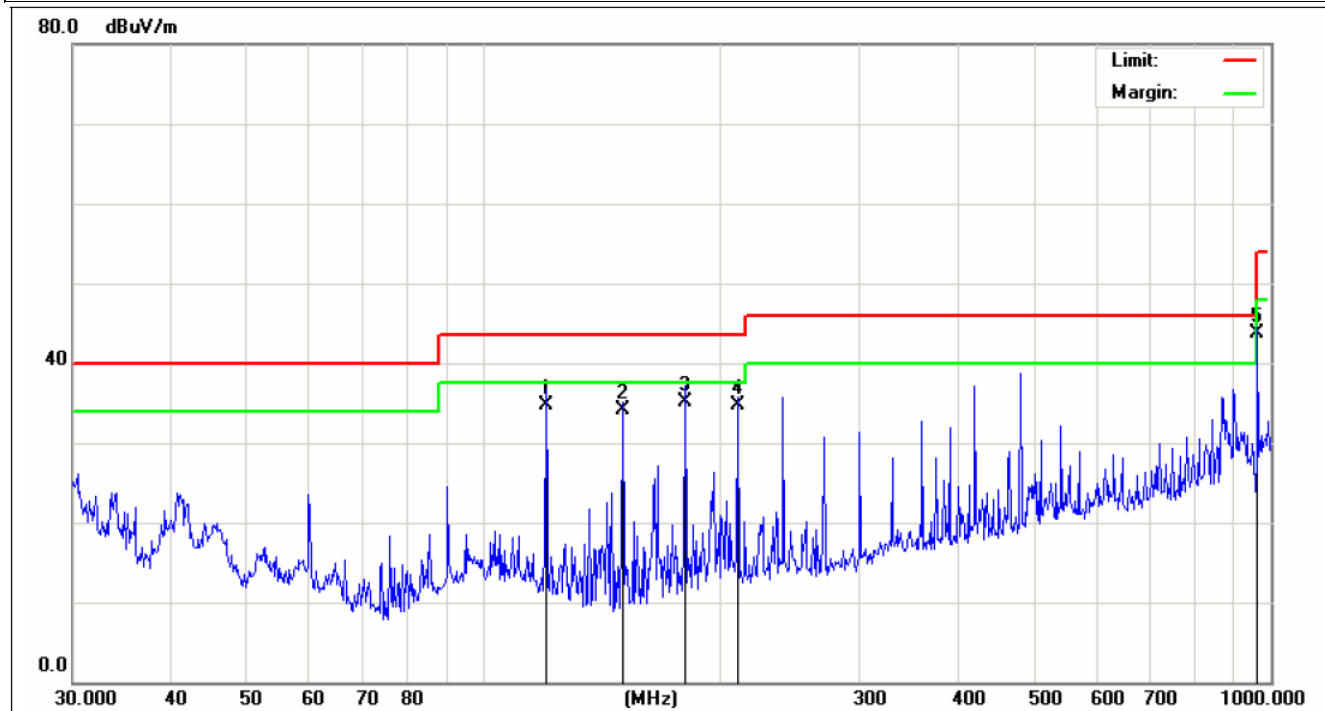
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 Park, Nanshan District, Shenzhen 518057, China

Tel: (86)755-26066365

Fax: (86)755-26014772

Http://www.anbotek.com

<b>Job No.:</b>	<b>AT1007625F</b>	<b>Polarization:</b>	<b>Vertical</b>
<b>Standard:</b>	<b>(RE)FCC Part 15_class B_3m</b>	<b>Power Source:</b>	<b>DC 5V via USB Port</b>
<b>Test item:</b>	<b>Radiation Test</b>	<b>Date:</b>	<b>2010/07/13</b>
<b>Temp.(C)/Hum.(%RH):</b>	<b>24.3( C)/55%RH</b>	<b>Time:</b>	<b>20:13:14</b>
<b>EUT:</b>	<b>Mobile Hard Drive</b>	<b>Test By:</b>	<b>Juice.Xu</b>
<b>Model:</b>	<b>DM189</b>	<b>Distance:</b>	<b>3m</b>
<b>Note:</b>	<b>Data Communicate</b>		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Remark
1	119.9981	59.84	-25.04	34.80	43.50	-8.70	QP
2	150.0107	61.18	-26.98	34.20	43.50	-9.30	QP
3	180.0065	60.49	-25.41	35.08	43.50	-8.42	QP
4	210.0482	58.62	-24.00	34.62	43.50	-8.88	QP
5	960.1038	51.80	-8.04	43.76	54.00	-10.24	QP