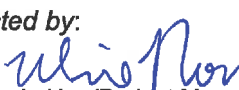



<b>Prüfbericht-Nr.:</b> <i>Test Report No.:</i>	<b>17041964 001</b>	<b>Auftrags-Nr.:</b> <i>Order No.:</i>	<b>164016483</b>	<b>Seite 1 von 39</b> <i>Page 1 of 39</i>
<b>Kunden-Referenz-Nr.:</b> <i>Client Reference No.:</i>	<b>N/A</b>	<b>Auftragsdatum:</b> <i>Order date:</i>	<b>02.07.2014</b>	
<b>Auftraggeber:</b> <i>Client:</i>	<b>Jiangmen Dascom Computer Peripherals Co., Ltd., No. 399, Jin Xing Road, Jiang Hai District, Jiangmen City, Guangdong Province 529040, P.R. China</b>			
<b>Prüfgegenstand:</b> <i>Test item:</i>	<b>Dot Matrix Printer</b>			
<b>Bezeichnung / Typ-Nr.:</b> <i>Identification / Type No.:</i>	<b>1325+, 1330, 1330+, 1330H (Tally/DASCOM)</b>			
<b>Auftrags-Inhalt:</b> <i>Order content:</i>	<b>FCC Certification</b>			
<b>Prüfgrundlage:</b> <i>Test specification:</i>	<b>FCC CFR47 Part 15: Subpart B Section 15.107 FCC CFR47 Part 15: Subpart B Section 15.109</b>			
<b>Wareneingangsdatum:</b> <i>Date of receipt:</i>	<b>17.06.2014</b>			
<b>Prüfmuster-Nr.:</b> <i>Test sample No.:</i>	<b>KAD140610031S01</b>			
<b>Prüfzeitraum:</b> <i>Testing period:</i>	<b>20.06.2014 - 07.07.2014</b>			
<b>Ort der Prüfung:</b> <i>Place of testing:</i>	<b>Dongguan EMTEK Co., Ltd. Shenzhen EMTEK Co., Ltd.</b>			
<b>Prüflaboratorium:</b> <i>Testing laboratory:</i>	<b>TÜV Rheinland (Shenzhen) Co., Ltd.</b>			
<b>Prüfergebnis*:</b> <i>Test result*:</i>	<b>Pass</b>			
<b>geprüft von / tested by:</b>		<b>kontrolliert von / reviewed by:</b>		
26.08.2014	 Winnie Hou/Project Manager	26.08.2014	 Owen Tian/Technical Certifier	
<b>Datum</b> <i>Date</i>	<b>Name / Stellung</b> <i>Name / Position</i>	<b>Unterschrift</b> <i>Signature</i>	<b>Datum</b> <i>Date</i>	<b>Name / Stellung</b> <i>Name / Position</i>
				<b>Unterschrift</b> <i>Signature</i>
<b>Sonstiges / Other:</b>		<b>FCC ID: Z7OTD13300</b>		
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> <i>Condition of the test item at delivery:</i>		<b>Prüfmuster vollständig und unbeschädigt</b> <i>Test item complete and undamaged</i>		
<b>* Legende:</b>	<b>1 = sehr gut</b> P(ass) = entspricht o.g. Prüfgrundlage(n)	<b>2 = gut</b> F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	<b>3 = befriedigend</b> N/A = nicht anwendbar	<b>4 = ausreichend</b> N/T = nicht getestet
<b>Legend:</b>	<b>1 = very good</b> P(ass) = passed a.m. test specification(s)	<b>2 = good</b> F(ail) = failed a.m. test specification(s)	<b>3 = satisfactory</b> N/A = not applicable	<b>4 = sufficient</b> N/T = not tested
<b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b> <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

v04

**Prüfbericht - Nr.: 17041964 001**  
*Test Report No.*

**Seite 2 von 39**  
*Page 2 of 39*

## TEST SUMMARY

### 5.1.1 CONDUCTED EMISSION

*RESULT: Pass*

### 5.2.1 RADIATED EMISSIONS

*RESULT: Pass*

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## 1. General Remarks

### 1.1 Complementary Materials

None.

## 2. Test Sites

### 2.1 Test Facilities

Dongguan EMTEK Co., Ltd.

**(FCC Registration No.: 247565)**

No. 281, Guantai Road, Nancheng District, Dongguan,  
Guangdong, 523077, P.R. China

Shenzhen EMTEK Co., Ltd.

**(FCC Registration No.: 709623)**

Bldg 69, Majialong Industry Zone, Nanshan District,  
Shenzhen, Guangdong, P.R. China

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
<b>Conducted Emission (Dongguan EMTEK)</b>				
Test Receiver	Rohde&Schwarz	ESCS30	100018	2015-05-16
L.I.S.N.	Rohde&Schwarz	ENV216	100017	2015-05-16
RF Switching Unit	CDS	RSU-M2	38401	2015-05-16
<b>Radiated Emission (30MHz - 1GHz) (Dongguan EMTEK)</b>				
Test Receiver	Rohde & Schwarz	ESCI	1166.5950.03	2015-05-16
Bilog Antenna	Schwarzbeck	VULB9163	000141	2015-05-16
Power Amplifier	CDS	RSU-M352	818	2015-05-16
Power Amplifier	HP	8447F	OPT H64	2015-05-16
Color Monitor	SUNSP0	SP-140A	N/A	2015-05-16
Single Line Filter	JIANLI	XL-3	N/A	2015-05-16
Single Phase Power Line Filter	JIANLI	DL-2X100B	N/A	2015-05-16
3 Phase Power Line Filter	JIANLI	DL-4X100B	N/A	2015-05-16
DC Power Filter	JIANLI	DL-2X50B	N/A	2015-05-16
Cable	Schwarzbeck	PLF-100	549489	2015-05-16
Cable	Rosenberger	CIL02	A0783566	2015-05-16
Cable	Rosenberger	RG 233/U	525178	2015-05-16
<b>Radiated Emission (1 - 2GHz) (Shenzhen EMTEK)</b>				
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.2 6	2015-05-17
Pre-Amplifier	HP	8447D	2944A07999	2015-05-17
Bilog Antenna	Schwarzbeck	VULB9163	142	2015-05-11
Loop Antenna	Schwarzbeck	FMZB 1519	012	2015-05-11
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA91703 99	2015-05-11
Horn Antenna	Schwarzbeck	BBHA 9120	D143	2015-05-11
Cable	Schwarzbeck	AK9513	ACRX1	2015-05-17
Cable	Rosenberger	N/A	FP2RX2	2015-05-17
Cable	Schwarzbeck	AK9513	CRPX1	2015-05-17
Cable	Schwarzbeck	AK9513	CRRX2	2015-05-17
Pre-Amplifier	A.H.	PAM-0126	1415261	2015-05-17

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

## 2.5 Measurement Uncertainty

**Table 2: Measurement Uncertainty**

Parameter	Uncertainty
Conducted Emission	< ± 2.40 dB
Radiated Emission (30 – 1000MHz)	< ± 3.43 dB
Radiated Emission (1 – 2GHz)	< ± 4.46 dB

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

Dongguan EMTEK Co., Ltd. test facility located at No. 281, Guantai Road, Nancheng District, Dongguan, Guangdong, 523077, P.R. China & Shenzhen EMTEK Co., Ltd. test facility located at Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, P.R. China are listed on the US Federal Communications Commission list of facilities approved to perform measurements.

### 3. General Product Information

#### 3.1 Product Function and Intended Use

The EUTs are Matrix Printer. These models are identical except the model name.  
For more information refer to the manufacturer's Circuit diagram & Instruction Manual.

#### 3.2 Ratings and System Details

Rated voltage: AC 100-120V, 50/60Hz  
Input current: 1.5A  
Protection class: I

#### 3.3 Independent Operation Modes

The basic operation modes are:

- A. On, printing
  - 1. Ethernet port input
  - 2. USB port input
  - 3. Serial port input
  - 4. Parallel port input
- B. Stand by
- C. Off

#### 3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

#### 3.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document
- Circuit Diagram
- Instruction Manual
- Rating Label

## 4. Test Set-up and Operation Modes

### 4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

### 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2003.

According to clause 3.1, all tests were applied on model 1330 only.

### 4.3 Special Accessories and Auxiliary Equipment

The EUTs were tested with following cables:

<b>Interface(s)/Port(s):</b>	<b>Max. cable length, shielding</b>	<b>Cable classification</b>
AC Input port	3 cores, 3m, non-shielded port	AC Input Power Port
RJ45 Ethernet port	8 cores, 3m, non-shielded port	Signal Port
USB port	4 cores, 3m, non-shielded port	Signal Port
Parallel port	25 cores, 3m, non-shielded port	Signal Port
Serial port	9 cores, 3m, non-shielded port	Signal Port

The EUTs were tested with following accessories:

<b>Accessory</b>	<b>Manufacturer</b>	<b>M/N</b>	<b>Serial No.</b>
<b>Dongguan EMTEK</b>			
PC	DELL	OPTIRLEX 760	N/A
LCD Monitor	DELL	E1909WF	N/A
Mouse	DELL	M-UAR DEL7	XN966
Keyboard	DELL	L30U	ON277F
Printer	HEWLETT PACKARD	Q5911A	CNCK512065
<b>Shenzhen EMTEK</b>			
PC	HP	Vectra VL420 MT	CN15100363
LCD Monitor	SONY	SDM-S53/B T8UC7	P-17465811-F
Mouse	Lenovo	MO28UOL	44D2639
Keyboard	Lenovo	KB-0225	41A5039
Printer	HP	C89520	CN25S182N6

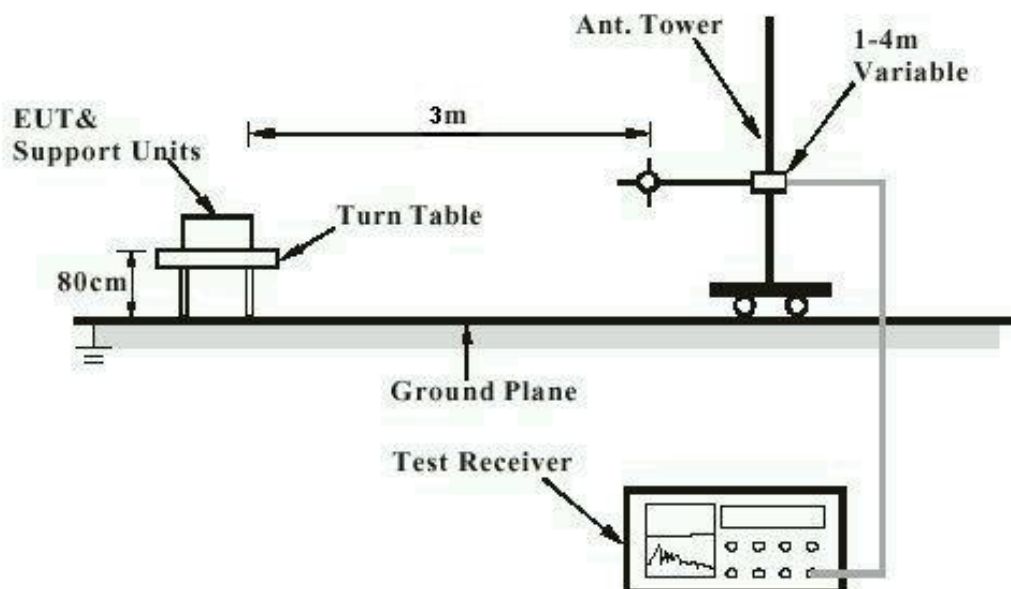


## 4.4 Countermeasures to achieve EMC Compliance

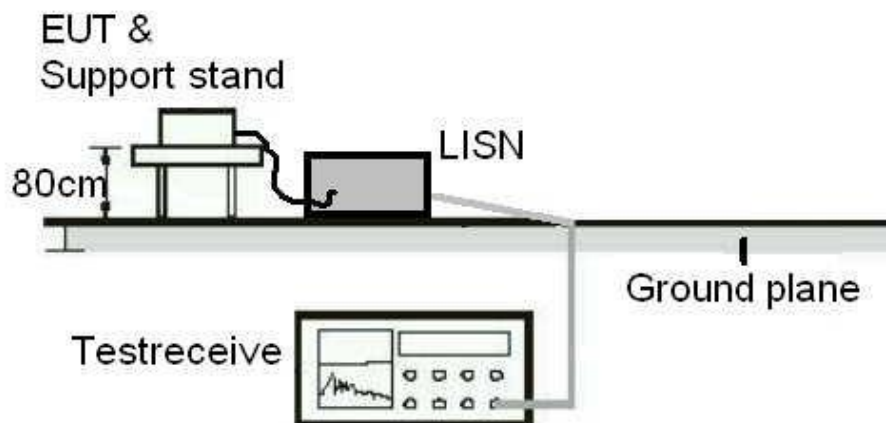
The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

## 4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test



## Diagram of Measurement Equipment Configuration for Conduction Measurement



## 5. Test Results EMISSION

### 5.1 Emission in the Frequency Range up to 30 MHz

#### 5.1.1 Conducted Emission

**RESULT:****Pass**

Date of testing : 2014-07-07  
Test standard : FCC Part15 Subpart B Section 15.107(a)  
Basic standard : ANSI C63.4: 2003  
Frequency range : 0.15 – 30MHz  
Limits : FCC Part15 Subpart B Section 15.107(a)  
Kind of test site : Shield room

**Test setup**

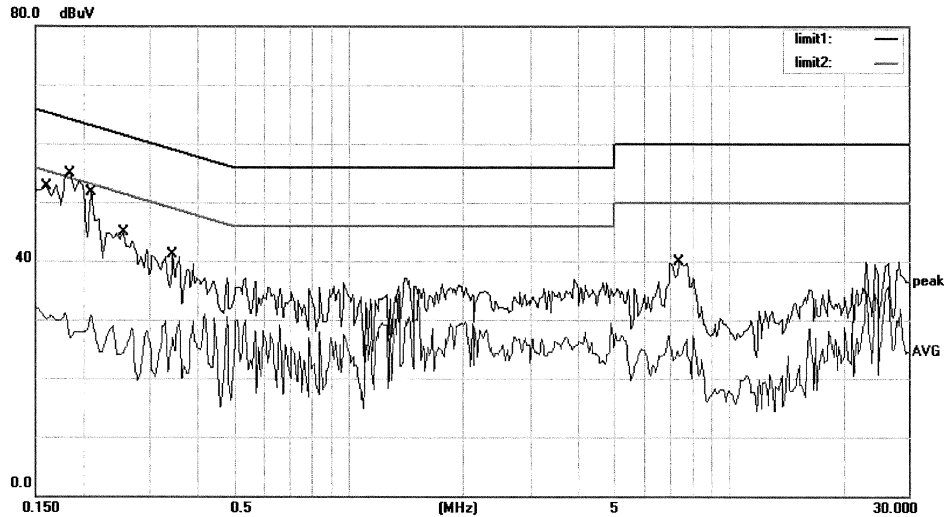
Input voltage : AC 120V, 60Hz  
Operation mode : A  
Earthing : Not connected  
Ambient temperature : 24°C  
Relative humidity : 55%  
Atmospheric pressure : 101kPa

For details refer to following test plot.

Dongguan EMTEK Co., Ltd.  
 No.281, Guantai Road, Nancheng District, Dongguan, Guangdong, China  
 www.emtek.com.cn Tel:+86-769-2280 7078 Fax:+86-769-2280 7079

**Conducted Emission Measurement**

File :1330      Data #16      Date: 14/07/07      Time: 9/34/41


 Site site #1      Phase: **L1**      Temperature: 24  
 Limit: (CE)FCC PART 15 class B\_QP      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Ethernet interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1600	49.70	0.00	49.70	65.46	-15.76	QP	
2		0.1600	30.75	0.00	30.75	55.46	-24.71	AVG	
3	*	0.1850	51.90	0.00	51.90	64.26	-12.36	QP	
4		0.1850	27.91	0.00	27.91	54.26	-26.35	AVG	
5		0.2100	48.70	0.00	48.70	63.21	-14.51	QP	
6		0.2100	30.77	0.00	30.77	53.21	-22.44	AVG	
7		0.2550	41.80	0.00	41.80	61.59	-19.79	QP	
8		0.2550	25.40	0.00	25.40	51.59	-26.19	AVG	
9		0.3450	38.30	0.00	38.30	59.08	-20.78	QP	
10		0.3450	26.90	0.00	26.90	49.08	-22.18	AVG	
11		7.3900	36.90	0.00	36.90	60.00	-23.10	QP	
12		7.3900	24.66	0.00	24.66	50.00	-25.34	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.

File :1330\Data :#16

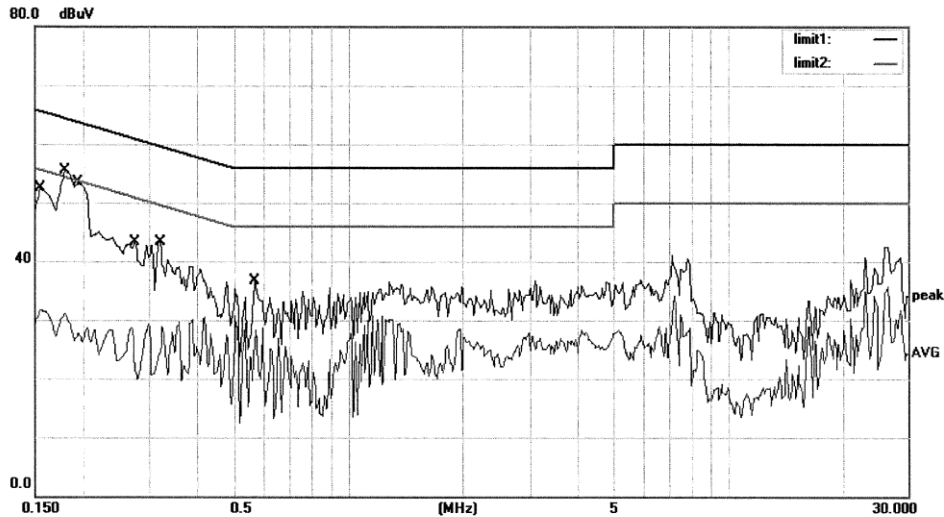
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**EMTEK**  
 Access to the World

**Conducted Emission Measurement**

File :1330      Data :#17      Date: 14/07/07      Time: 9/37/17


 Site site #1      Phase: **N**      Temperature: 24  
 Limit: (CE)FCC PART 15 class B\_QP      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Ethernet interface connection

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit		Detector	Comment
						dBuV	dB		
1		0.1550	49.30	0.00	49.30	65.73	-16.43	QP	
2		0.1550	31.70	0.00	31.70	55.73	-24.03	AVG	
3	*	0.1800	52.50	0.00	52.50	64.49	-11.99	QP	
4		0.1800	31.03	0.00	31.03	54.49	-23.46	AVG	
5		0.1965	50.20	0.00	50.20	63.76	-13.56	QP	
6		0.1965	28.63	0.00	28.63	53.76	-25.13	AVG	
7		0.2750	40.30	0.00	40.30	60.97	-20.67	QP	
8		0.2750	22.52	0.00	22.52	50.97	-28.45	AVG	
9		0.3200	40.20	0.00	40.20	59.71	-19.51	QP	
10		0.3200	28.88	0.00	28.88	49.71	-20.83	AVG	
11		0.5700	33.60	0.00	33.60	56.00	-22.40	QP	
12		0.5700	28.39	0.00	28.39	46.00	-17.61	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.

File :1330\Data :#17

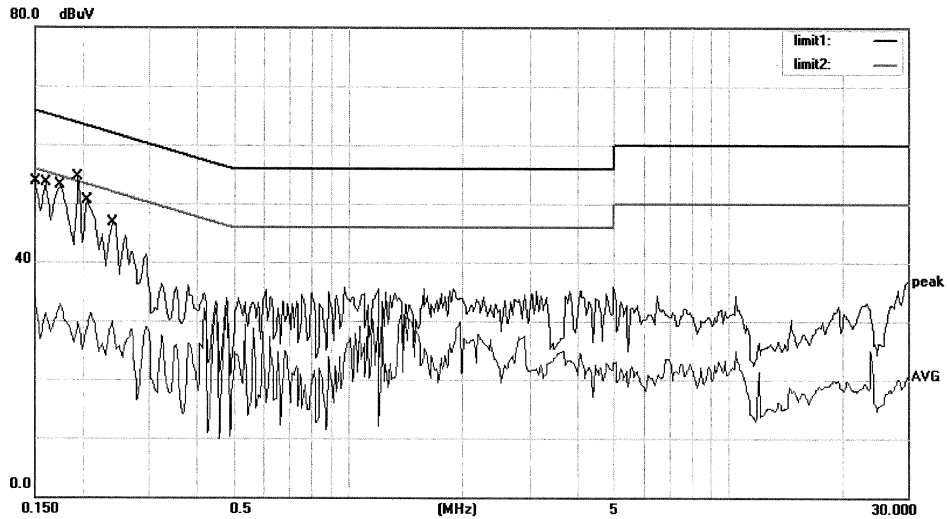
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**EMTEK**  
 Access to the World

**Conducted Emission Measurement**

File :1330      Data :#9      Date: 14/06/20/      Time: 14/20/03


 Site site #1      Phase: **L1**      Temperature: 24  
 Limit: (CE)FCC PART 15 class B\_QP      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: USB interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1500	53.76	0.00	53.76	66.00	-12.24	QP	
2		0.1500	33.85	0.00	33.85	56.00	-22.15	AVG	
3		0.1600	53.42	0.00	53.42	65.46	-12.04	QP	
4		0.1600	31.56	0.00	31.56	55.46	-23.90	AVG	
5		0.1750	53.05	0.00	53.05	64.72	-11.67	QP	
6		0.1750	32.98	0.00	32.98	54.72	-21.74	AVG	
7	*	0.1950	54.46	0.00	54.46	63.82	-9.36	QP	
8		0.1950	29.70	0.00	29.70	53.82	-24.12	AVG	
9		0.2071	49.82	0.00	49.82	63.32	-13.50	QP	
10		0.2071	31.29	0.00	31.29	53.32	-22.03	AVG	
11		0.2400	46.77	0.00	46.77	62.10	-15.33	QP	
12		0.2400	29.98	0.00	29.98	52.10	-22.12	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.

File :1330\Data :#9

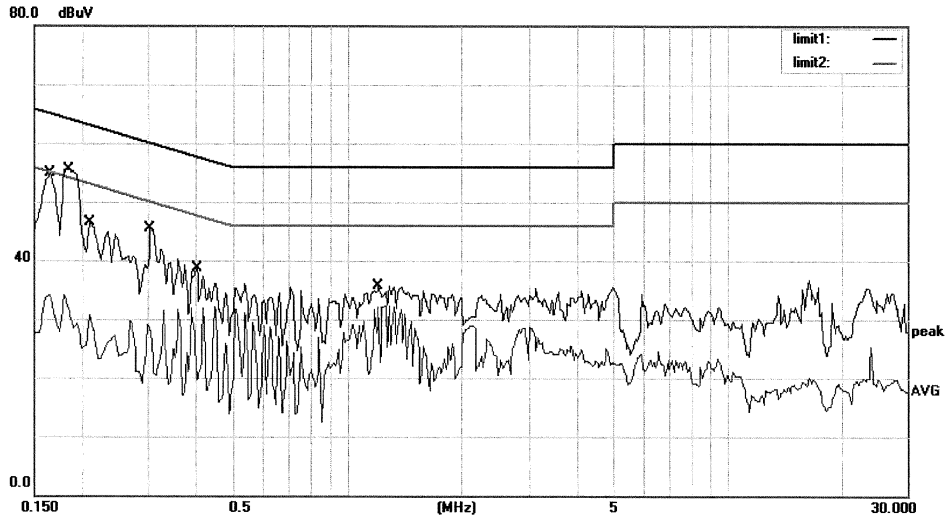
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**EMTEK**  
 Access to the World

**Conducted Emission Measurement**

File :1330      Data :#8      Date: 14/06/20/      Time: 14/17/02


 Site site #1      Phase: **N**      Temperature: 24  
 Limit: (CE)FCC PART 15 class B\_QP      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: USB interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1650	52.84	0.00	52.84	65.21	-12.37	QP	
2		0.1650	34.08	0.00	34.08	55.21	-21.13	AVG	
3	*	0.1864	53.47	0.00	53.47	64.20	-10.73	QP	
4		0.1864	34.17	0.00	34.17	54.20	-20.03	AVG	
5		0.2100	46.48	0.00	46.48	63.21	-16.73	QP	
6		0.2100	30.68	0.00	30.68	53.21	-22.53	AVG	
7		0.3050	45.55	0.00	45.55	60.11	-14.56	QP	
8		0.3050	29.03	0.00	29.03	50.11	-21.08	AVG	
9		0.4050	38.66	0.00	38.66	57.75	-19.09	QP	
10		0.4050	31.99	0.00	31.99	47.75	-15.76	AVG	
11		1.2050	35.70	0.00	35.70	56.00	-20.30	QP	
12		1.2050	32.25	0.00	32.25	46.00	-13.75	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.

File :1330\Data :#8

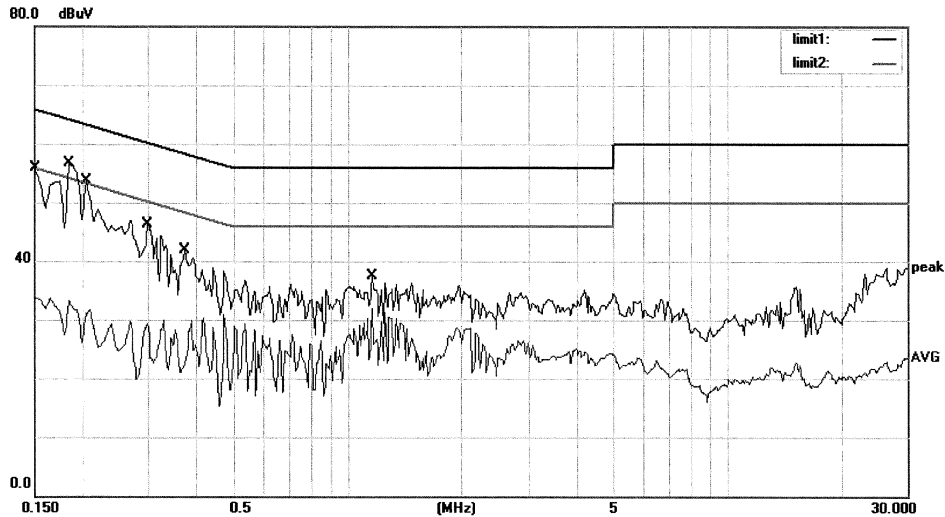
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**Conducted Emission Measurement**

File :1330      Data :#10      Date: 14/06/20/      Time: 14/25/10


 Site site #1      Phase: **L1**      Temperature: 24  
 Limit: (CE)FCC PART 15 class B\_QP      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Serial interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1500	55.88	0.00	55.88	66.00	-10.12	QP	
2		0.1500	33.79	0.00	33.79	56.00	-22.21	AVG	
3	*	0.1850	56.61	0.00	56.61	64.26	-7.65	QP	
4		0.1850	33.22	0.00	33.22	54.26	-21.04	AVG	
5		0.2050	53.63	0.00	53.63	63.41	-9.78	QP	
6		0.2050	31.71	0.00	31.71	53.41	-21.70	AVG	
7		0.3000	46.40	0.00	46.40	60.24	-13.84	QP	
8		0.3000	29.26	0.00	29.26	50.24	-20.98	AVG	
9		0.3770	41.00	0.00	41.00	58.35	-17.35	QP	
10		0.3770	29.94	0.00	29.94	48.35	-18.41	AVG	
11		1.1650	37.46	0.00	37.46	56.00	-18.54	QP	
12		1.1650	31.83	0.00	31.83	46.00	-14.17	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.

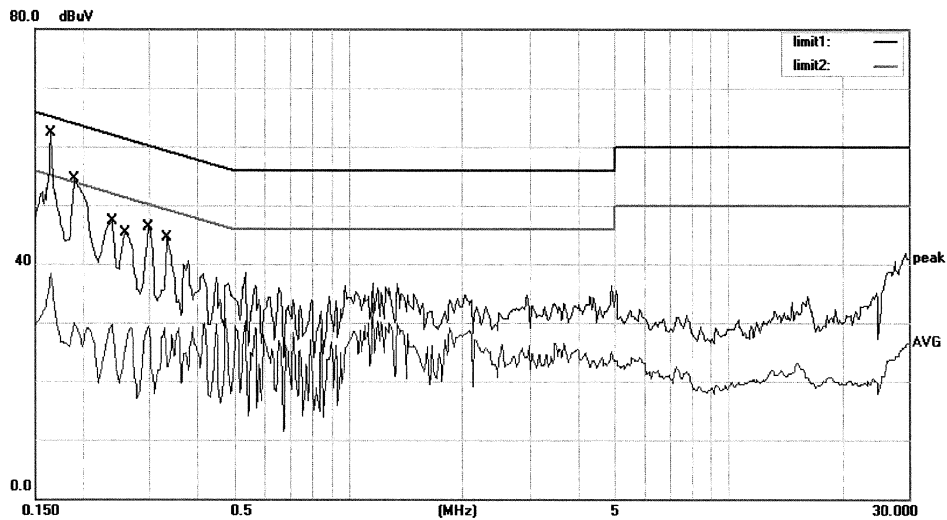


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**Conducted Emission Measurement**

File :1330      Data :#11      Date: 14/06/20/      Time: 14/28/31


 Site site #1      Phase: **N**      Temperature: 24  
 Limit: (CE)FCC PART 15 class B\_QP      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Serial interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1	*	0.1650	58.37	0.00	58.37	65.21	-6.84	QP	
2		0.1650	35.33	0.00	35.33	55.21	-19.88	AVG	
3		0.1900	54.46	0.00	54.46	64.04	-9.58	QP	
4		0.1900	29.92	0.00	29.92	54.04	-24.12	AVG	
5		0.2400	47.27	0.00	47.27	62.10	-14.83	QP	
6		0.2400	29.72	0.00	29.72	52.10	-22.38	AVG	
7		0.2600	45.34	0.00	45.34	61.43	-16.09	QP	
8		0.2600	29.13	0.00	29.13	51.43	-22.30	AVG	
9		0.3000	46.29	0.00	46.29	60.24	-13.95	QP	
10		0.3000	29.28	0.00	29.28	50.24	-20.96	AVG	
11		0.3350	44.59	0.00	44.59	59.33	-14.74	QP	
12		0.3350	29.03	0.00	29.03	49.33	-20.30	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.

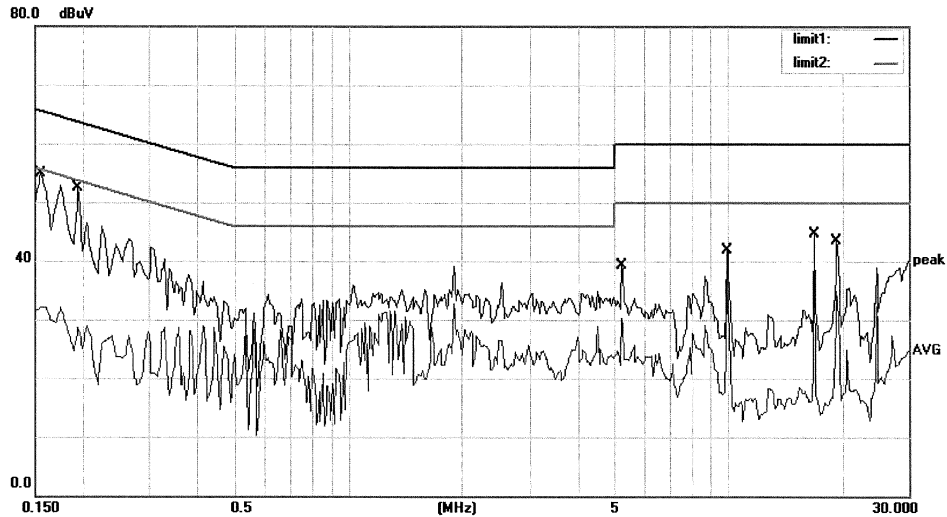
File :1330\Data :#11

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**Conducted Emission Measurement**

File :1330      Data :#13      Date: 14/06/20/      Time: 14/37/24



Site site #1	Phase: <b>L1</b>	Temperature: 24
Limit: (CE)FCC PART 15 class B_QP	Power: AC 120V/60Hz	Humidity: 55 %
EUT: Dot Matrix Printer		
M/N: 1330		
Mode: Printing		
Note: Parallel interface connection		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1550	54.93	0.00	54.93	65.73	-10.80	QP	
2		0.1550	32.13	0.00	32.13	55.73	-23.60	AVG	
3		0.1950	52.41	0.00	52.41	63.82	-11.41	QP	
4		0.1950	31.23	0.00	31.23	53.82	-22.59	AVG	
5		5.2400	39.32	0.00	39.32	60.00	-20.68	QP	
6		5.2400	30.25	0.00	30.25	50.00	-19.75	AVG	
7		9.9600	41.95	0.00	41.95	60.00	-18.05	QP	
8		9.9600	37.55	0.00	37.55	50.00	-12.45	AVG	
9		16.9250	44.62	0.00	44.62	60.00	-15.38	QP	
10	*	16.9250	41.98	0.00	41.98	50.00	-8.02	AVG	
11		19.4000	43.51	0.00	43.51	60.00	-16.49	QP	
12		19.4000	34.91	0.00	34.91	50.00	-15.09	AVG	

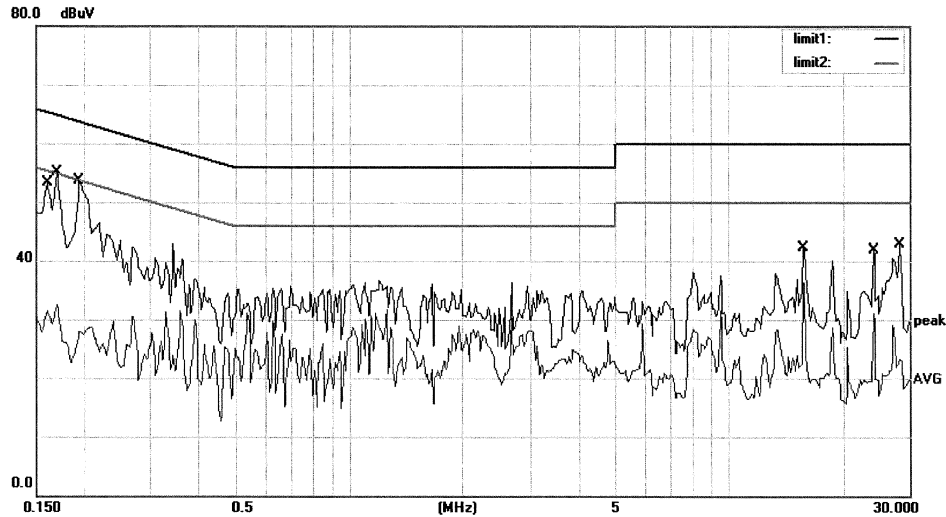
\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.

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**Conducted Emission Measurement**

File :1330      Data #12      Date: 14/06/20/      Time: 14/34/39


 Site site #1      Phase: **N**      Temperature: 24  
 Limit: (CE)FCC PART 15 class B\_QP      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Parallel interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1600	53.32	0.00	53.32	65.46	-12.14	QP	
2		0.1600	31.53	0.00	31.53	55.46	-23.93	AVG	
3	*	0.1700	55.04	0.00	55.04	64.96	-9.92	QP	
4		0.1700	32.53	0.00	32.53	54.96	-22.43	AVG	
5		0.1950	53.64	0.00	53.64	63.82	-10.18	QP	
6		0.1950	28.61	0.00	28.61	53.82	-25.21	AVG	
7		15.8000	42.34	0.00	42.34	60.00	-17.66	QP	
8		15.8000	36.39	0.00	36.39	50.00	-13.61	AVG	
9		24.2500	41.99	0.00	41.99	60.00	-18.01	QP	
10		24.2500	31.16	0.00	31.16	50.00	-18.84	AVG	
11		28.2750	42.81	0.00	42.81	60.00	-17.19	QP	
12		28.2750	26.09	0.00	26.09	50.00	-23.91	AVG	

\*:Maximum data    x:Over limit    !:over margin    Comment: Factor build in receiver.

**Prüfbericht - Nr.: 17041964 001**

Test Report No.

Seite 20 von 39

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## 5.2 Emission in the Frequency Range above 30 MHz

### 5.2.1 Radiated emissions

**RESULT:****Pass**

Date of testing	:	2014-07-04
Test standard	:	FCC Part15 Subpart B Section 15.109(a)
Basic standard	:	ANSI C63.4: 2003
Frequency range	:	30 – 2000MHz *
Limits	:	FCC Part15 Subpart B Section 15.109(a)
Kind of test site	:	3m Semi-Anechoic Chamber

**Test Setup**

Input voltage	:	AC 120V, 60Hz
Operation mode	:	A
Earthing	:	Not Connected
Ambient temperature	:	24°C
Relative humidity	:	55%
Atmospheric pressure	:	101kPa

\*- The EUT's highest frequency generated and used is 480MHz, hence the highest scan frequency is up to 2GHz only.

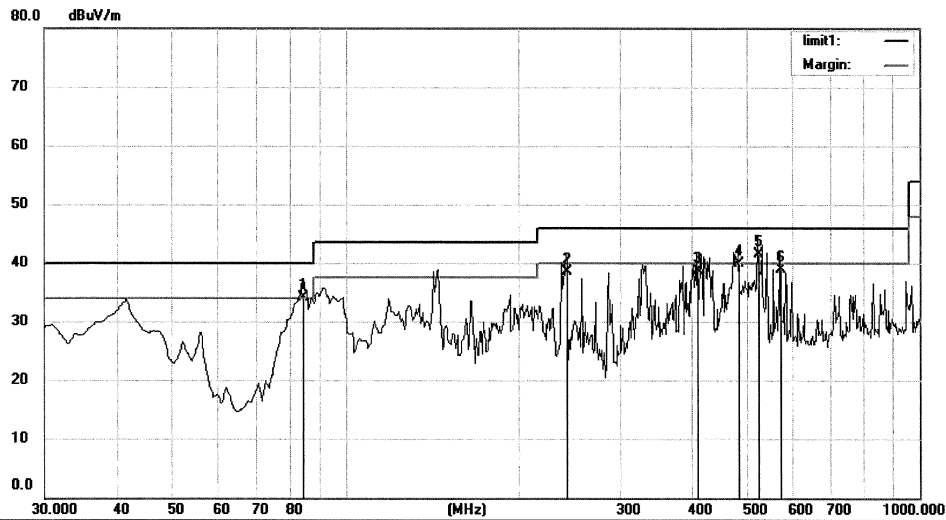
For details refer to following test plot.

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**Radiated Emission Measurement**

File :1330      Data :#9      Date: 2014-7-3      Time: 17:06:47


 Site Chamber #1      Polarization: **Horizontal**      Temperature: 24  
 Limit: (RE)FCC PART 15 class B 3m      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Ethernet interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	!	84.3200	53.60	-19.47	34.13	40.00	-5.87	QP		
2		242.4300	51.50	-13.03	38.47	46.00	-7.53	QP		
3		410.2400	47.40	-8.70	38.70	46.00	-7.30	QP		
4		484.9300	47.30	-7.47	39.83	46.00	-6.17	QP		
5	*	522.7600	48.50	-7.02	41.48	46.00	-4.52	QP		
6		573.2000	45.30	-6.41	38.89	46.00	-7.11	QP		

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

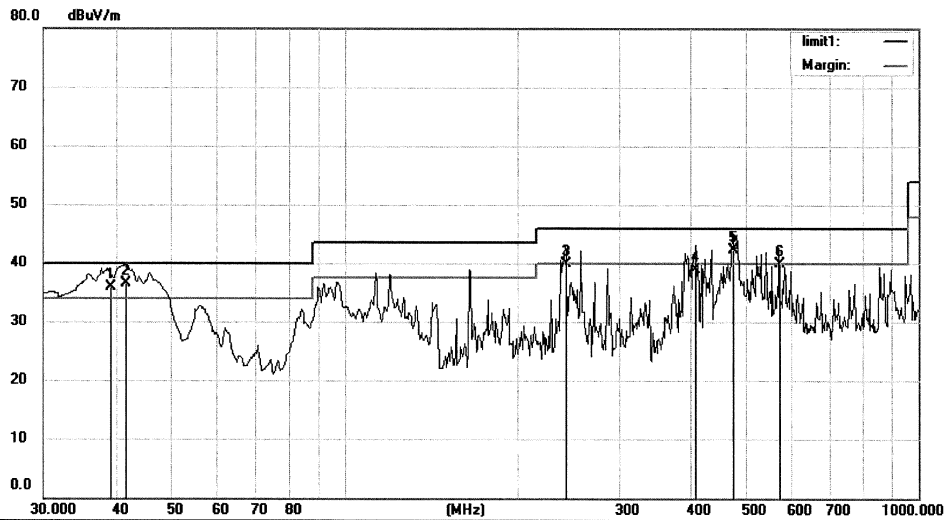
File :1330&gt;Data :#9

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**Radiated Emission Measurement**

File :1330      Data :#10      Date: 2014-7-3      Time: 17:13:01



Site Chamber #1      Polarization: **Vertical**      Temperature: 24  
 Limit: (RE)FCC PART 15 class B 3m      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Ethernet interface connection

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	!	39.1613	52.10	-16.20	35.90	40.00	-4.10	QP		
2	*	41.6400	52.70	-16.12	36.58	40.00	-3.42	QP		
3		242.4300	53.00	-13.03	39.97	46.00	-6.03	QP		
4		408.3000	47.60	-8.75	38.85	46.00	-7.15	QP		
5	!	475.2300	50.10	-7.72	42.38	46.00	-3.62	QP		
6		573.2000	46.30	-6.41	39.89	46.00	-6.11	QP		

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

File :1330\Data :#10

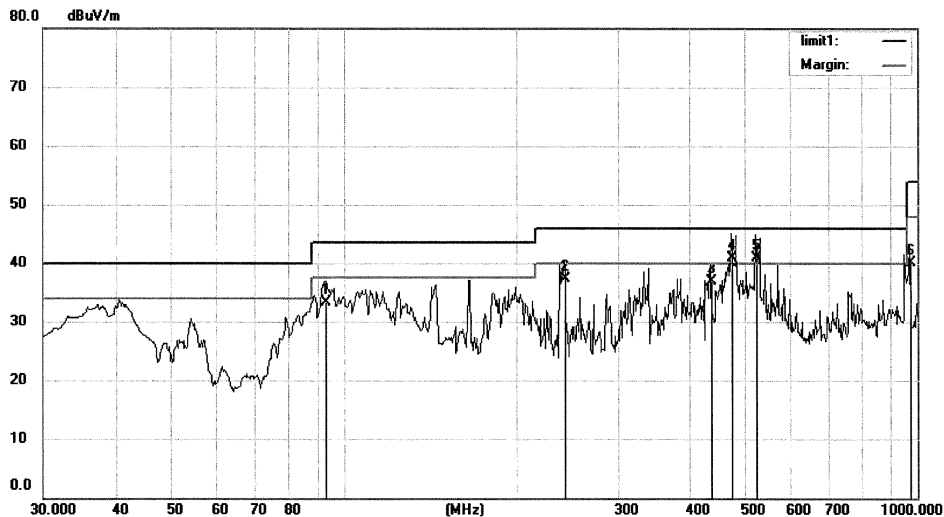
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**Radiated Emission Measurement**

File :1330      Data :#11      Date: 2014-7-3      Time: 17:19:48



Site Chamber #1      Polarization: **Horizontal**      Temperature: 24  
 Limit: (RE)FCC PART 15 class B 3m      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: USB interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		93.1131	50.30	-17.00	33.30	43.50	-10.20	QP		
2		242.4300	50.40	-13.03	37.37	46.00	-8.63	QP		
3		436.4300	45.20	-8.26	36.94	46.00	-9.06	QP		
4	*	475.2300	48.60	-7.72	40.88	46.00	-5.12	QP		
5	!	522.7600	47.90	-7.02	40.88	46.00	-5.12	QP		
6		969.9300	41.70	-1.59	40.11	54.00	-13.89	QP		

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

File :1330\Data :#11

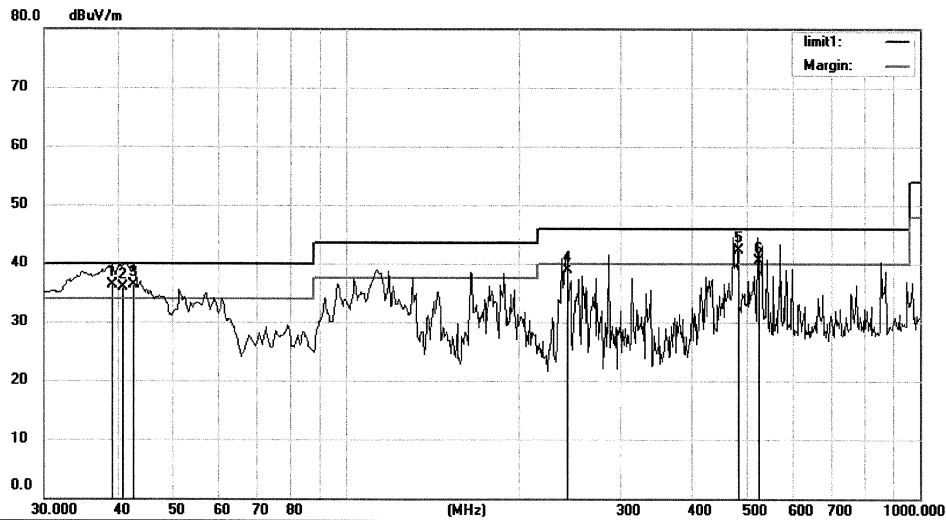
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**Radiated Emission Measurement**

File :1330      Data :#12      Date: 2014-7-3      Time: 17:23:28



Site Chamber #1      Polarization: **Vertical**      Temperature: 24  
 Limit: (RE)FCC PART 15 class B 3m      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: USB interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	39.1613	52.58	-16.20	36.38	40.00	-3.62	QP		
2	!	40.9880	52.10	-16.13	35.97	40.00	-4.03	QP		
3	!	42.6100	52.40	-16.13	36.27	40.00	-3.73	QP		
4		242.4300	51.90	-13.03	38.87	46.00	-7.13	QP		
5	!	484.9300	49.80	-7.47	42.33	46.00	-3.67	QP		
6	!	522.7600	47.60	-7.02	40.58	46.00	-5.42	QP		

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

File :1330\Data :#12

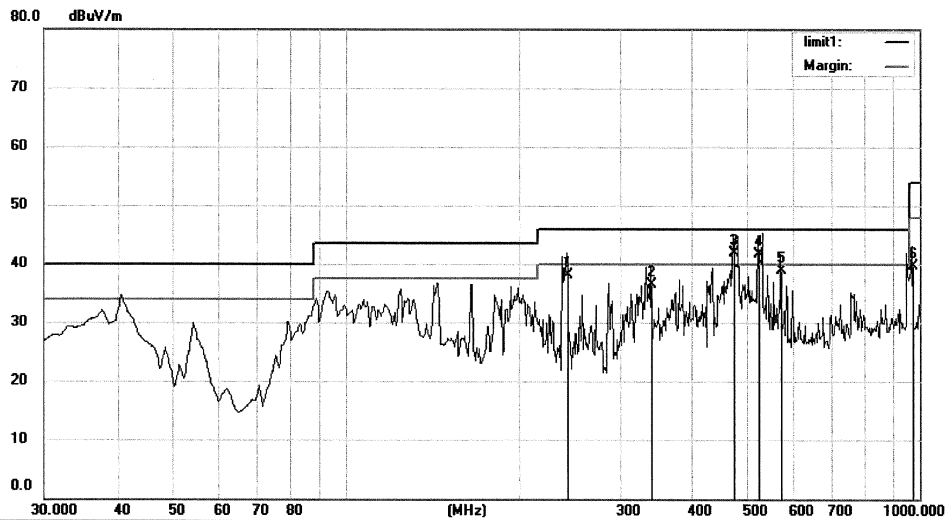
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**Radiated Emission Measurement**

File :1330      Data :#16      Date: 2014-7-3      Time: 17:49:48



Site Chamber #1      Polarization: **Horizontal**      Temperature: 24  
 Limit: (RE)FCC PART 15 class B 3m      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Serial interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		242.4300	51.20	-13.03	38.17	46.00	-7.83	QP		
2		339.4300	47.10	-10.50	36.60	46.00	-9.40	QP		
3	*	475.2300	49.60	-7.72	41.88	46.00	-4.12	QP		
4	!	522.7600	48.80	-7.02	41.78	46.00	-4.22	QP		
5		573.2000	45.30	-6.41	38.89	46.00	-7.11	QP		
6		969.9300	41.20	-1.59	39.61	54.00	-14.39	QP		

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

File :1330\Data :#16

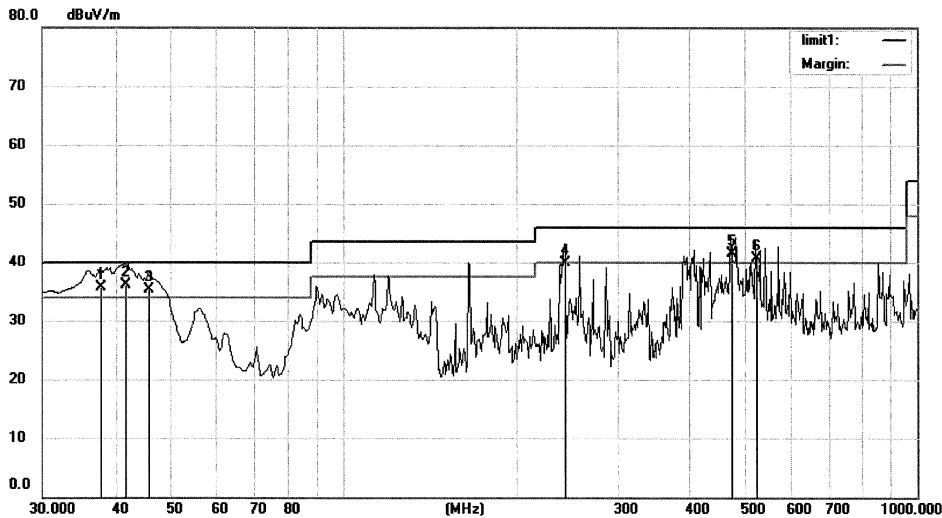
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**Radiated Emission Measurement**

File :1330      Data :#15      Date: 2014-7-3      Time: 17:42:01



Site Chamber #1      Polarization: **Vertical**      Temperature: 24  
 Limit: (RE)FCC PART 15 class B 3m      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Serial interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	!	37.8121	52.10	-16.34	35.76	40.00	-4.24	QP		
2	*	41.6400	52.30	-16.12	36.18	40.00	-3.82	QP		
3	!	45.6946	51.50	-16.17	35.33	40.00	-4.67	QP		
4		242.4300	53.00	-13.03	39.97	46.00	-6.03	QP		
5	!	475.2300	49.20	-7.72	41.48	46.00	-4.52	QP		
6	!	522.7600	47.80	-7.02	40.78	46.00	-5.22	QP		

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

File :1330&gt;Data :#15

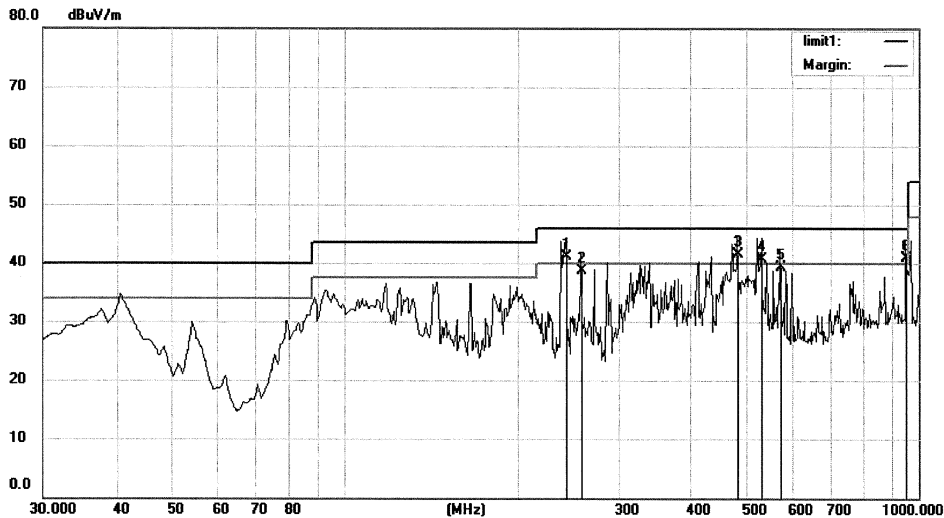
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**Radiated Emission Measurement**

File :1330      Data :#14      Date: 2014-7-3      Time: 17:37:10


 Site Chamber #1      Polarization: **Horizontal**      Temperature: 24  
 Limit: (RE)FCC PART 15 class B 3m      Power: AC 120V/60Hz      Humidity: 55 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Parallel interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	!	242.4300	54.20	-13.03	41.17	46.00	-4.83	QP		
2		257.9500	51.70	-12.96	38.74	46.00	-7.26	QP		
3	*	484.9300	48.90	-7.47	41.43	46.00	-4.57	QP		
4	!	533.4300	47.60	-6.90	40.70	46.00	-5.30	QP		
5		573.2000	45.70	-6.41	39.29	46.00	-6.71	QP		
6	!	951.5000	42.60	-1.79	40.81	46.00	-5.19	QP		

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

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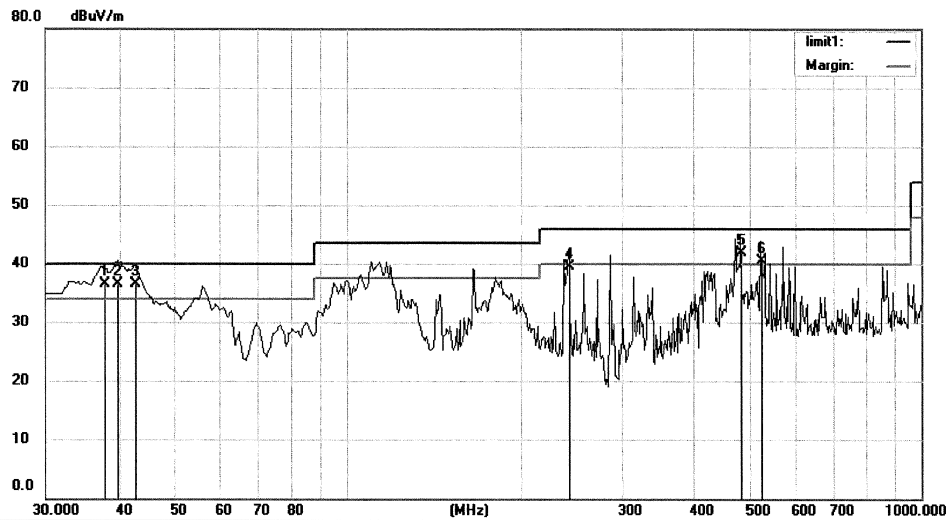
**Radiated Emission Measurement**

File :1330

Data :#13

Date: 2014-7-3

Time: 17:30:10



Site Chamber #1

 Polarization: **Vertical**

Temperature: 24

Limit: (RE)FCC PART 15 class B 3m

Power: AC 120V/60Hz

Humidity: 55 %

EUT: Dot Matrix Printer

M/N: 1330

Mode:Printing

Note: Parallel interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	!	37.7600	52.90	-16.35	36.55	40.00	-3.45	QP		
2	!	39.7146	52.70	-16.15	36.55	40.00	-3.45	QP		
3	*	42.6100	52.70	-16.13	36.57	40.00	-3.43	QP		
4		242.4300	52.50	-13.03	39.47	46.00	-6.53	QP		
5	!	484.9300	49.30	-7.47	41.83	46.00	-4.17	QP		
6	!	522.7600	47.60	-7.02	40.58	46.00	-5.42	QP		

\*:Maximum data x:Over limit !:over margin

Operator: Bruce

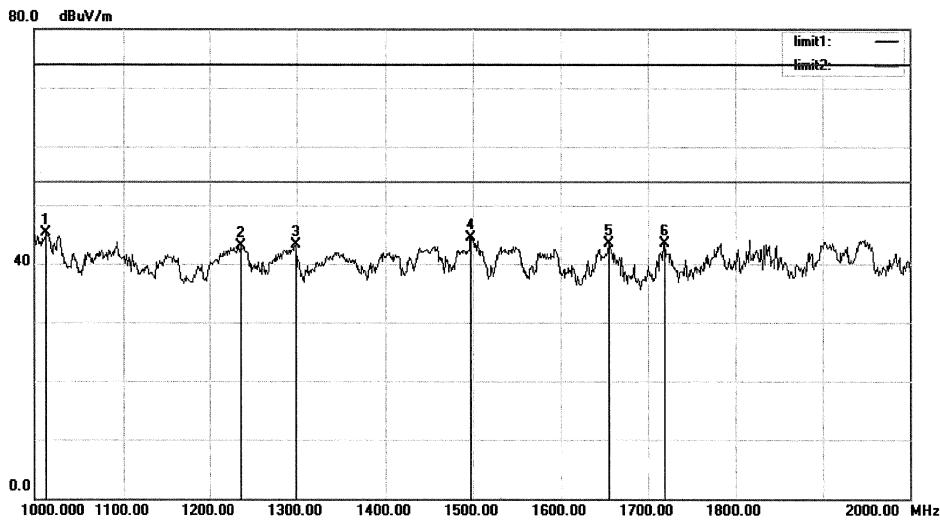
File :1330\Data :#13

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**Radiated Emission Measurement**

File :1330                      Data :#42                      Date: 2014/07/4                      Time: 15:39:14



Site site #1                      Polarization: **Horizontal**                      Temperature: 24  
 Limit: ( RE)FCC PART 15 CLASS B Peak                      Power: AC 120V/60Hz                      Humidity: 53 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Ethernet interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	1013.000	68.24	-22.88	45.36	74.00	-28.64	peak	0	
2		1236.000	66.62	-23.53	43.09	74.00	-30.91	peak	0	
3		1299.000	66.84	-23.56	43.28	74.00	-30.72	peak	0	
4		1498.000	68.55	-24.08	44.47	74.00	-29.53	peak	0	
5		1655.000	68.22	-24.75	43.47	74.00	-30.53	peak	0	
6		1719.000	68.57	-24.98	43.59	74.00	-30.41	peak	0	

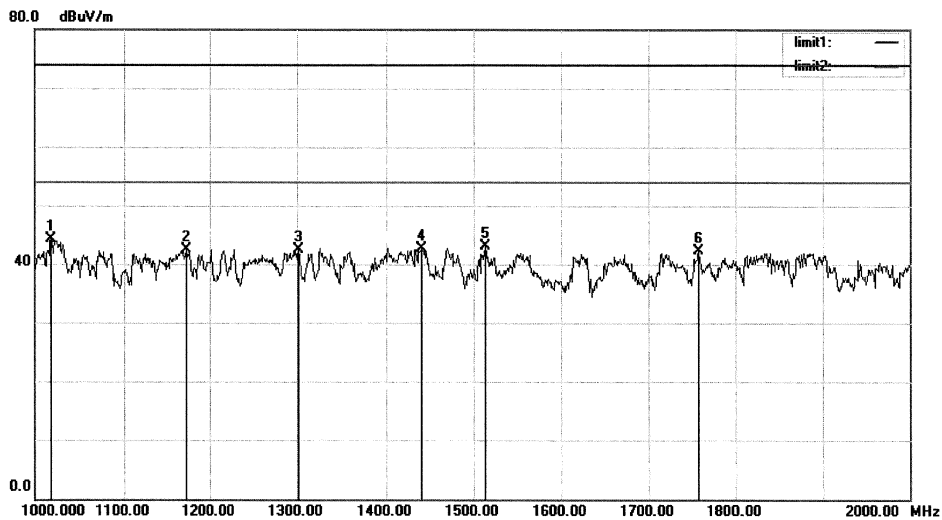
\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

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**Radiated Emission Measurement**

File: 1330      Data: #41      Date: 2014/07/4      Time: 15:32:24



Site site #1      Polarization: **Vertical**      Temperature: 24  
 Limit: (RE)FCC PART 15 CLASS B Peak      Power: AC 120V/60Hz      Humidity: 53 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Ethernet interface connection

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	1018.000	67.16	-22.90	44.26	74.00	-29.74	peak	0	
2		1172.000	65.91	-23.42	42.49	74.00	-31.51	peak	0	
3		1302.000	66.10	-23.56	42.54	74.00	-31.46	peak	0	
4		1441.000	66.52	-23.80	42.72	74.00	-31.28	peak	0	
5		1514.000	67.25	-24.15	43.10	74.00	-30.90	peak	0	
6		1758.000	67.37	-25.11	42.26	74.00	-31.74	peak	0	

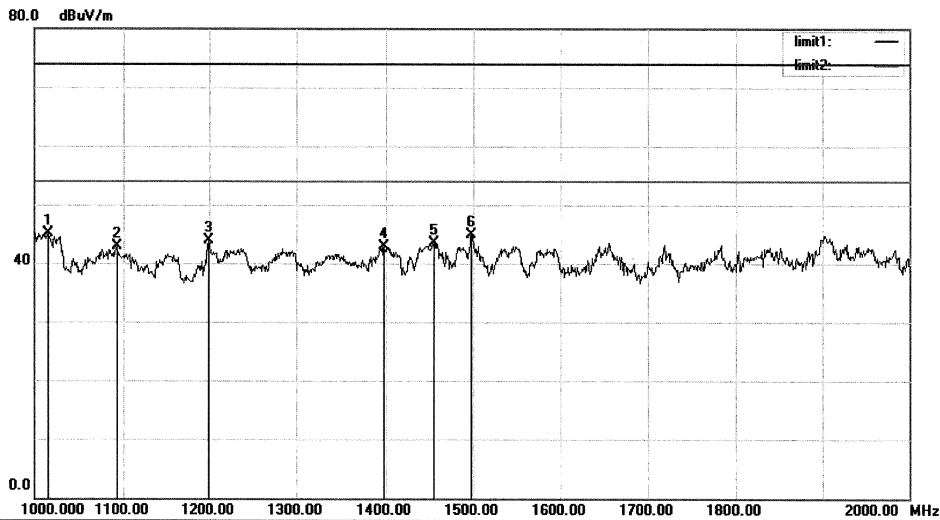
\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

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**Radiated Emission Measurement**

File :1330                      Data :#46                      Date: 2014/07/4                      Time: 16:15:03



Site site #1                      Polarization: **Horizontal**                      Temperature: 24  
 Limit: ( RE)FCC PART 15 CLASS B Peak                      Power: AC 120V/60Hz                      Humidity: 53 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: USB interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	1015.000	67.91	-22.89	45.02	74.00	-28.98	peak	0	
2		1092.000	66.00	-23.15	42.85	74.00	-31.15	peak	0	
3		1199.000	67.51	-23.52	43.99	74.00	-30.01	peak	0	
4		1398.000	66.60	-23.60	43.00	74.00	-31.00	peak	0	
5		1455.000	67.35	-23.86	43.49	74.00	-30.51	peak	0	
6		1498.000	69.05	-24.08	44.97	74.00	-29.03	peak	0	

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

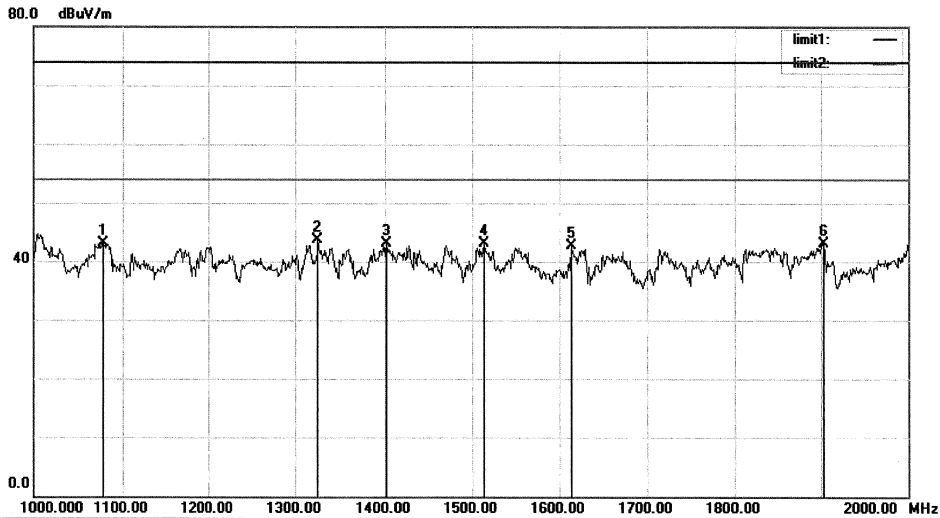
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**Radiated Emission Measurement**

File: 1330      Data: #45      Date: 2014/07/4      Time: 16:09:23



Site site #1      Polarization: **Vertical**      Temperature: 24  
 Limit: (RE)FCC PART 15 CLASS B Peak      Power: AC 120V/60Hz      Humidity: 53 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: USB interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		1078.000	66.17	-23.10	43.07	74.00	-30.93	peak	0	
2	*	1325.000	67.33	-23.56	43.77	74.00	-30.23	peak	0	
3		1402.000	66.80	-23.60	43.20	74.00	-30.80	peak	0	
4		1514.000	67.25	-24.15	43.10	74.00	-30.90	peak	0	
5		1614.000	67.34	-24.62	42.72	74.00	-31.28	peak	0	
6		1903.000	68.28	-25.19	43.09	74.00	-30.91	peak	0	

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

File :1330\Data :#45

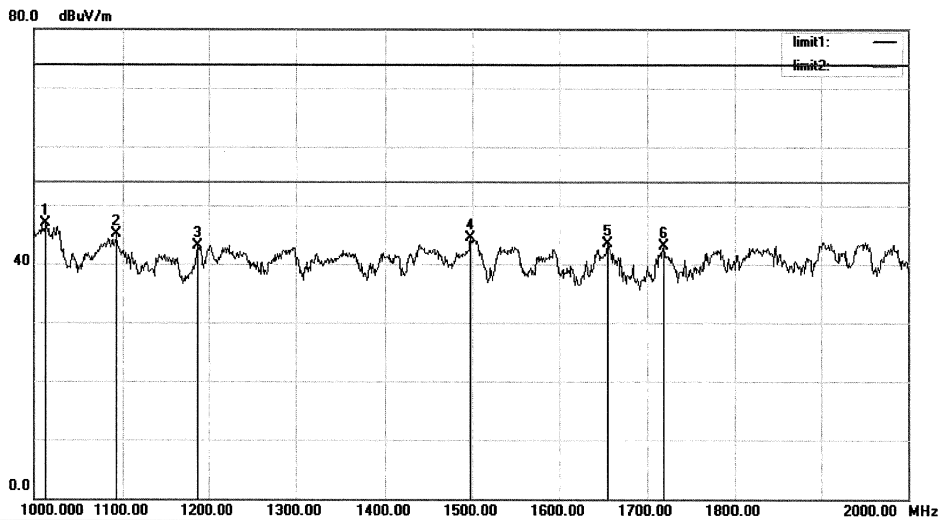
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**Radiated Emission Measurement**

File: 1330      Data: #48      Date: 2014/07/4      Time: 16:32:08



Site site #1      Polarization: **Horizontal**      Temperature: 24  
 Limit: (RE)FCC PART 15 CLASS B Peak      Power: AC 120V/60Hz      Humidity: 53 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Serial interface connection

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1	*	1013.000	69.74	-22.88	46.86	74.00	-27.14	peak	0	
2		1093.000	68.31	-23.16	45.15	74.00	-28.85	peak	0	
3		1187.000	66.54	-23.48	43.06	74.00	-30.94	peak	0	
4		1498.000	68.55	-24.08	44.47	74.00	-29.53	peak	0	
5		1655.000	68.22	-24.75	43.47	74.00	-30.53	peak	0	
6		1719.000	68.07	-24.98	43.09	74.00	-30.91	peak	0	

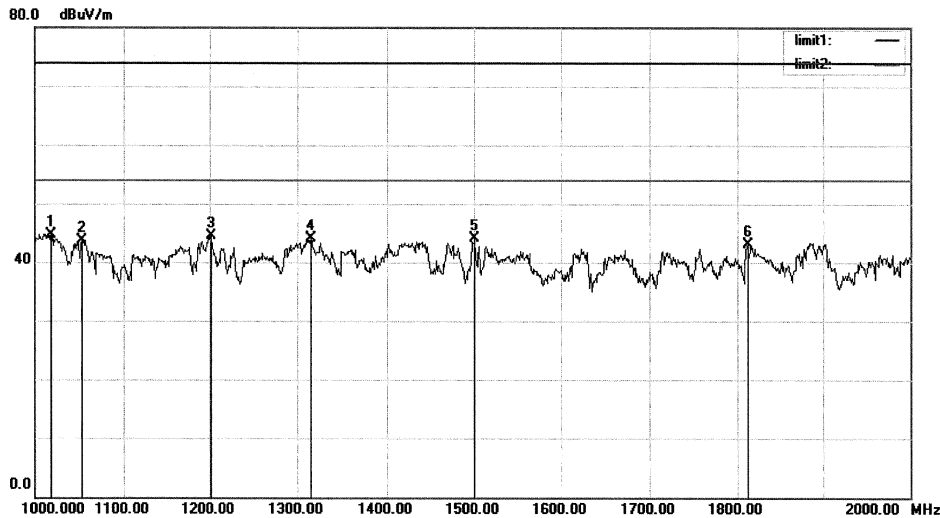
\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

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**Radiated Emission Measurement**

File :1330      Data :#47      Date: 2014/07/4      Time: 16:26:37



Site site #1      Polarization: **Vertical**      Temperature: 24  
 Limit: ( RE)FCC PART 15 CLASS B Peak      Power: AC 120V/60Hz      Humidity: 53 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Serial interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	1018.000	67.66	-22.90	44.76	74.00	-29.24	peak	0	
2		1053.000	66.73	-23.01	43.72	74.00	-30.28	peak	0	
3		1202.000	67.98	-23.52	44.46	74.00	-29.54	peak	0	
4		1315.000	67.66	-23.56	44.10	74.00	-29.90	peak	0	
5		1501.000	68.09	-24.08	44.01	74.00	-29.99	peak	0	
6		1812.000	68.27	-25.25	43.02	74.00	-30.98	peak	0	

\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

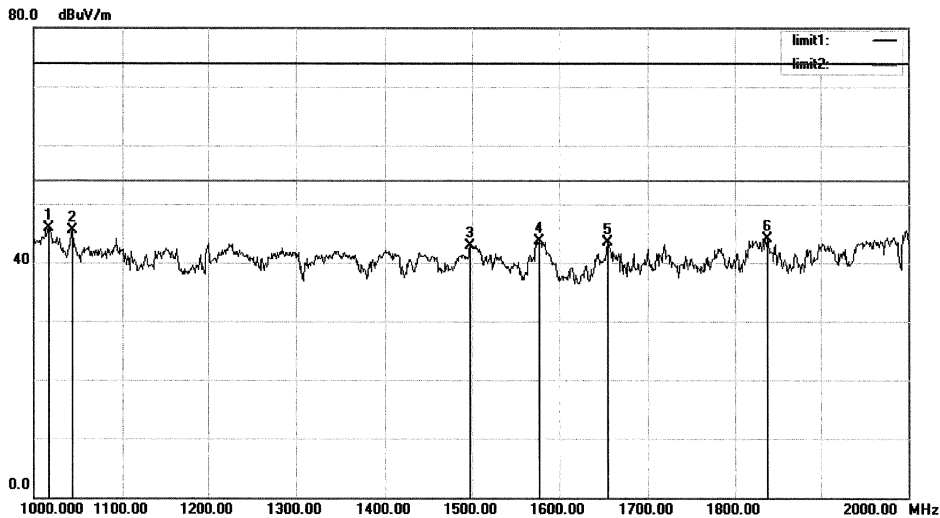
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**Radiated Emission Measurement**

File :1330                      Data :#44                      Date: 2014/07/4                      Time: 15:55:14



Site site #1                      Polarization: **Horizontal**                      Temperature: 24  
 Limit: (RE)FCC PART 15 CLASS B Peak                      Power: AC 120V/60Hz                      Humidity: 53 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode:Printing  
 Note: Parallel interface connection

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	1017.000	68.89	-22.89	46.00	74.00	-28.00	peak	0	
2		1043.000	68.59	-22.99	45.60	74.00	-28.40	peak	0	
3		1498.000	67.05	-24.08	42.97	74.00	-31.03	peak	0	
4		1578.000	68.13	-24.46	43.67	74.00	-30.33	peak	0	
5		1655.000	68.22	-24.75	43.47	74.00	-30.53	peak	0	
6		1838.000	69.36	-25.23	44.13	74.00	-29.87	peak	0	

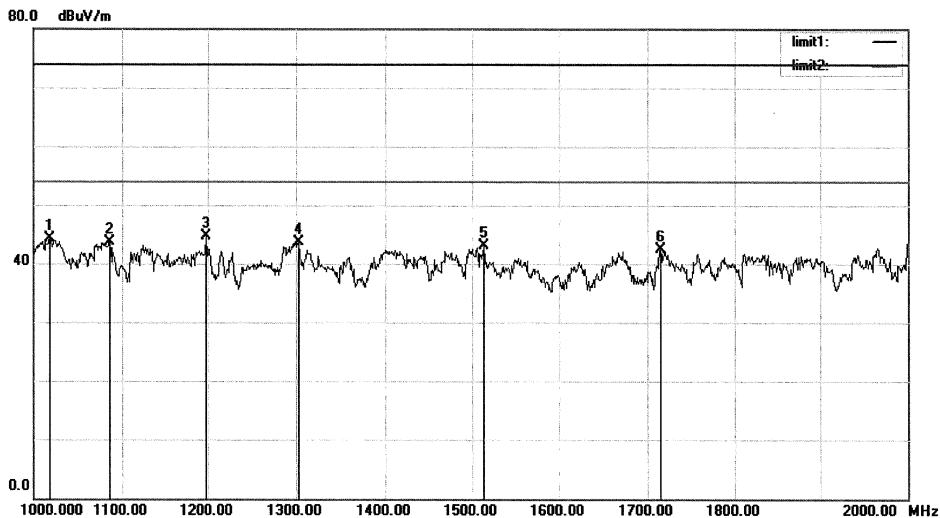
\*:Maximum data    x:Over limit    !:over margin

Operator: Bruce

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**Radiated Emission Measurement**

File: 1330      Data: #43      Date: 2014/07/4      Time: 15:47:05



Site site #1      Polarization: **Vertical**      Temperature: 24  
 Limit: (RE)FCC PART 15 CLASS B Peak      Power: AC 120V/60Hz      Humidity: 53 %  
 EUT: Dot Matrix Printer  
 M/N: 1330  
 Mode: Printing  
 Note: Parallel interface connection

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		1018.000	67.16	-22.90	44.26	74.00	-29.74	peak	0	
2		1086.000	66.84	-23.13	43.71	74.00	-30.29	peak	0	
3	*	1198.000	68.30	-23.51	44.79	74.00	-29.21	peak	0	
4		1303.000	67.26	-23.55	43.71	74.00	-30.29	peak	0	
5		1514.000	67.25	-24.15	43.10	74.00	-30.90	peak	0	
6		1715.000	67.38	-24.96	42.42	74.00	-31.58	peak	0	

\*:Maximum data    x:Over limit    !:over margin

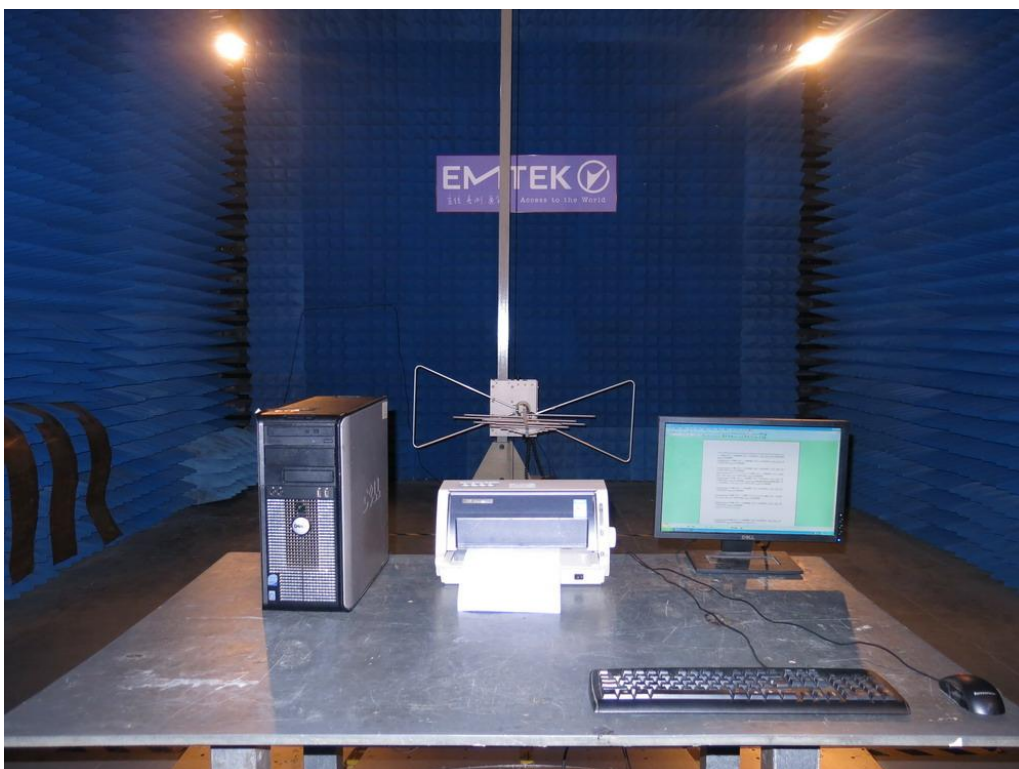
Operator: Bruce

## 6. Photographs of the Test Set-Up

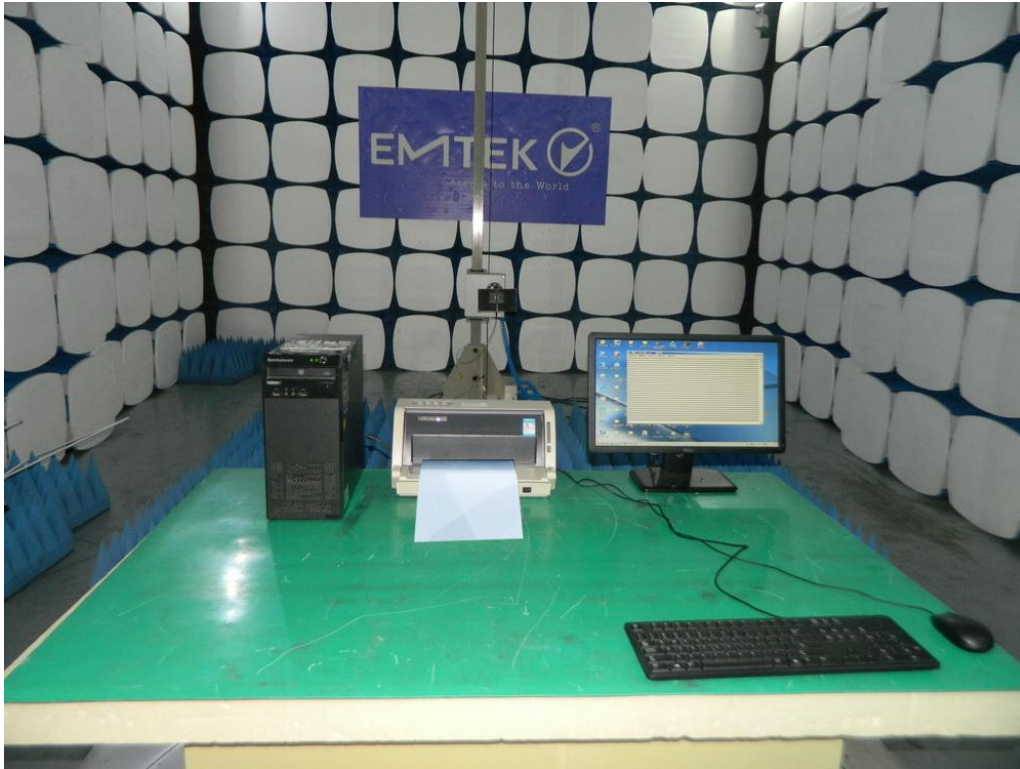
Photograph 1: Set-up for Conducted Emissions



Photograph 2: Set-up for Radiated Emissions of below 1GHz



**Photograph 3: Set-up for Radiated Emissions of 1 - 2GHz**



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