

# FCC TEST REPORT

for

KONG YUE ELECTRONICS & INFORMATION INDUSTRY LTD.

Dot-matrix printer

FCC ID:WAGDOCUMAX5380

Prepared for : KONG YUE ELECTRONICS & INFORMATION INDUSTRY LTD.

Address : 18 Kongyue Industrial Park, Jinguzhou Zone, Xinhui District,  
Jiangmen City, Guangdong Province, China

Prepared by : EST Technology Co., Ltd.

Address : San Tun Management Zone, Houjie District, Dongguan,  
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Report No. : ESTE-R1210001

Date of Report : Oct.15, 2012



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# EST Technology Co., Ltd.

<b>Applicant:</b> <b>Address:</b>	KONG YUE ELECTRONICS & INFORMATION INDUSTRY LTD. 18 Kongyue Industrial Park, Jinguzhou Zone, Xinhui District, Jiangmen City,Guangdong Province, China		
<b>Manufacturer:</b> <b>Address:</b>	KONG YUE ELECTRONICS & INFORMATION INDUSTRY LTD. 18 Kongyue Industrial Park, Jinguzhou Zone, Xinhui District, Jiangmen City,Guangdong Province, China		
<b>Factory:</b> <b>Address:</b>	KONG YUE ELECTRONICS & INFORMATION INDUSTRY LTD. 18 Kongyue Industrial Park, Jinguzhou Zone, Xinhui District, Jiangmen City,Guangdong Province, China		
<b>E.U.T:</b>	Dot-matrix printer		
<b>Model Number:</b>	Documax 5380; Documax 5380/1; Documax 5380/2		
<b>Trade Name:</b>	AMT	<b>Serial No.:</b>	-----
<b>Date of Receipt:</b>	Sep.30.2012	<b>Date of Test:</b>	Oct.8~14, 2012
<b>Test Specification:</b>	FCC Part 15 Subpart B Class B: 2011 ANSI C63.4:2003		
<b>Test Result:</b>	The equipment under test was found to be compliance with the requirements of the standards applied.		
	<b>Issue Date:</b> Oct.16.2012		
Prepared by:	Tested by:	Approved by:	
			
Ada / Assistant	Tony / Engineer	Iceman Hu / Manager	
<b>Other Aspects:</b>	None.		
Abbreviations: OK/P=passed    fail/F=failed    n.a/N=not applicable    E.U.T=equipment under tested			
This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of EST Technology Co., Ltd.			



# 1. GENERAL PRODUCT INFORMATION

## 1.1. Product Function

Refer to Technical Construction Form and User Manual.

## 1.2. Description of Device (EUT)

Description	: Dot-matrix printer
Model No.	: Documax 5380; Documax 5380/1
System Input Voltage	: AC 120V, 60Hz
crystal frequency	: 25 MHz
AC Line	: Unshielded, Undetachable 1.6m
Ethernet Cable	: Unshielded, Detachable 1.6m
<i>Serial</i> Cable	: Unshielded, Detachable 1.6m
<i>Ethernet</i> Cable	: Unshielded, Detachable 1.5m
USB Cable	: Shielded, Detachable 1.6m

## 1.3. Difference between Model Numbers

*Note: The products difference is that interface type and color. But the PCB boards inside are identical. For example, “Documax 5380” have Serial interface, USB interface and Ethernet interface; “Documax 5380/1” have Serial interface, USB interface and Parallel interface; “Documax 5380/2” have USB interface. (About the differences, Please refer to page 38 to 46)*

## 1.4. Independent Operation Modes

The basic operation modes are:

1.4.1. Printting (USB Interface);

1.4.2. Printting (Serial Interface);

1.4.3. Printting (Parallel Interface);

1.4.4. Printting (Ethernet Interface).

*Note: Operation modes 1.4.1、1.4.2、1.4.4 suitable for “Documax 5380”;  
Operation modes 1.4.1、1.4.2、1.4.3 suitable for “Documax 5380/1”.*

## 2. TEST SITES

### 2.1. Description of Standards and Results

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

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	FCC Part 15:2011 ANSI C63.4:2003	Class B	PASS
		Minimum passing margin is 4.10 dB at 3.19 MHz	
Radiated Emission Test	FCC Part 15:2011 ANSI C63.4:2003	Class B	PASS
		Minimum passing margin is 3.11 dB at 85.85 MHz	

## 2.2. Test Facilities

EMC Lab :      Certificated by CNAL, CHINA  
                            Registration No.: L5288  
                            Date of registration: October 28, 2011

                            Certificated by FCC, USA  
                            Registration No.: 989591  
                            Date of registration: December 07, 2010

                            Certificated by Industry Canada  
                            Registration No.: 144350  
                            Date of registration: December 16, 2010

                            Certificated by VCCI, Japan  
                            Registration No.: R-3663 & C-4103  
                            Date of registration: July 25, 2011

                            Certificated by TUV Rheinland, Germany  
                            Registration No.: UA 50195514 0001  
                            Date of registration: January 07, 2011

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

                            Certificated by Intertek ETL SEMKO  
                            Registration No.: 2011-RTL-L1-18  
                            Date of registration: April 28, 2011

                            Certificated by Siemic, Inc.  
                            Registration No.: SLCN021  
                            Date of registration: November 8, 2011

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

Name of Firm :      EST Technology Co., Ltd.

Site Location :      San Tun Management Zone, Houjie District, Dongguan,  
                            Guangdong, China

### 2.3. List of Test and Measurement Instruments

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

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESHS30	832354	May,30,12	1 Year
Artificial Mains Network	Rohde & Schwarz	ENV216	101260	May,30,12	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	101100	July,25,12	1 Year

#### 2.3.2. For radiated emission test (30MHz-1GHz, 966 Chamber)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESVS10	100004	May,30,12	1 Year
Spectrum Analyzer	Agilent	E4411B	MY50140697	May,30,12	1 Year
Bilog Antenna	Teseq	CBL 6111D	25872	Nov.08,11	1.5 Year
Signal Amplifier	Agilent	310N	187037	July,25,12	1 Year

### 3. TEST SET-UP AND OPERATION MODES

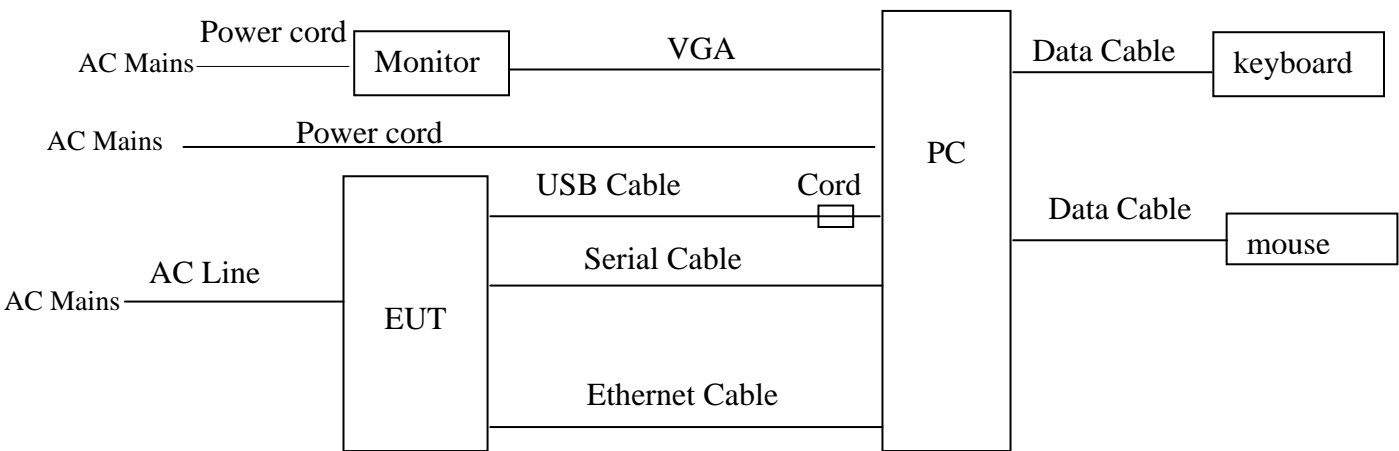
#### 3.1. Principle of Configuration Selection

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

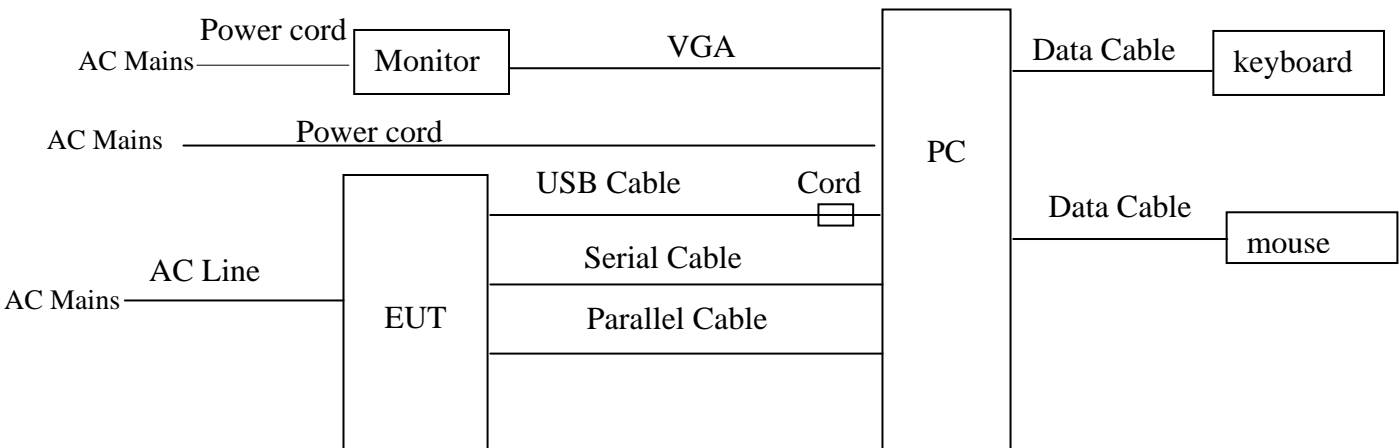
#### 3.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators

Model: *Documax 5380*



Model: *Documax 5380/1*



(EUT: Dot-matrix printer )



### 3.3. Test Operation Mode and Test Software

Refer to Test Setup in clause 4.

### 3.4. Special Accessories and Auxiliary Equipment

#### 3.4.1. PC

M / N : OPTIPLEX380  
Manufacturer : Dell  
Power Cord : Unshielded, Detachable, 1.6m

#### 3.4.2. Monitor

M / N : V193HQV  
S / N : ETLKR0D01404204CDC8501  
Manufacturer : Dell  
VGA : Shielded, Detachable 1.5m  
Power Cord : Unshielded, Detachable, 1.6m

#### 3.4.3. Keyboard

M / N : L100  
S / N : CN-0RH656-65890-01M-070T  
Manufacturer : Dell  
Data Cable : Shielded, Undetachable, 1.8m

#### 3.4.4. Mouse

M / N : MOL5VO  
S / N : JOQ03RNT  
Manufacturer : Dell  
Data Cable : Shielded, Undetachable, 1.5m

### 3.5. Countermeasures to Achieve EMC Compliance

None.

## 4. EMISSION TEST RESULTS

### 4.1. Conducted Emission at the Mains Terminals Test

**RESULT** : **Pass**  
Test Procedure : ANSI C63.4:2003  
Frequency Range : 0.15 to 30MHz  
Test Site : Shielded Room  
Limits : FCC Part 15 :2011

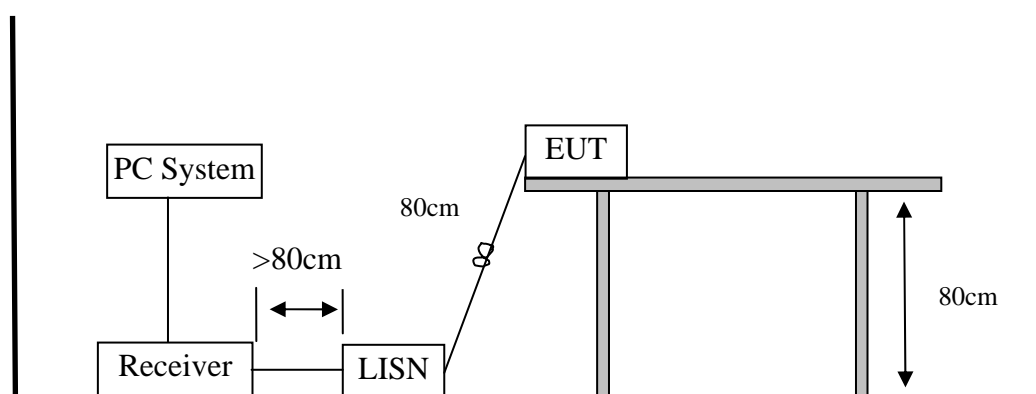
#### Test Setup

Date of Test : Oct. 12. 2012  
M/N : Documax 5380; Documax 5380/1  
Input Voltage : AC 120V/60Hz  
Operation Mode : Documax 5380: Printting (USB Interface);  
Printting (Serial Interface);  
Printting (Ethernet Interface);  
Documax 5380/1: Printting (USB Interface);  
Printting (Serial Interface);  
Printting (Parallel Interface)

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

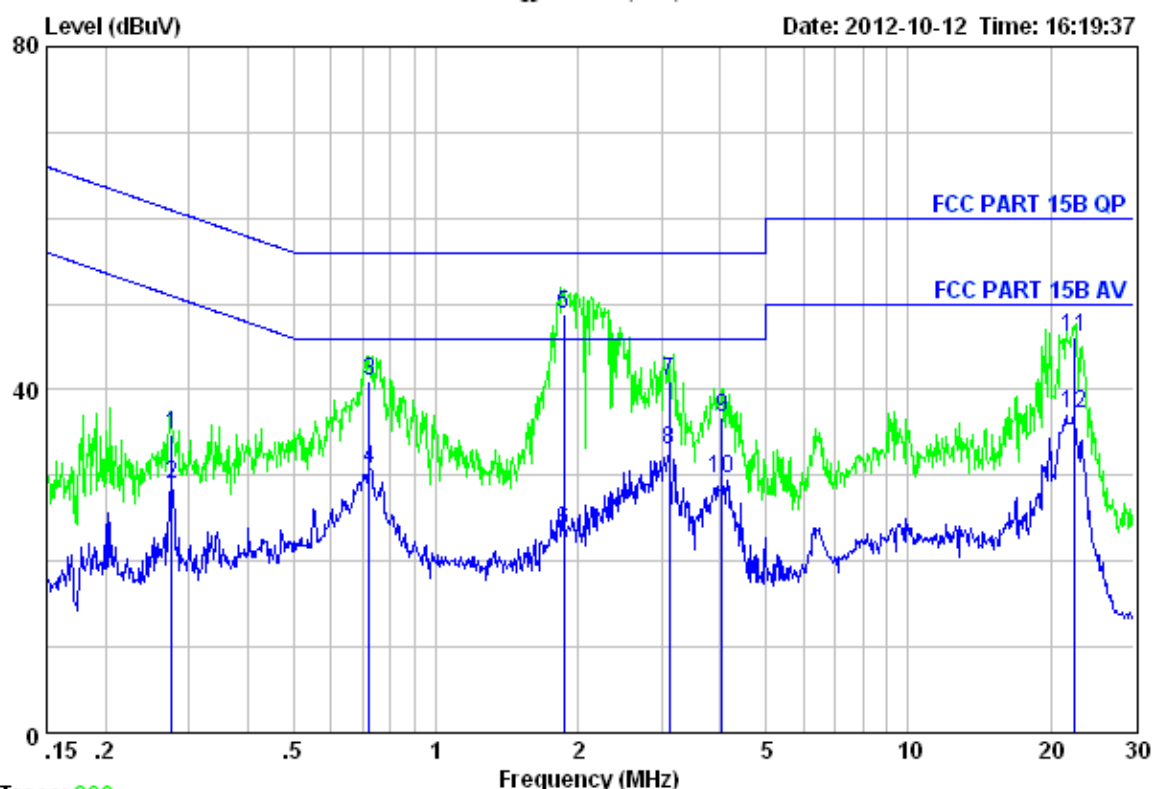
The bandwidth of the test receiver was set at 9 kHz.

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



**Note: Measurement Uncertainty:  $\pm 2.54$  dB at a level of confidence of 95%.**

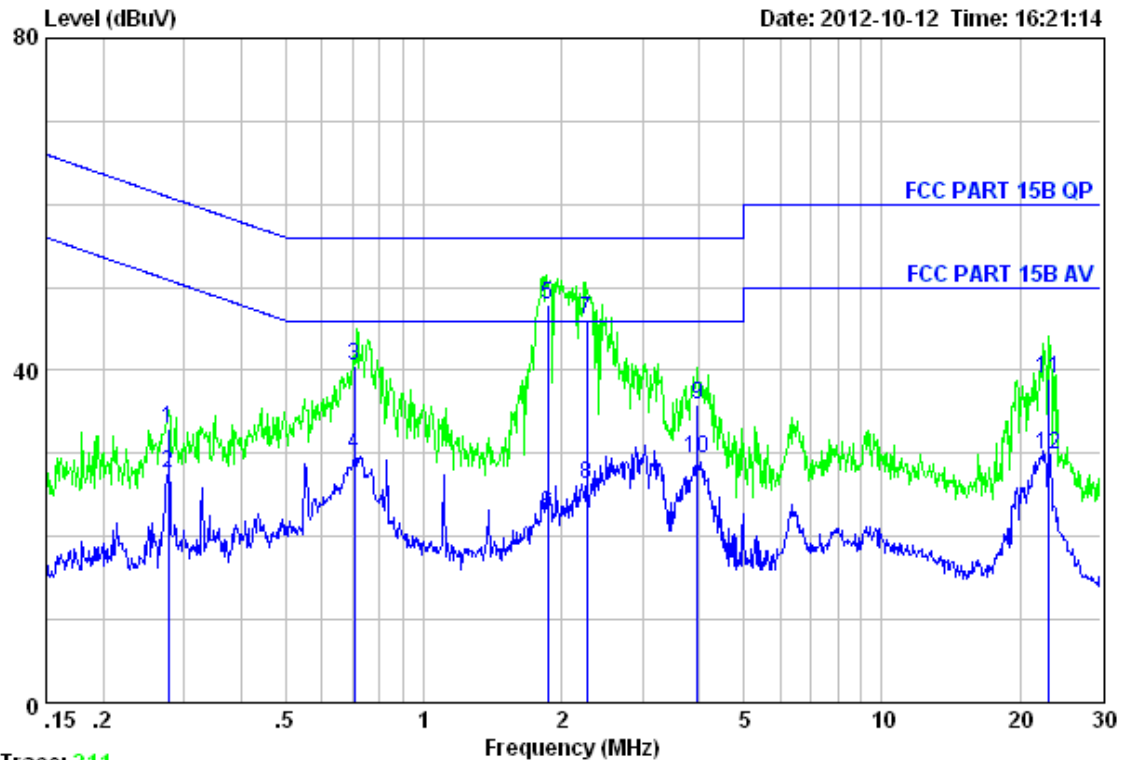
#### Test Data



Trace: 209

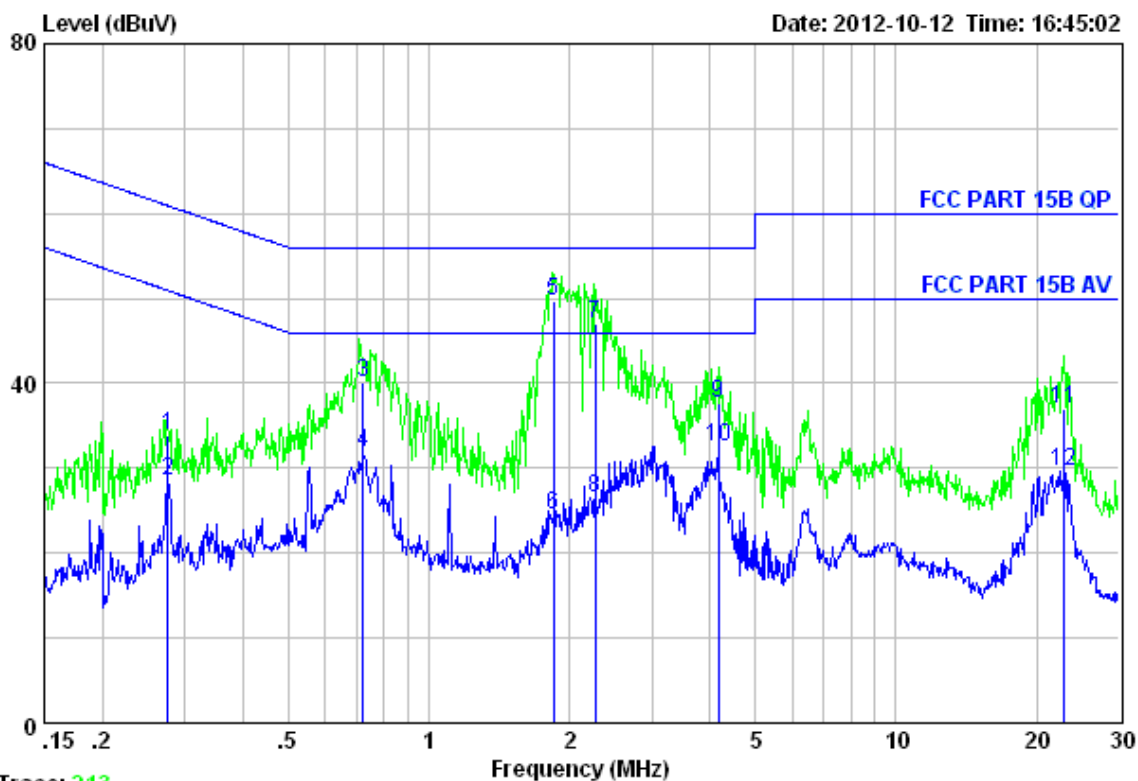
Site no. : EST 844 Shielded Room Data no. : 210  
 Limit : FCC PART 15B QP LINE Phase : LINE  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printing (USB Interface)

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.28	9.61	9.83	15.35	34.79	60.94	26.15	QP
2	0.28	9.61	9.83	9.54	28.98	50.94	21.96	Average
3	0.72	9.59	9.81	21.66	41.06	56.00	14.94	QP
4	0.72	9.59	9.81	11.37	30.77	46.00	15.23	Average
5	1.87	9.61	9.85	29.35	48.81	56.00	7.19	QP
6	1.87	9.61	9.85	4.12	23.58	46.00	22.42	Average
7	3.12	9.63	9.84	21.52	40.99	56.00	15.01	QP
8	3.12	9.63	9.84	13.61	33.08	46.00	12.92	Average
9	4.03	9.64	9.85	17.26	36.75	56.00	19.25	QP
10	4.03	9.64	9.85	10.09	29.58	46.00	16.42	Average
11	22.42	9.68	9.99	26.35	46.02	60.00	13.98	QP
12	22.42	9.68	9.99	17.51	37.18	50.00	12.82	Average



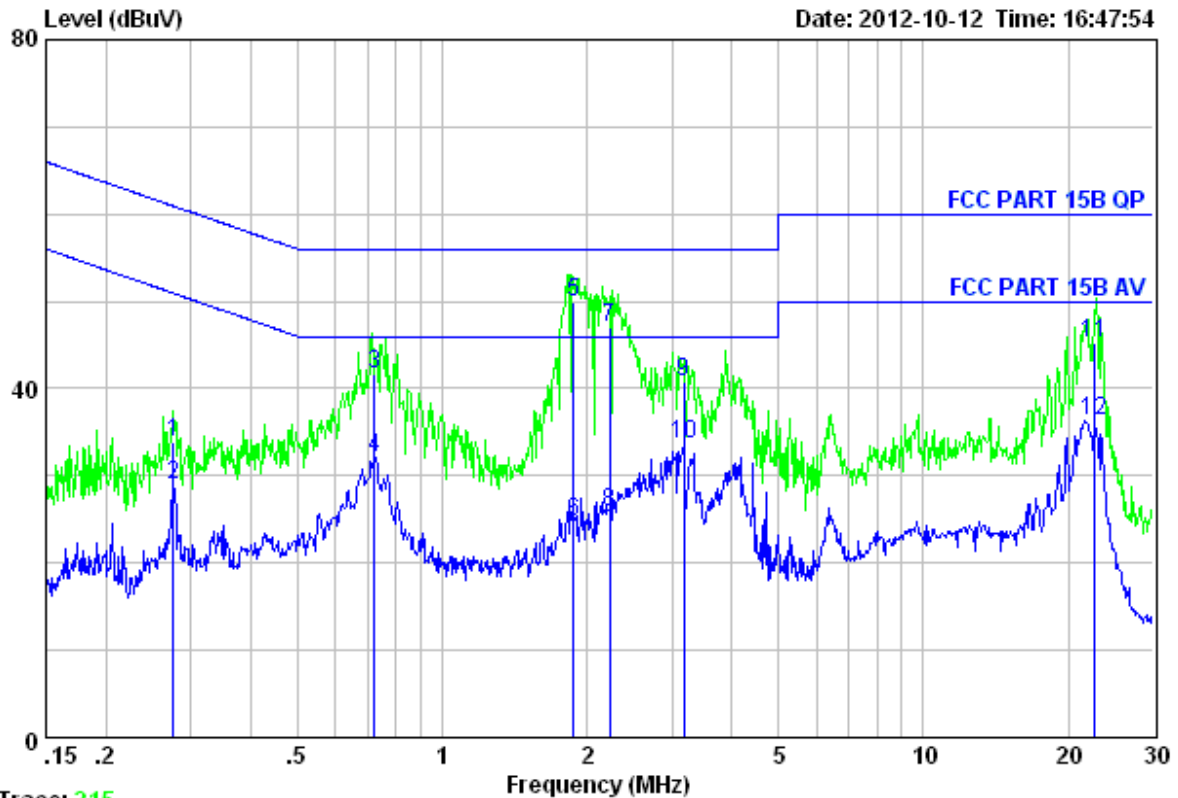
Site no. : EST 844 Shielded Room      Data no. : 212  
 Limit : FCC PART 15B QP      LINE Phase : NEUTRAL  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printting (USB Interface)

	Freq. (MHz)	LISN Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	0.28	9.60	9.83	13.64	33.07	60.90	27.83	QP
2	0.28	9.60	9.83	8.23	27.66	50.90	23.24	Average
3	0.70	9.63	9.81	21.15	40.59	56.00	15.41	QP
4	0.70	9.63	9.81	10.32	29.76	46.00	16.24	Average
5	1.87	9.62	9.85	28.35	47.82	56.00	8.18	QP
6	1.87	9.62	9.85	3.18	22.65	46.00	23.35	Average
7	2.27	9.62	9.84	26.64	46.10	56.00	9.90	QP
8	2.27	9.62	9.84	6.77	26.23	46.00	19.77	Average
9	3.96	9.64	9.84	16.35	35.83	56.00	20.17	QP
10	3.96	9.64	9.84	9.86	29.34	46.00	16.66	Average
11	23.14	9.77	10.00	19.26	39.03	60.00	20.97	QP
12	23.14	9.77	10.00	10.00	29.77	50.00	20.23	Average



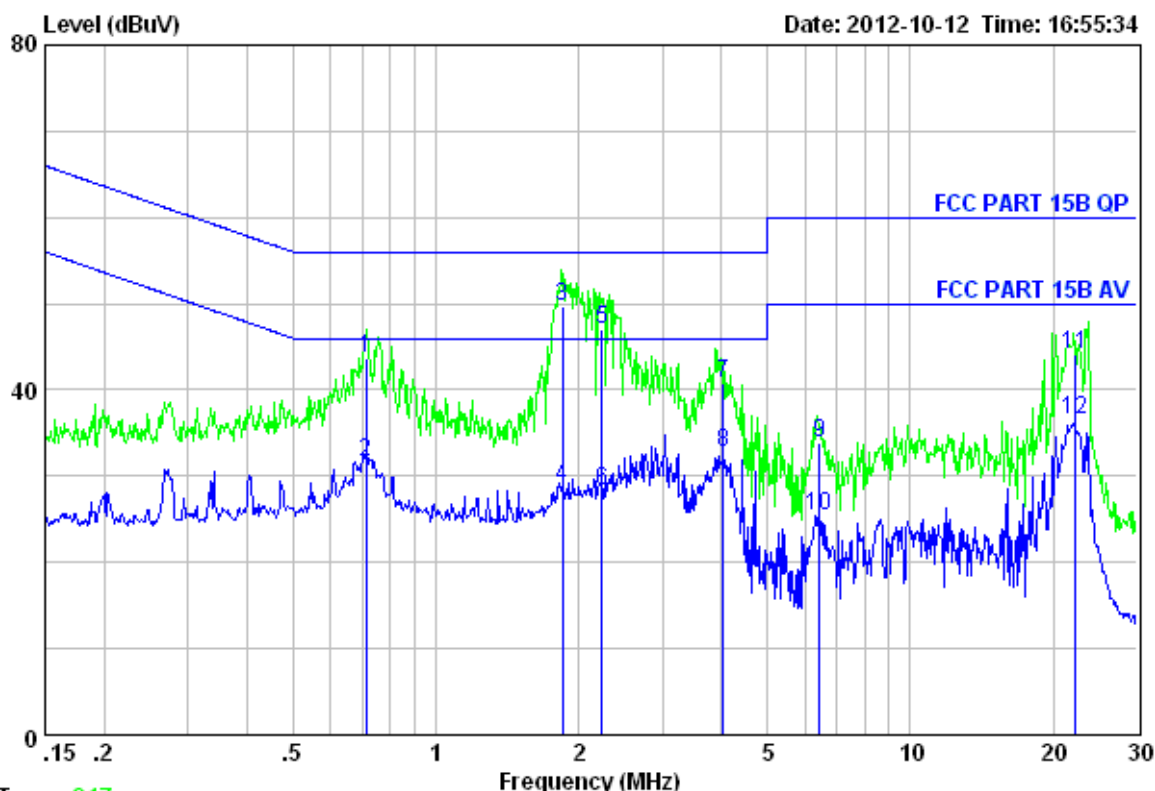
Site no. : EST 844 Shielded Room Data no. : 214  
 Limit : FCC PART 15B QP LINE Phase : NEUTRAL  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printting (Parallel Interface)

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.28	9.60	9.83	14.35	33.78	60.94	27.16	QP
2	0.28	9.60	9.83	8.99	28.42	50.94	22.52	Average
3	0.72	9.63	9.81	20.63	40.07	56.00	15.93	QP
4	0.72	9.63	9.81	12.46	31.90	46.00	14.10	Average
5	1.85	9.62	9.83	30.35	49.80	56.00	6.20	QP
6	1.85	9.62	9.83	5.15	24.60	46.00	21.40	Average
7	2.27	9.62	9.84	27.54	47.00	56.00	9.00	QP
8	2.27	9.62	9.84	7.09	26.55	46.00	19.45	Average
9	4.16	9.64	9.84	18.26	37.74	56.00	18.26	QP
10	4.16	9.64	9.84	13.04	32.52	46.00	13.48	Average
11	22.78	9.77	9.99	17.25	37.01	60.00	22.99	QP
12	22.78	9.77	9.99	9.96	29.72	50.00	20.28	Average



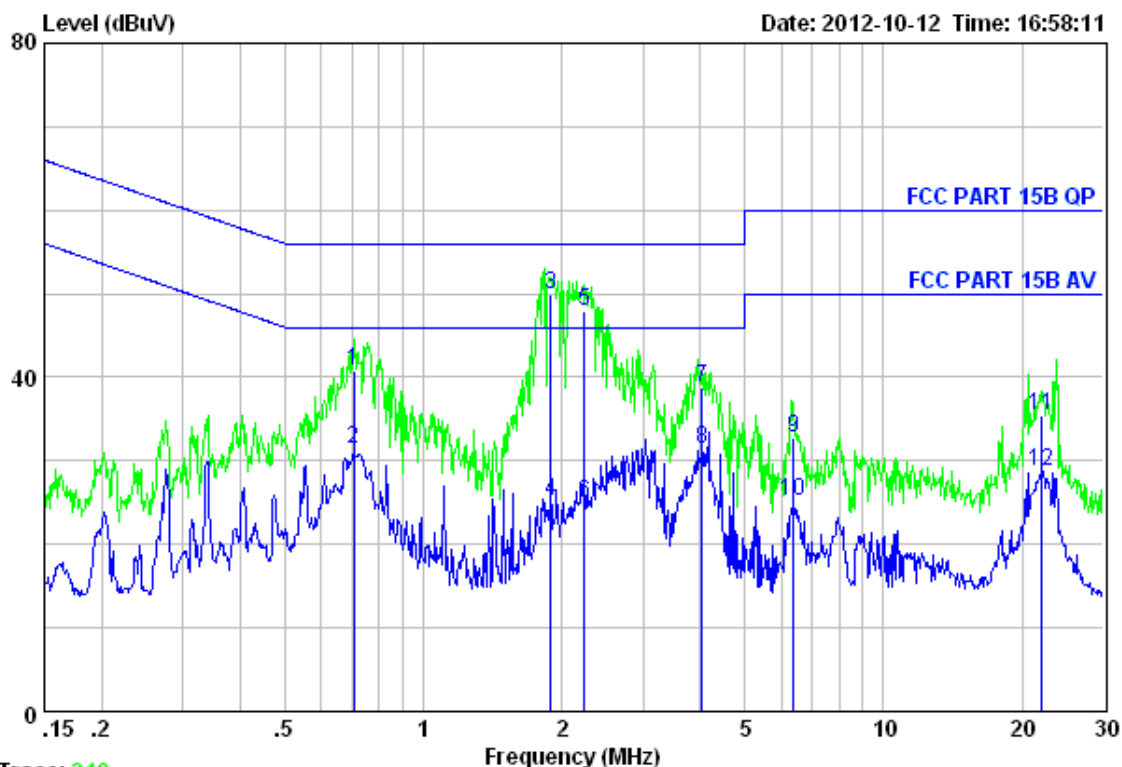
Site no. : EST 844 Shielded Room      Data no. : 216  
 Limit : FCC PART 15B QP      LINE Phase : LINE  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printting (Parallel Interface)

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.28	9.61	9.83	14.35	33.79	60.94	27.15	QP
2	0.28	9.61	9.83	9.61	29.05	50.94	21.89	Average
3	0.72	9.59	9.81	22.26	41.66	56.00	14.34	QP
4	0.72	9.59	9.81	12.66	32.06	46.00	13.94	Average
5	1.88	9.61	9.85	30.52	49.98	56.00	6.02	QP
6	1.88	9.61	9.85	5.23	24.69	46.00	21.31	Average
7	2.22	9.61	9.84	27.64	47.09	56.00	8.91	QP
8	2.22	9.61	9.84	6.32	25.77	46.00	20.23	Average
9	3.17	9.63	9.84	21.32	40.79	56.00	15.21	QP
10	3.17	9.63	9.84	14.13	33.60	46.00	12.40	Average
11	22.66	9.68	9.98	25.52	45.18	60.00	14.82	QP
12	22.66	9.68	9.98	16.71	36.37	50.00	13.63	Average



Site no. : EST 844 Shielded Room      Data no. : 218  
 Limit : FCC PART 15B QP      LINE Phase : LINE  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printting (Serial Interface)

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuv/m)	(dBuv/m)	(dB)	
1	0.71	9.59	9.81	24.35	43.75	56.00	12.25	QP
2	0.71	9.59	9.81	12.30	31.70	46.00	14.30	Average
3	1.85	9.61	9.83	30.24	49.68	56.00	6.32	QP
4	1.85	9.61	9.83	9.23	28.67	46.00	17.33	Average
5	2.24	9.61	9.84	27.63	47.08	56.00	8.92	QP
6	2.24	9.61	9.84	8.91	28.36	46.00	17.64	Average
7	4.03	9.64	9.85	21.23	40.72	56.00	15.28	QP
8	4.03	9.64	9.85	13.26	32.75	46.00	13.25	Average
9	6.42	9.66	9.86	14.26	33.78	60.00	26.22	QP
10	6.42	9.66	9.86	5.91	25.43	50.00	24.57	Average
11	22.18	9.68	9.98	24.53	44.19	60.00	15.81	QP
12	22.18	9.68	9.98	16.81	36.47	50.00	13.53	Average

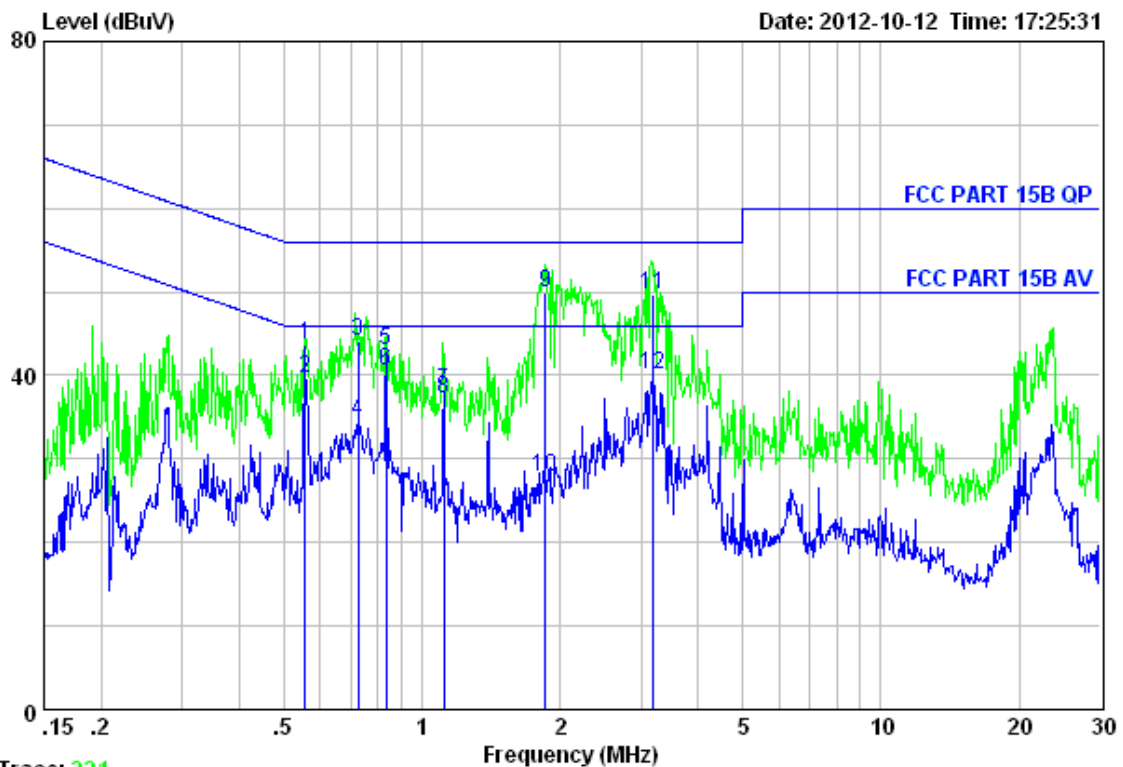


Trace: 219

Site no. : EST 844 Shielded Room Data no. : 220  
 Limit : FCC PART 15B QP LINE Phase : NEUTRAL  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printting (Serial Interface)

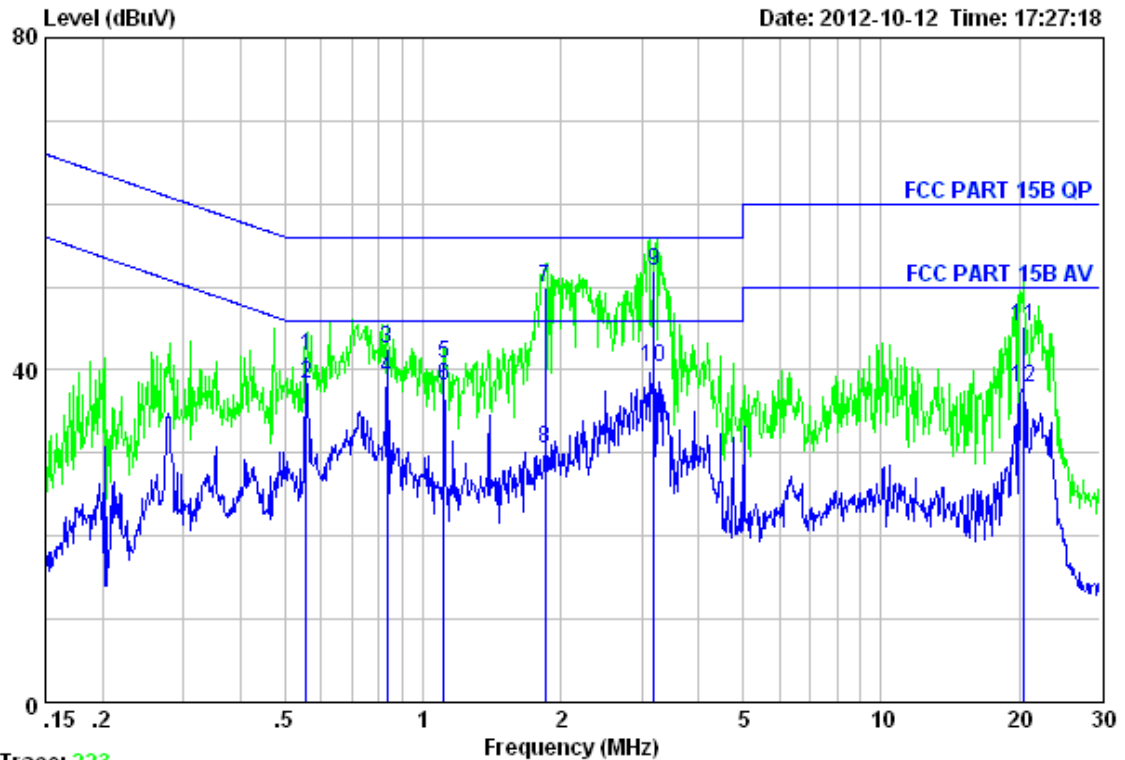
	Freq. (MHz)	LISN Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuv/m)	Limits (dBuv/m)	Margin (dB)	Remark
1	0.70	9.63	9.81	21.24	40.68	56.00	15.32	QP
2	0.70	9.63	9.81	12.00	31.44	46.00	14.56	Average
3	1.89	9.62	9.84	30.53	49.99	56.00	6.01	QP
4	1.89	9.62	9.84	5.61	25.07	46.00	20.93	Average
5	2.24	9.62	9.84	28.53	47.99	56.00	8.01	QP
6	2.24	9.62	9.84	5.47	24.93	46.00	21.07	Average
7	4.03	9.64	9.85	19.23	38.72	56.00	17.28	QP
8	4.03	9.64	9.85	11.87	31.36	46.00	14.64	Average
9	6.39	9.66	9.86	13.24	32.76	60.00	27.24	QP
10	6.39	9.66	9.86	5.75	25.27	50.00	24.73	Average
11	21.95	9.76	10.00	15.62	35.38	60.00	24.62	QP
12	21.95	9.76	10.00	9.06	28.82	50.00	21.18	Average





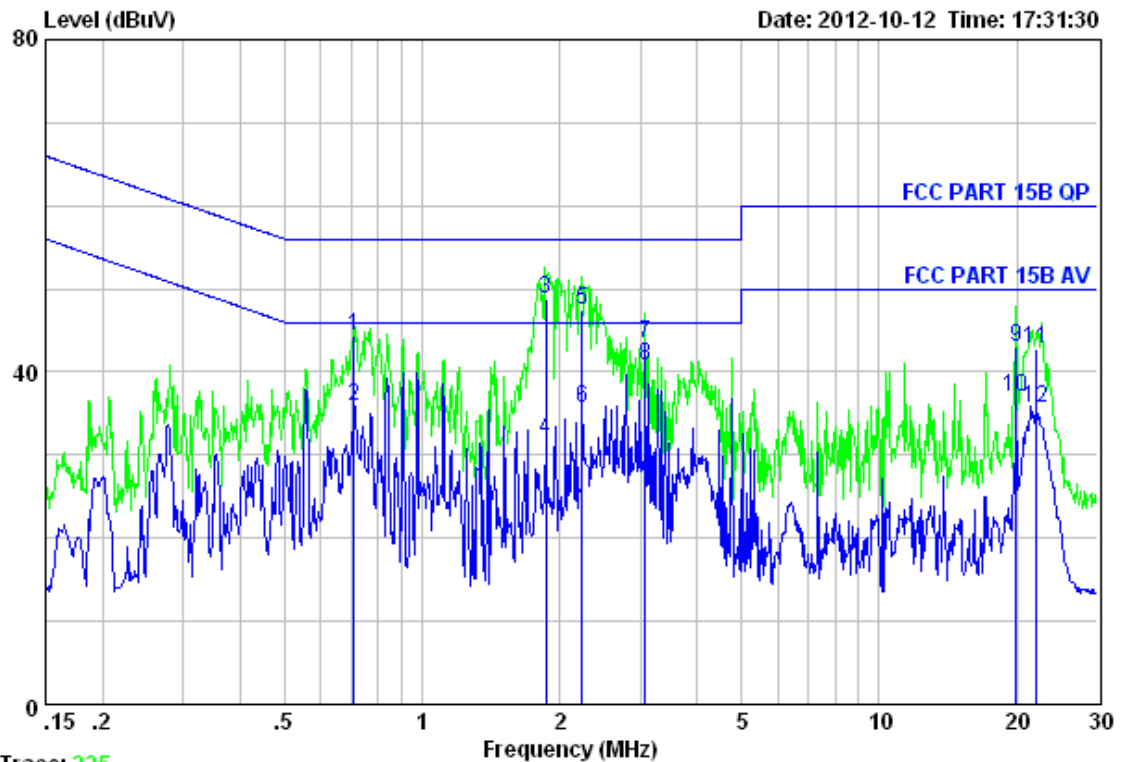
Site no. : EST 844 Shielded Room Data no. : 222  
 Limit : FCC PART 15B QP LINE Phase : NEUTRAL  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printting (USB Interface)

	Freq.	LISN	Cable	Emission				
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.56	9.60	9.82	24.35	43.77	56.00	12.23	QP
2	0.56	9.60	9.82	20.28	39.70	46.00	6.30	Average
3	0.73	9.63	9.81	24.58	44.02	56.00	11.98	QP
4	0.73	9.63	9.81	14.99	34.43	46.00	11.57	Average
5	0.83	9.62	9.82	23.53	42.97	56.00	13.03	QP
6	0.83	9.62	9.82	21.06	40.50	46.00	5.50	Average
7	1.12	9.61	9.82	18.76	38.19	56.00	17.81	QP
8	1.12	9.61	9.82	17.69	37.12	46.00	8.88	Average
9	1.86	9.62	9.85	30.34	49.81	56.00	6.19	QP
10	1.86	9.62	9.85	8.30	27.77	46.00	18.23	Average
11	3.19	9.64	9.84	30.14	49.62	56.00	6.38	QP
12	3.19	9.64	9.84	20.54	40.02	46.00	5.98	Average



Site no. : EST 844 Shielded Room      Data no. : 224  
 Limit : FCC PART 15B QP      LINE Phase : LINE  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printing (USB Interface)

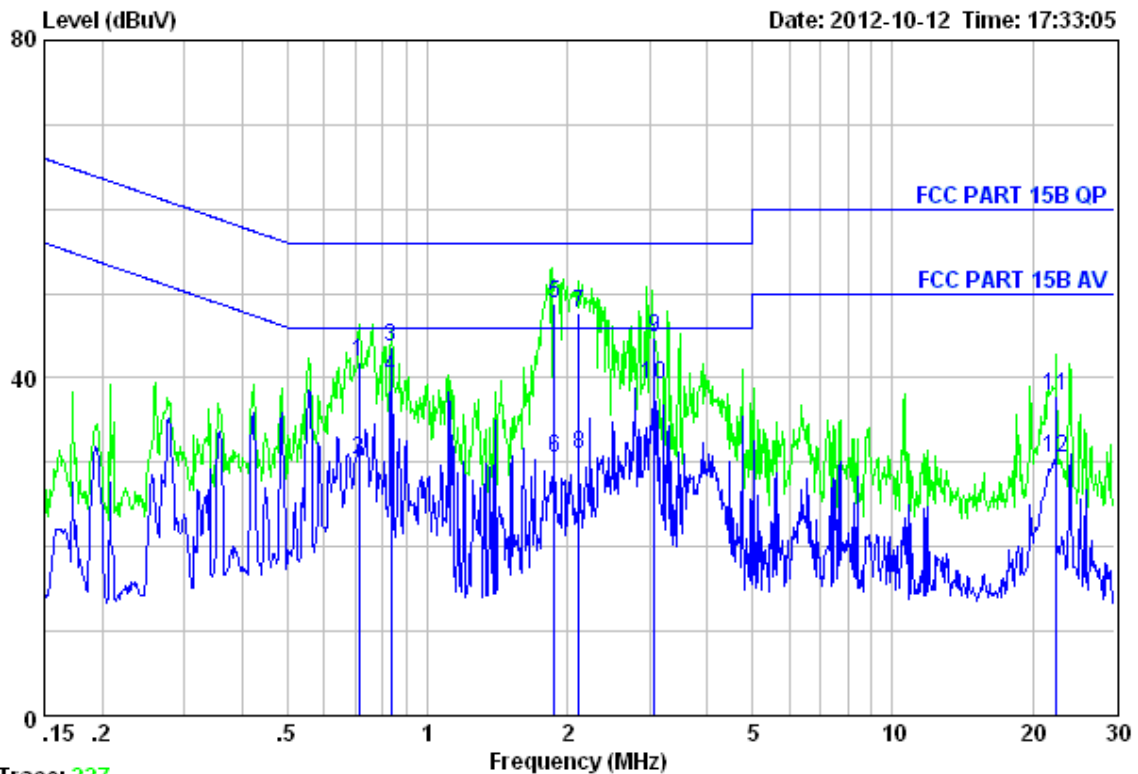
	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.56	9.60	9.82	22.15	41.57	56.00	14.43	QP
2	0.56	9.60	9.82	19.01	38.43	46.00	7.57	Average
3	0.83	9.61	9.82	23.15	42.58	56.00	13.42	QP
4	0.83	9.61	9.82	19.66	39.09	46.00	6.91	Average
5	1.11	9.64	9.82	21.42	40.88	56.00	15.12	QP
6	1.11	9.64	9.82	18.70	38.16	46.00	7.84	Average
7	1.85	9.61	9.83	30.54	49.98	56.00	6.02	QP
8	1.85	9.61	9.83	11.07	30.51	46.00	15.49	Average
9	3.19	9.63	9.84	32.43	51.90	56.00	4.10	QP
10	3.19	9.63	9.84	20.97	40.44	46.00	5.56	Average
11	20.38	9.67	9.96	25.53	45.16	60.00	14.84	QP
12	20.38	9.67	9.96	18.24	37.87	50.00	12.13	Average



Trace: 225

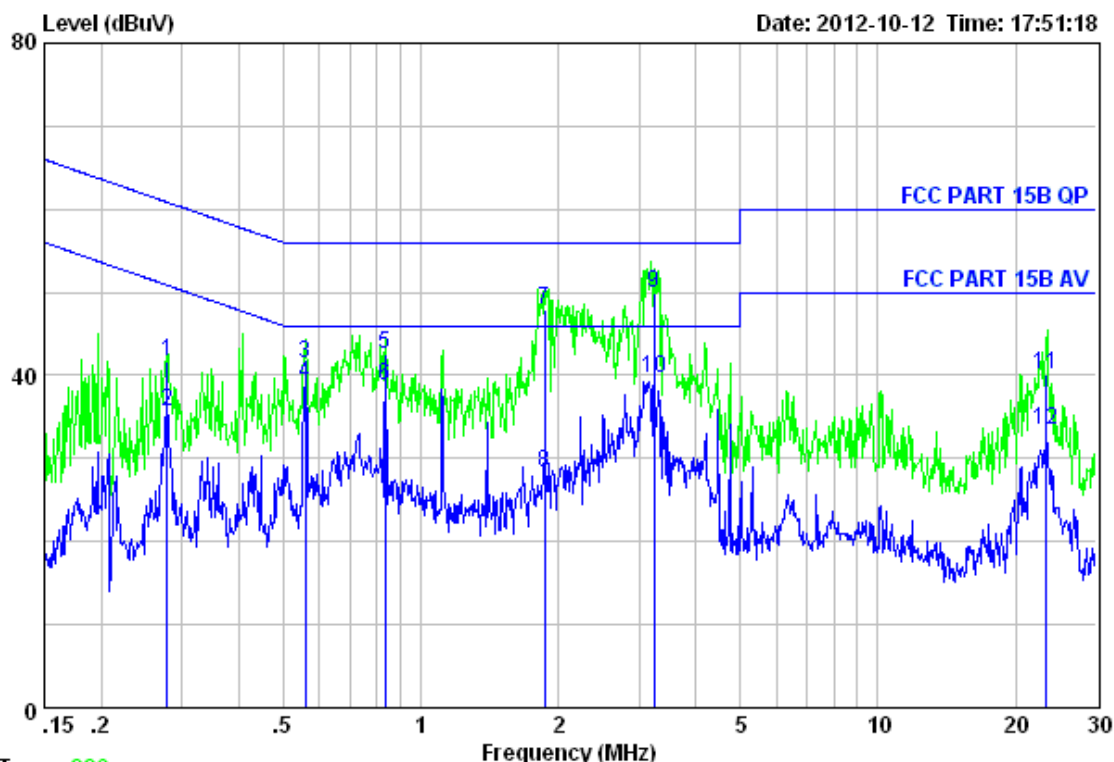
Site no. : EST 844 Shielded Room Data no. : 226  
 Limit : FCC PART 15B QP LINE Phase : LINE  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printting (Serial Interface)

	Freq. (MHz)	LISN Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	0.71	9.59	9.81	25.04	44.44	56.00	11.56	QP
2	0.71	9.59	9.81	16.49	35.89	46.00	10.11	Average
3	1.87	9.61	9.85	29.35	48.81	56.00	7.19	QP
4	1.87	9.61	9.85	12.43	31.89	46.00	14.11	Average
5	2.24	9.61	9.84	28.04	47.49	56.00	8.51	QP
6	2.24	9.61	9.84	16.16	35.61	46.00	10.39	Average
7	3.07	9.63	9.85	24.03	43.51	56.00	12.49	QP
8	3.07	9.63	9.85	21.34	40.82	46.00	5.18	Average
9	19.95	9.67	9.97	23.42	43.06	60.00	16.94	QP
10	19.95	9.67	9.97	17.34	36.98	50.00	13.02	Average
11	21.95	9.68	10.00	23.15	42.83	60.00	17.17	QP
12	21.95	9.68	10.00	15.90	35.58	50.00	14.42	Average



Site no. : EST 844 Shielded Room Data no. : 228  
 Limit : FCC PART 15B QP LINE Phase : NEUTRAL  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printting (Serial Interface)

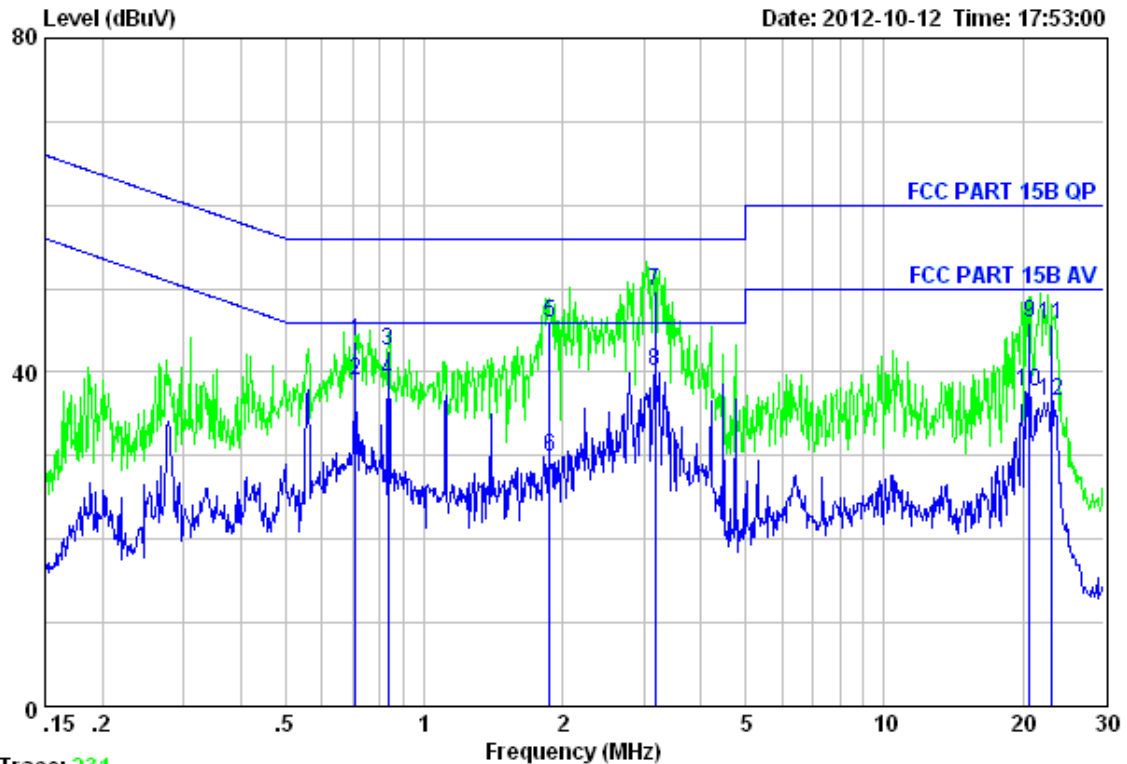
	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuv/m)	(dBuv/m)	(dB)	
1	0.71	9.63	9.81	22.54	41.98	56.00	14.02	QP
2	0.71	9.63	9.81	10.90	30.34	46.00	15.66	Average
3	0.83	9.62	9.82	24.35	43.79	56.00	12.21	QP
4	0.83	9.62	9.82	20.72	40.16	46.00	5.84	Average
5	1.88	9.62	9.85	29.35	48.82	56.00	7.18	QP
6	1.88	9.62	9.85	11.14	30.61	46.00	15.39	Average
7	2.12	9.62	9.84	28.24	47.70	56.00	8.30	QP
8	2.12	9.62	9.84	11.58	31.04	46.00	14.96	Average
9	3.07	9.63	9.85	25.32	44.80	56.00	11.20	QP
10	3.07	9.63	9.85	19.76	39.24	46.00	6.76	Average
11	22.42	9.76	9.99	18.24	37.99	60.00	22.01	QP
12	22.42	9.76	9.99	10.86	30.61	50.00	19.39	Average



Trace: 229

Site no. : EST 844 Shielded Room Data no. : 230  
 Limit : FCC PART 15B QP LINE Phase : NEUTRAL  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printing (Ethernet Interface)

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.28	9.60	9.83	22.16	41.59	60.85	19.26	QP
2	0.28	9.60	9.83	16.12	35.55	50.85	15.30	Average
3	0.56	9.60	9.82	22.13	41.55	56.00	14.45	QP
4	0.56	9.60	9.82	19.51	38.93	46.00	7.07	Average
5	0.83	9.62	9.82	23.15	42.59	56.00	13.41	QP
6	0.83	9.62	9.82	19.38	38.82	46.00	7.18	Average
7	1.87	9.62	9.85	28.35	47.82	56.00	8.18	QP
8	1.87	9.62	9.85	8.72	28.19	46.00	17.81	Average
9	3.24	9.64	9.84	30.34	49.82	56.00	6.18	QP
10	3.24	9.64	9.84	20.24	39.72	46.00	6.28	Average
11	23.39	9.78	10.02	20.23	40.03	60.00	19.97	QP
12	23.39	9.78	10.02	13.72	33.52	50.00	16.48	Average



Trace: 231

Site no. : EST 844 Shielded Room      Data no. : 232  
 Limit : FCC PART 15B QP      LINE Phase : LINE  
 Env. / Ins. : Temp:24.3'C Humi:58% Press:101.50kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printting (Ethernet Interface)

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuv/m)	(dBuv/m)	(dB)	
1	0.71	9.59	9.81	24.23	43.63	56.00	12.37	QP
2	0.71	9.59	9.81	19.59	38.99	46.00	7.01	Average
3	0.83	9.61	9.82	23.13	42.56	56.00	13.44	QP
4	0.83	9.61	9.82	19.56	38.99	46.00	7.01	Average
5	1.88	9.61	9.85	26.35	45.81	56.00	10.19	QP
6	1.88	9.61	9.85	10.30	29.76	46.00	16.24	Average
7	3.17	9.63	9.84	30.26	49.73	56.00	6.27	QP
8	3.17	9.63	9.84	20.68	40.15	46.00	5.85	Average
9	20.70	9.67	9.98	26.26	45.91	60.00	14.09	QP
10	20.70	9.67	9.98	18.12	37.77	50.00	12.23	Average
11	23.14	9.67	10.00	26.04	45.71	60.00	14.29	QP
12	23.14	9.67	10.00	16.87	36.54	50.00	13.46	Average

## 4.2. Radiated Emission Test

**RESULT : Pass**

Test Procedure : ANSI C63.4:2003

Frequency Range : 30 to 1000 MHz

Test Site : 966 Chamber

Limits : FCC Part 15 :2011

### **Test Setup**

Date of Test : Oct. 12. 2012

M/N : Documax 5380; Documax 5380/1

Input Voltage : AC 120V/60Hz

Operation Mode : Documax 5380: Printting (USB Interface);

Printting (Serial Interface);

Printting (Ethernet Interface);

Documax 5380/1: Printting (USB Interface);

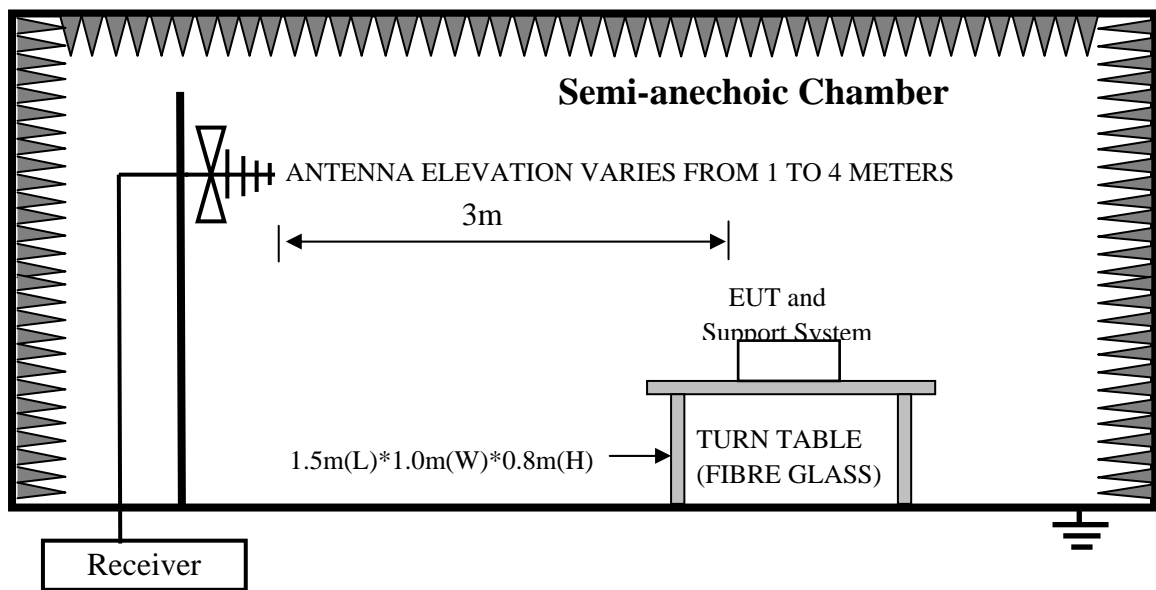
Printting (Serial Interface);

Printting (Parallel Interface)

The EUT was placed on a turn table which was 0.8 m above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 m away from the receiving antenna which was mounted on an antenna tower. The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 m to 4 m for both horizontal and vertical polarizations.

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

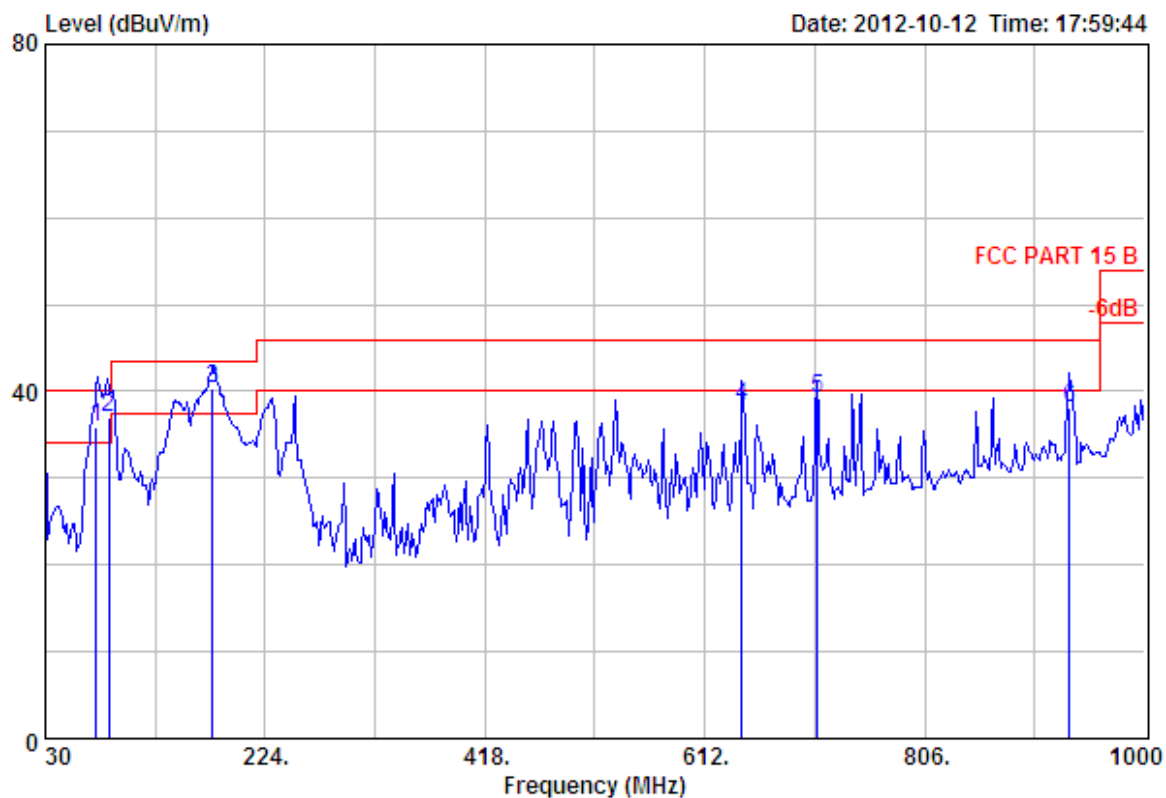
The bandwidth setting on the test receiver was 120 kHz.



**Note: Measurement Uncertainty:  $\pm 3.62$  dB at a level of confidence of 95%.**

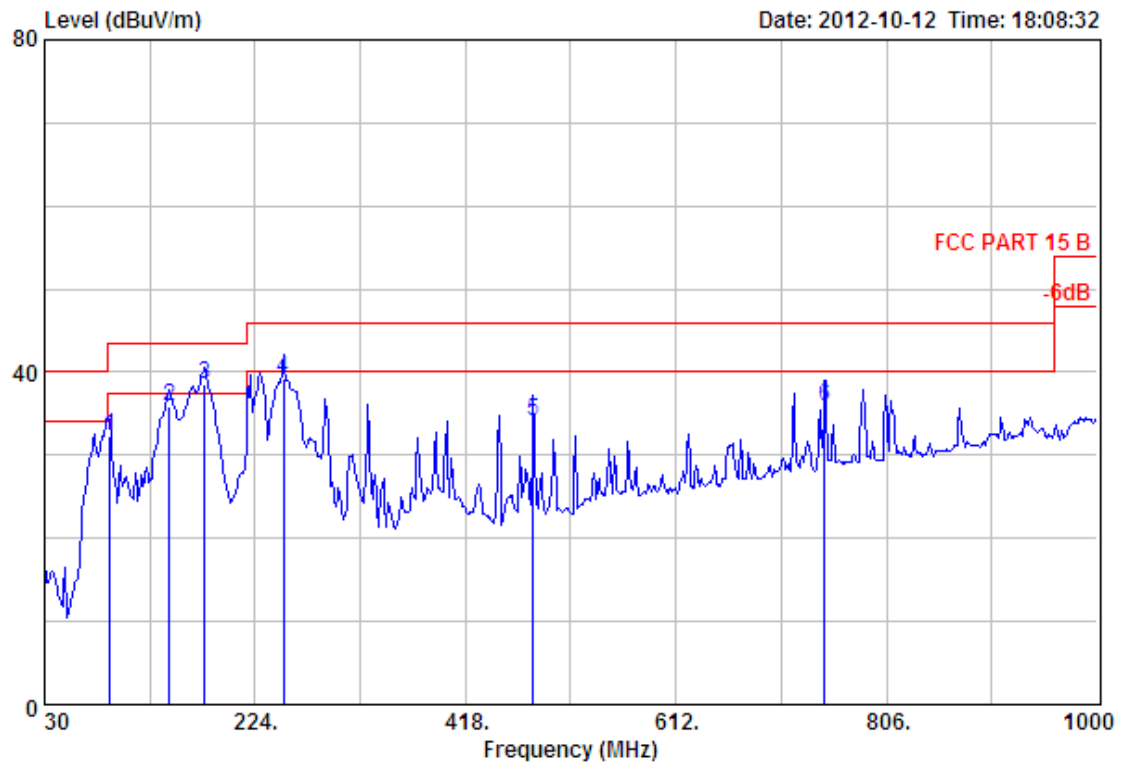


## Test Data



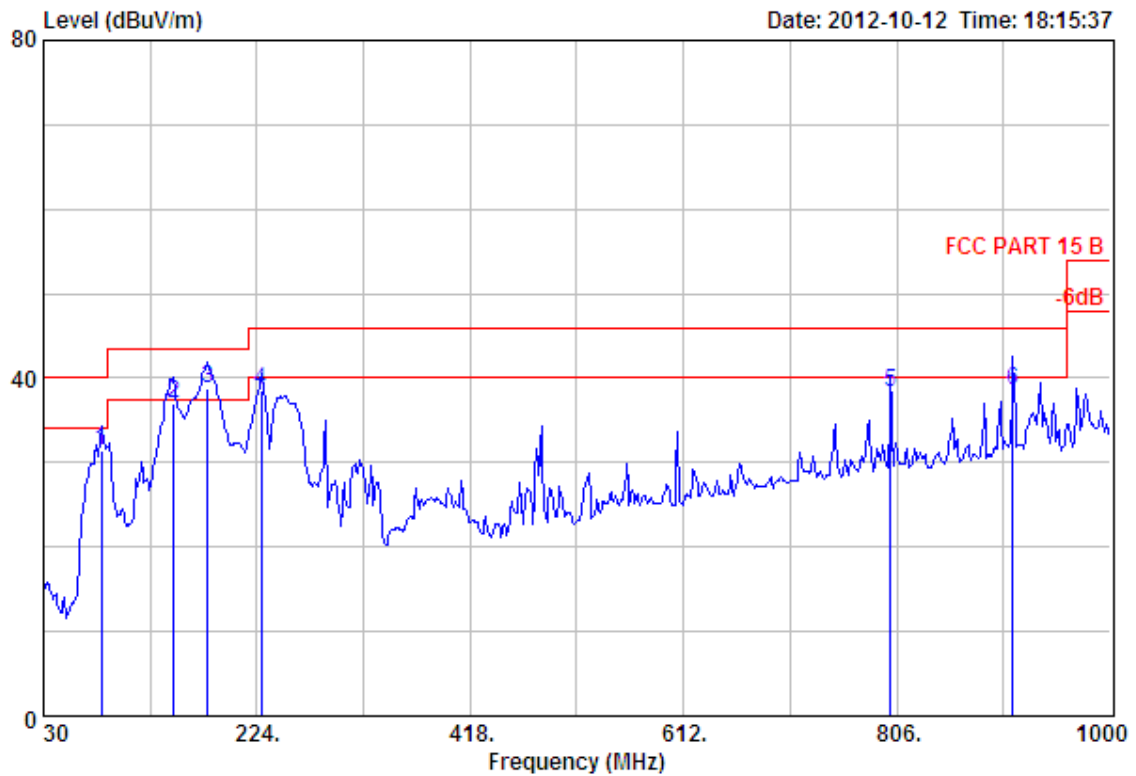
Site no.	: 3m Chamber	Data no.	: 19
Dis. / Ant.	: 3m 27137	Ant. pol.	: VERTICAL
Limit	: FCC PART 15 B		
Env. / Ins.	: Temp:25.6';Humi:56%;Press:101.52kPa		
Engineer	: Tony		
EUT	: Dot-matrix Printer		
Power	: AC 120V/60Hz		
M/N	: Documax 5380		
Test Mode	: Printting (Ethernet Interface)		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Reamark (dB)
					Level (dBuV/m)	Limits (dBuV/m)		
1	75.10	6.36	2.81	26.60	35.77	40.00	4.23	QP
2	85.85	7.72	2.87	26.30	36.89	40.00	3.11	QP
3	177.40	8.97	4.09	27.30	40.36	43.50	3.14	QP
4	644.98	20.06	7.59	10.63	38.28	46.00	7.72	QP
5	710.94	21.06	7.91	10.26	39.23	46.00	6.77	QP
6	934.04	24.53	9.36	4.16	38.05	46.00	7.95	QP



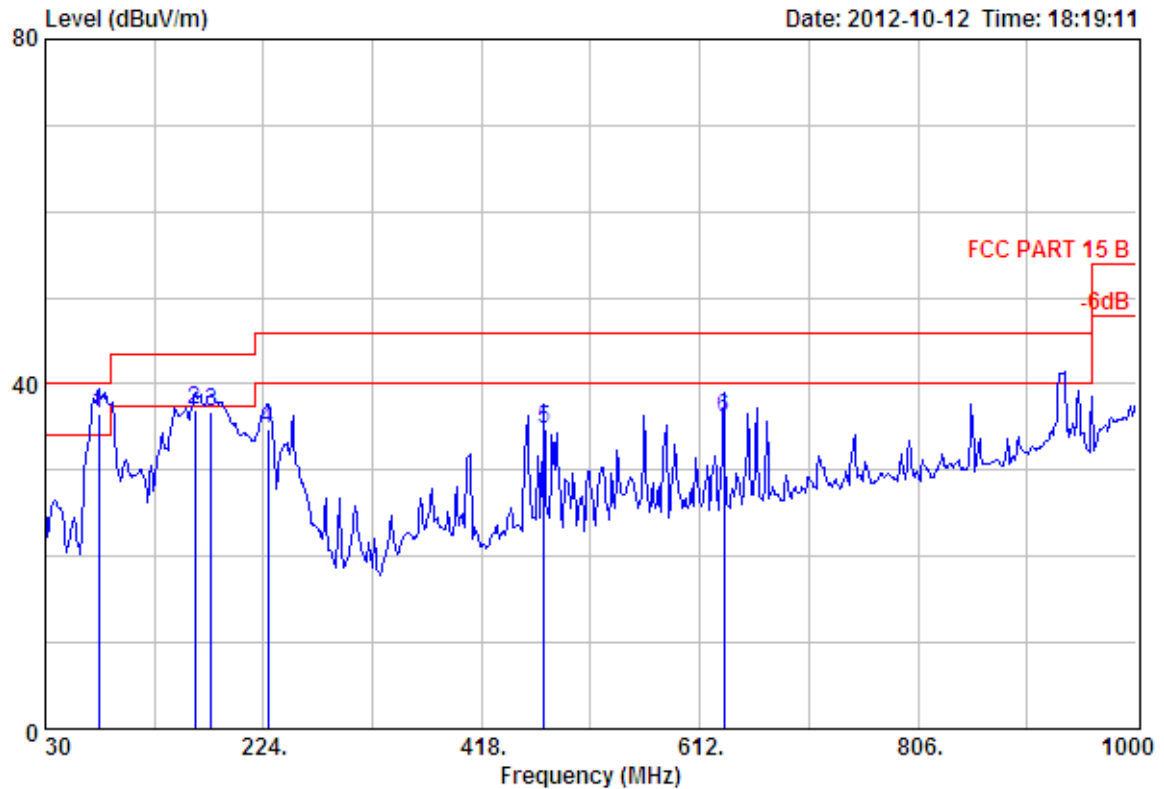
Site no. : 3m Chamber Data no. : 20  
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B  
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printting (Ethernet Interface)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	90.14	8.38	2.91	21.07	32.36	43.50	11.14	QP
2	145.43	11.22	3.73	20.93	35.88	43.50	7.62	QP
3	177.44	8.97	4.09	25.40	38.46	43.50	5.04	QP
4	250.19	11.82	4.84	22.46	39.12	46.00	6.88	QP
5	480.08	17.45	6.60	10.10	34.15	46.00	11.85	QP
6	748.77	22.21	8.20	5.56	35.97	46.00	10.03	QP



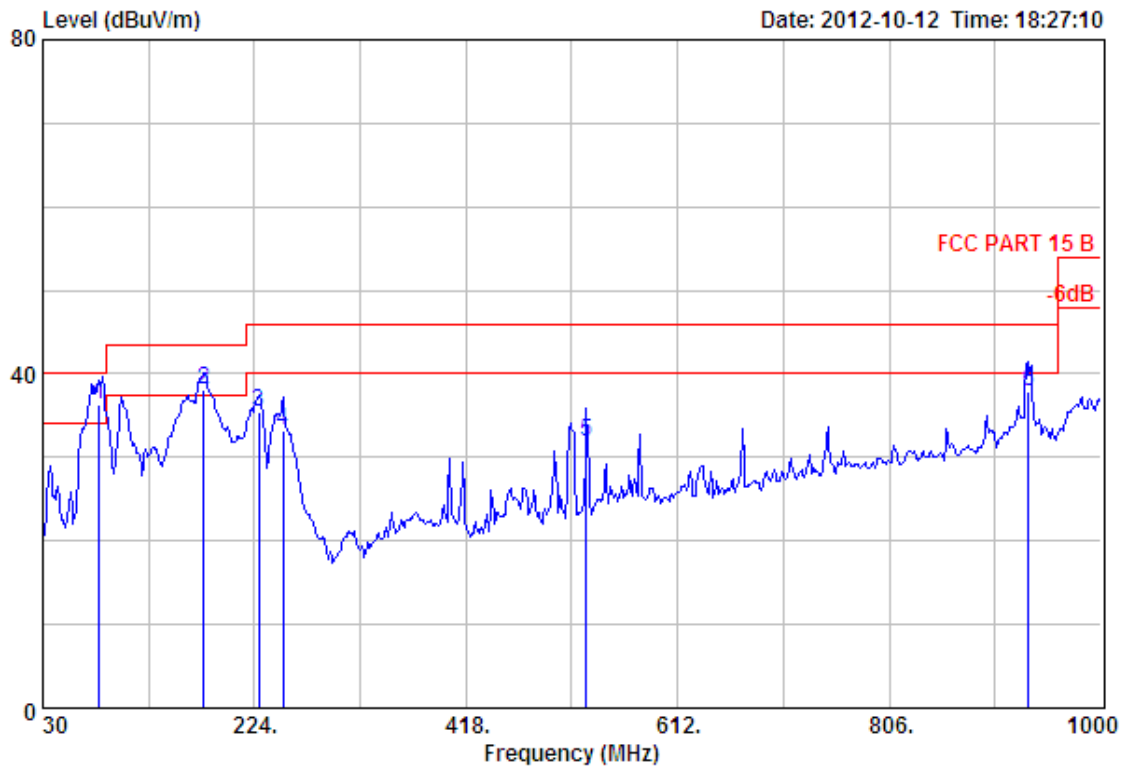
Site no. : 3m Chamber	Data no. : 21
Dis. / Ant. : 3m 27137	Ant. pol. : HORIZONTAL
Limit : FCC PART 15 B	
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa	
Engineer : Tony	
EUT : Dot-matrix Printer	
Power : AC 120V/60Hz	
M/N : Documax 5380	
Test Mode : Printting (USB Interface)	

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Limits (dBuV/m)	Margin (dB)	Reamark (dB)
				Level				
1	82.38	7.34	21.15	31.37		40.00	8.63	QP
2	148.34	11.00	22.30	37.06		43.50	6.44	QP
3	179.38	8.96	25.79	38.86		43.50	4.64	QP
4	227.88	9.46	24.52	38.49		46.00	7.51	QP
5	800.18	22.03	7.98	38.40		46.00	7.60	QP
6	911.73	23.61	5.70	38.54		46.00	7.46	QP



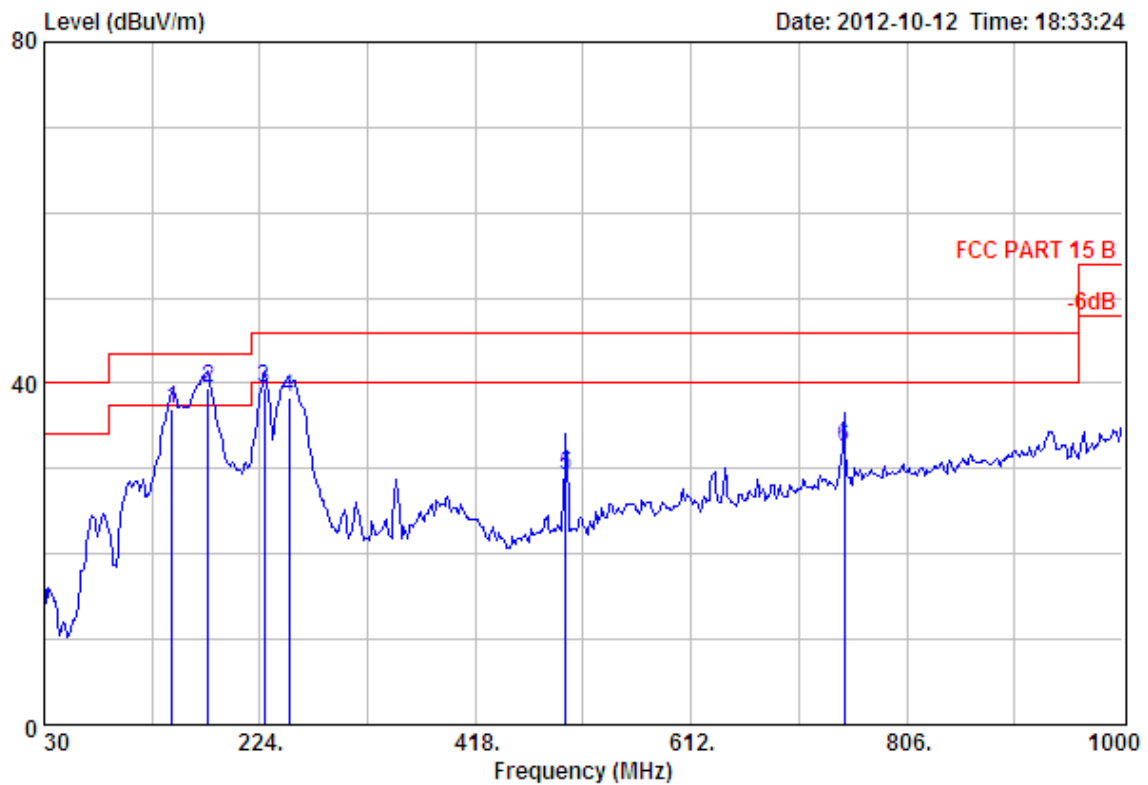
Site no. : 3m Chamber Data no. : 22  
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B  
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printting (USB Interface)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	77.53	6.80	2.83	26.81	36.44	40.00	3.56	QP
2	162.89	10.01	3.91	23.10	37.02	43.50	6.48	QP
3	177.44	8.97	4.09	23.72	36.78	43.50	6.72	QP
4	227.88	9.46	4.51	20.76	34.73	46.00	11.27	QP
5	473.29	17.28	6.59	10.81	34.68	46.00	11.32	QP
6	633.34	20.12	7.59	8.37	36.08	46.00	9.92	QP



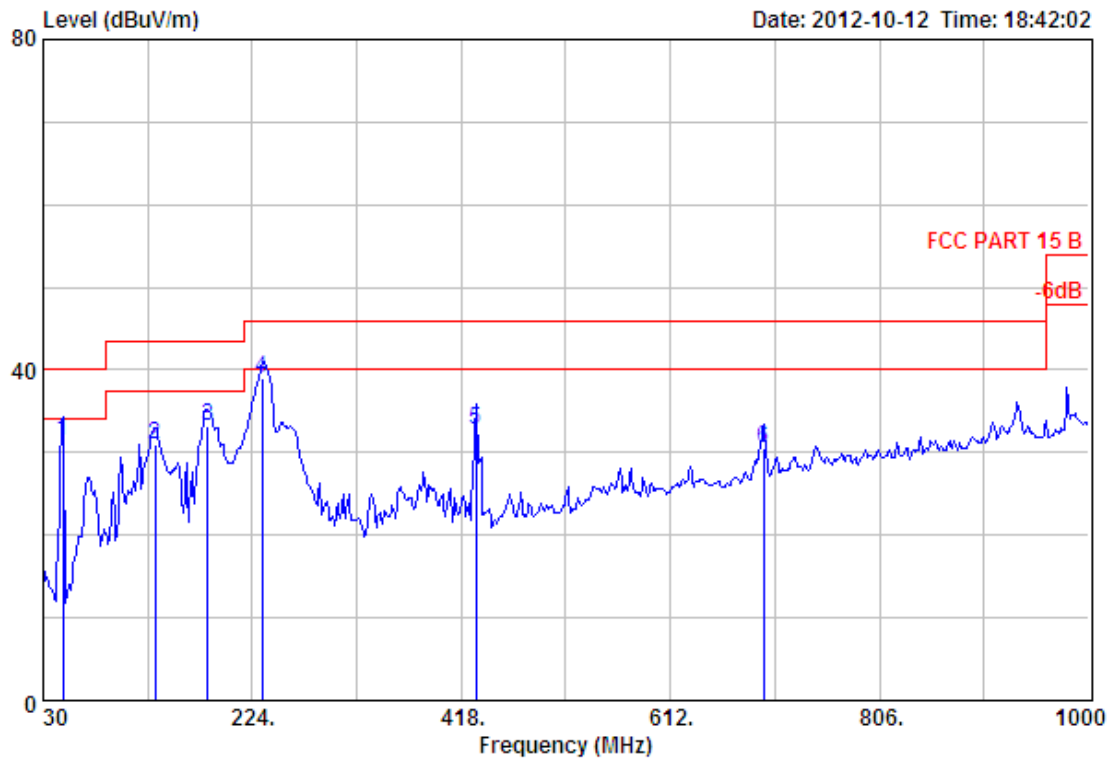
Site no. : 3m Chamber Data no. : 23  
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B  
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printting (Serial Interface)

	Freq.	Ant.	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Reamark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)
1	81.41	7.20	2.86	26.21	36.27	40.00	3.73	QP
2	177.44	8.97	4.09	25.11	38.17	43.50	5.33	QP
3	227.88	9.46	4.51	21.36	35.33	46.00	10.67	QP
4	250.19	11.82	4.84	16.54	33.20	46.00	12.80	QP
5	528.58	18.20	6.91	6.69	31.80	46.00	14.20	QP
6	934.04	24.53	9.36	3.98	37.87	46.00	8.13	QP



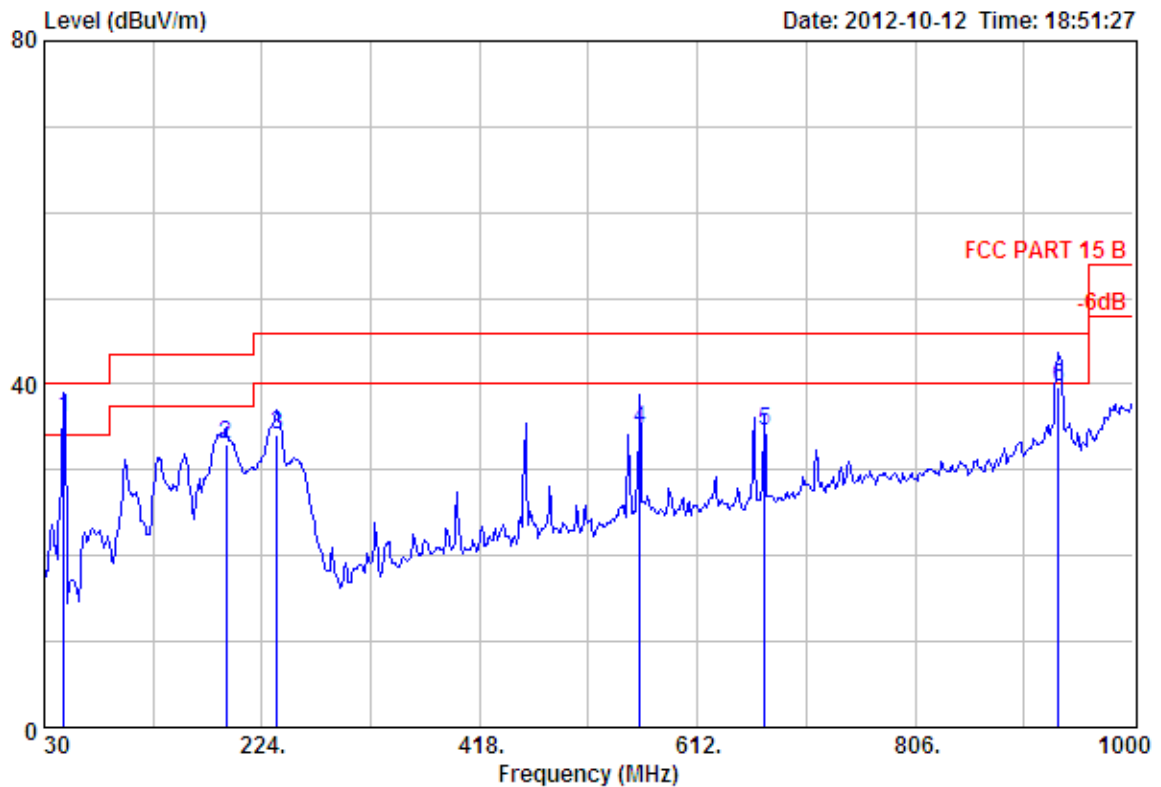
Site no. : 3m Chamber Data no. : 24  
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B  
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380  
 Test Mode : Printting (Serial Interface)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Reamark
					Level (dBuV/m)	Limits (dBuV/m)		
1	145.43	11.22	3.73	22.12	37.07	43.50	6.43	QP
2	177.44	8.97	4.09	26.45	39.51	43.50	3.99	QP
3	227.88	9.46	4.51	25.38	39.35	46.00	6.65	QP
4	250.19	11.82	4.84	21.59	38.25	46.00	7.75	QP
5	499.48	17.87	6.72	4.56	29.15	46.00	16.85	QP
6	749.74	22.19	8.22	2.19	32.60	46.00	13.40	QP



Site no. : 3m Chamber Data no. : 25  
 Dis. / Ant. : 3m 27137 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 B  
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printting (USB Interface)

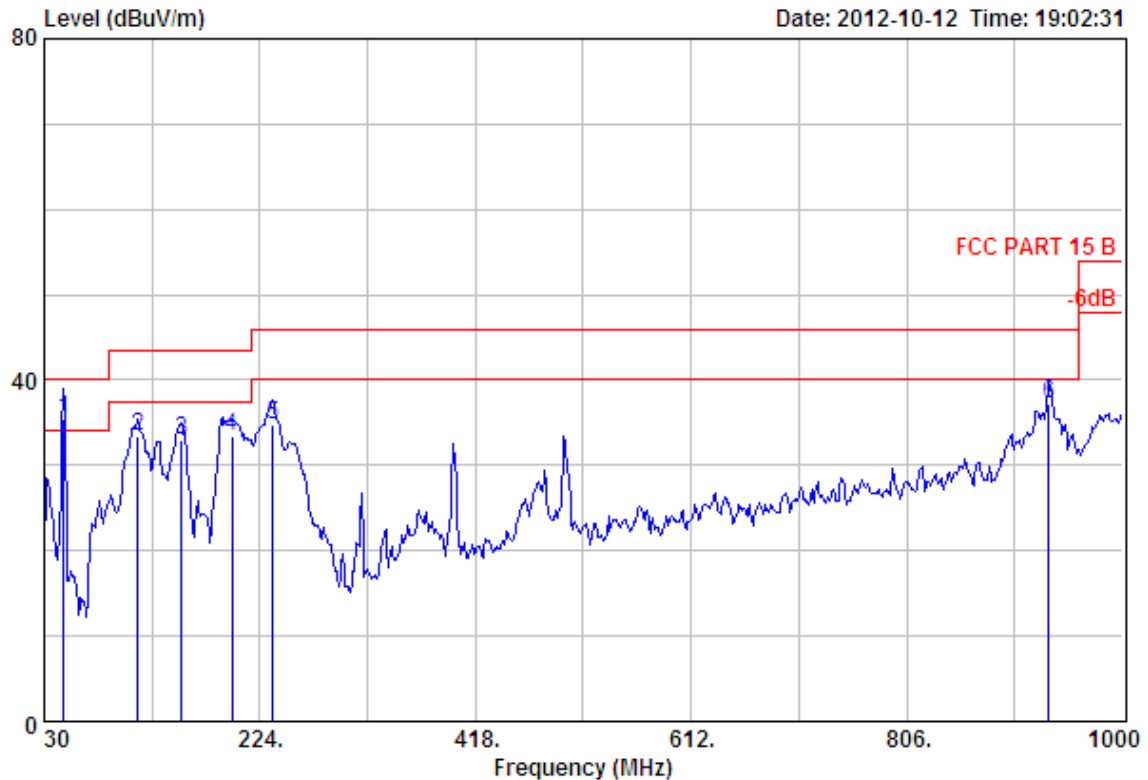
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission			
					Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	48.43	8.37	2.30	20.71	31.38	40.00	8.62	QP
2	133.79	11.36	3.58	16.11	31.05	43.50	12.45	QP
3	182.29	8.76	4.15	20.27	33.18	43.50	10.32	QP
4	232.73	9.59	4.59	24.90	39.08	46.00	6.92	QP
5	431.58	16.09	6.26	10.45	32.80	46.00	13.20	QP
6	698.33	20.54	8.02	1.91	30.47	46.00	15.53	QP



Site no. : 3m Chamber Data no. : 26  
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B  
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printting (USB Interface)

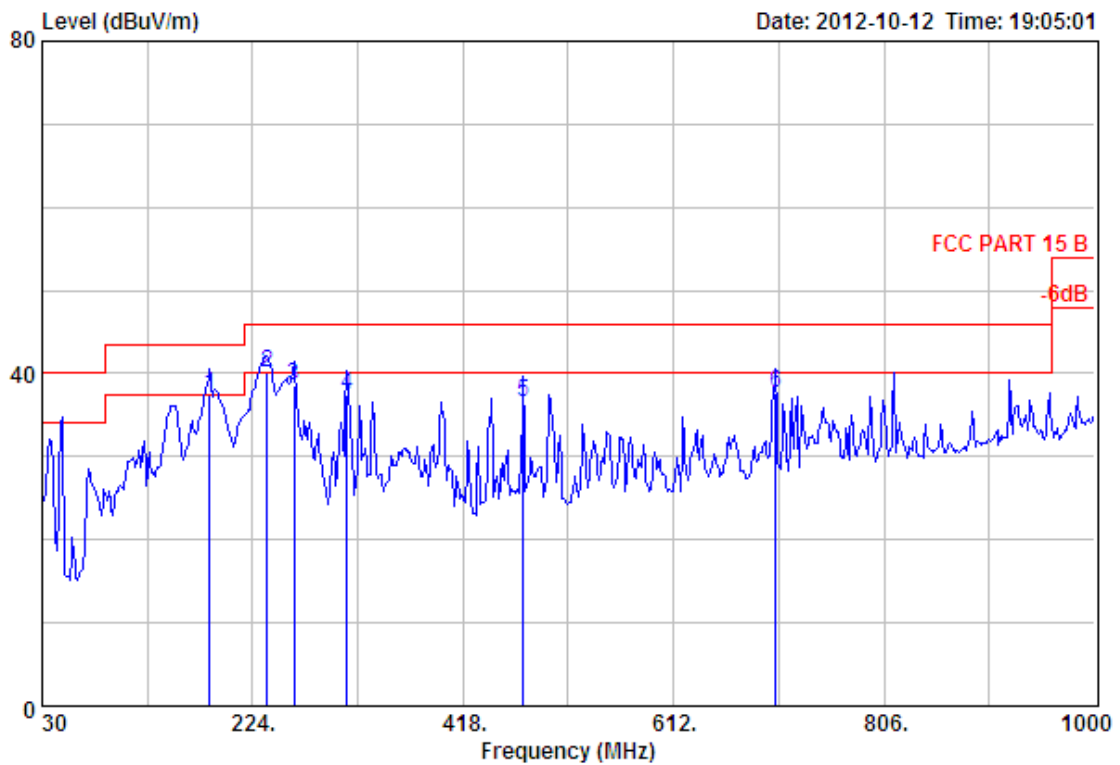
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission		Margin (dB)	Reamark (dB)
					Level (dBuV/m)	Limits (dBuV/m)		
1	47.46	8.78	2.29	24.93	36.00	40.00	4.00	QP
2	191.99	7.85	4.22	20.84	32.91	43.50	10.59	QP
3	237.58	10.01	4.65	19.34	34.00	46.00	12.00	QP
4	560.59	19.70	7.10	7.97	34.77	46.00	11.23	QP
5	672.14	20.23	7.81	6.51	34.55	46.00	11.45	QP
6	934.04	24.53	9.36	5.84	39.73	46.00	6.27	QP





Site no.	: 3m Chamber	Data no. :	27
Dis. / Ant.	: 3m 27137	Ant. pol. :	VERTICAL
Limit	: FCC PART 15 B		
Env. / Ins.	: Temp:25.6';Humi:56%;Press:101.52kPa		
Engineer	: Tony		
EUT	: Dot-matrix Printer		
Power	: AC 120V/60Hz		
M/N	: Documax 5380/1		
Test Mode	: Printting (Parallel Interface)		

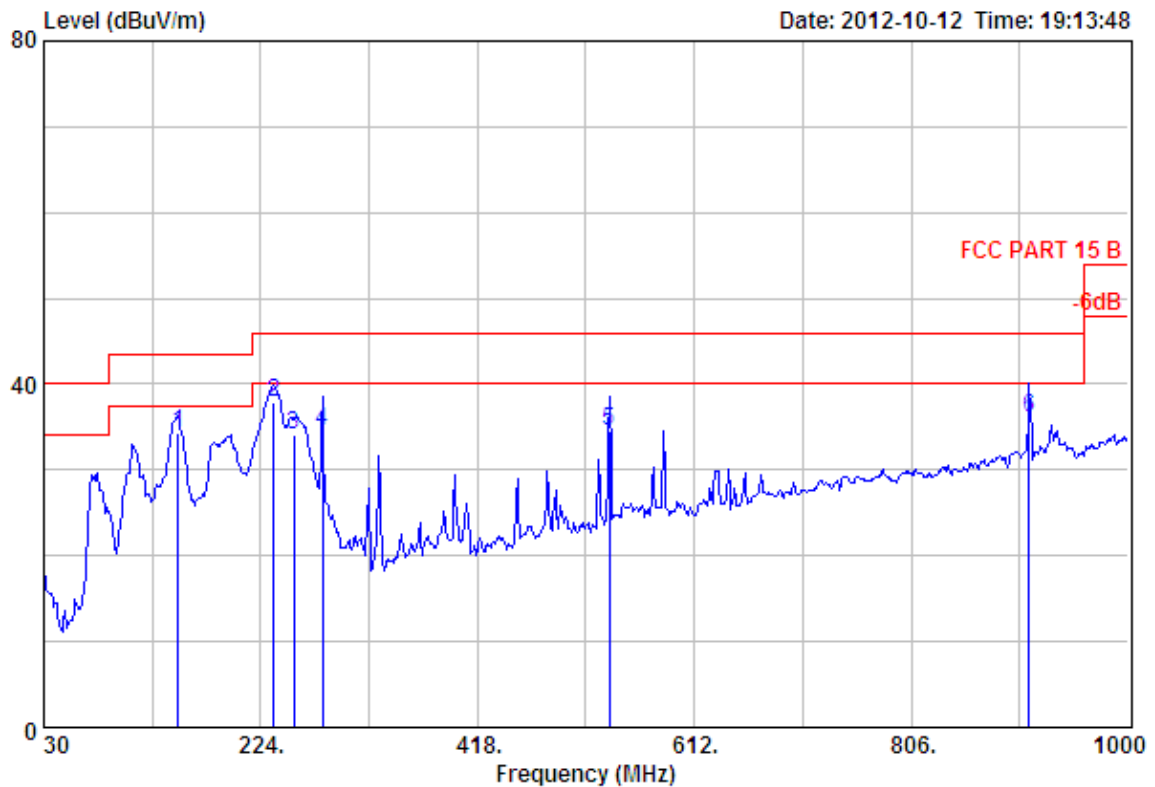
	Freq.	Ant.	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Reamark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	(dB)
1	47.46	8.78	2.29	24.39	35.46	40.00	4.54	QP
2	114.39	10.85	3.26	19.23	33.34	43.50	10.16	QP
3	153.19	10.75	3.81	18.37	32.93	43.50	10.57	QP
4	198.78	7.71	4.24	21.40	33.35	43.50	10.15	QP
5	235.64	9.80	4.64	20.33	34.77	46.00	11.23	QP
6	934.04	24.53	9.36	3.28	37.17	46.00	8.83	QP



```

Site no.       : 3m Chamber                      Data no. : 28
Dis. / Ant.    : 3m 27137                        Ant. pol. : HORIZONTAL
Limit          : FCC PART 15 B
Env. / Ins.    : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer       : Tony
EUT            : Dot-matrix Printer
Power          : AC 120V/60Hz
M/N            : Documax 5380/1
Test Mode      : Printting (Parallel Interface)
  
```

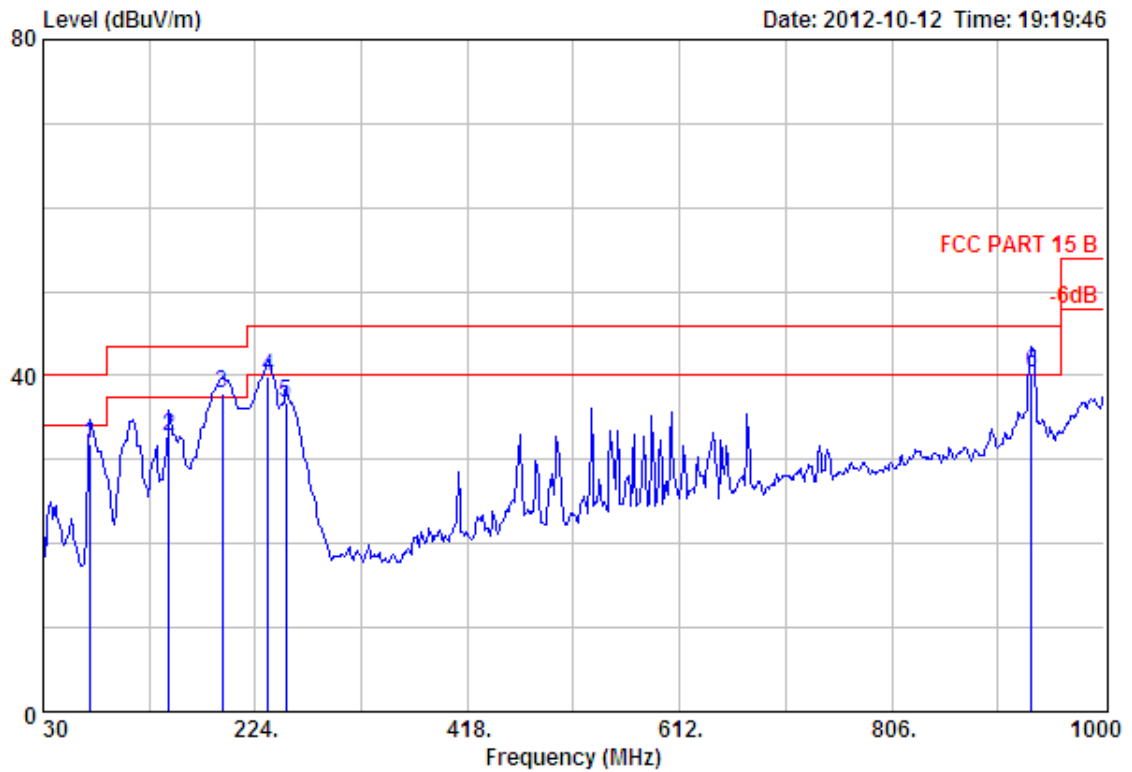
	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	184.23	8.57	4.18	24.71	37.46	43.50	6.04	QP
2	237.58	10.01	4.65	25.48	40.14	46.00	5.86	QP
3	261.83	12.96	4.95	20.54	38.45	46.00	7.55	QP
4	311.30	13.24	5.33	18.82	37.39	46.00	8.61	QP
5	473.29	17.28	6.59	12.69	36.56	46.00	9.44	QP
6	706.09	20.84	7.98	8.83	37.65	46.00	8.35	QP



```

Site no.       : 3m Chamber                      Data no. : 29
Dis. / Ant.    : 3m 27137                      Ant. pol. : HORIZONTAL
Limit          : FCC PART 15 B
Env. / Ins.    : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer       : Tony
EUT            : Dot-matrix Printer
Power          : AC 120V/60Hz
M/N            : Documax 5380/1
Test Mode      : Printing (Serial Interface)
  
```

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	150.28	10.86	3.78	19.73	34.37	43.50	9.13	QP
2	235.64	9.80	4.64	23.49	37.93	46.00	8.07	QP
3	254.07	12.29	4.85	17.02	34.16	46.00	11.84	QP
4	279.29	12.37	5.08	17.00	34.45	46.00	11.55	QP
5	536.34	19.01	6.94	8.61	34.56	46.00	11.44	QP
6	911.73	23.61	9.23	3.19	36.03	46.00	9.97	QP

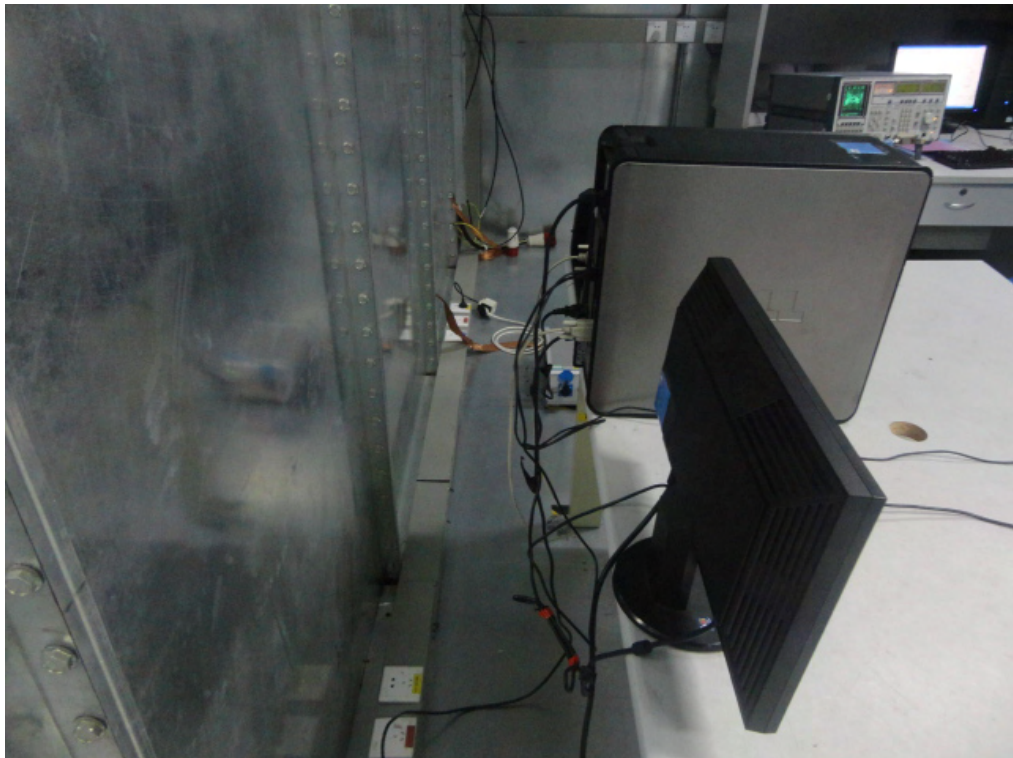


Site no. : 3m Chamber Data no. : 30  
 Dis. / Ant. : 3m 27137 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 B  
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa  
 Engineer : Tony  
 EUT : Dot-matrix Printer  
 Power : AC 120V/60Hz  
 M/N : Documax 5380/1  
 Test Mode : Printting (Serial Interface)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reamark (dB)
1	72.68	6.12	2.83	22.85	31.80	40.00	8.20	QP
2	145.43	11.22	3.73	17.83	32.78	43.50	10.72	QP
3	193.93	7.76	4.21	25.82	37.79	43.50	5.71	QP
4	235.64	9.80	4.64	25.50	39.94	46.00	6.06	QP
5	252.13	12.06	4.82	19.84	36.72	46.00	9.28	QP
6	934.04	24.53	9.36	6.46	40.35	46.00	5.65	QP

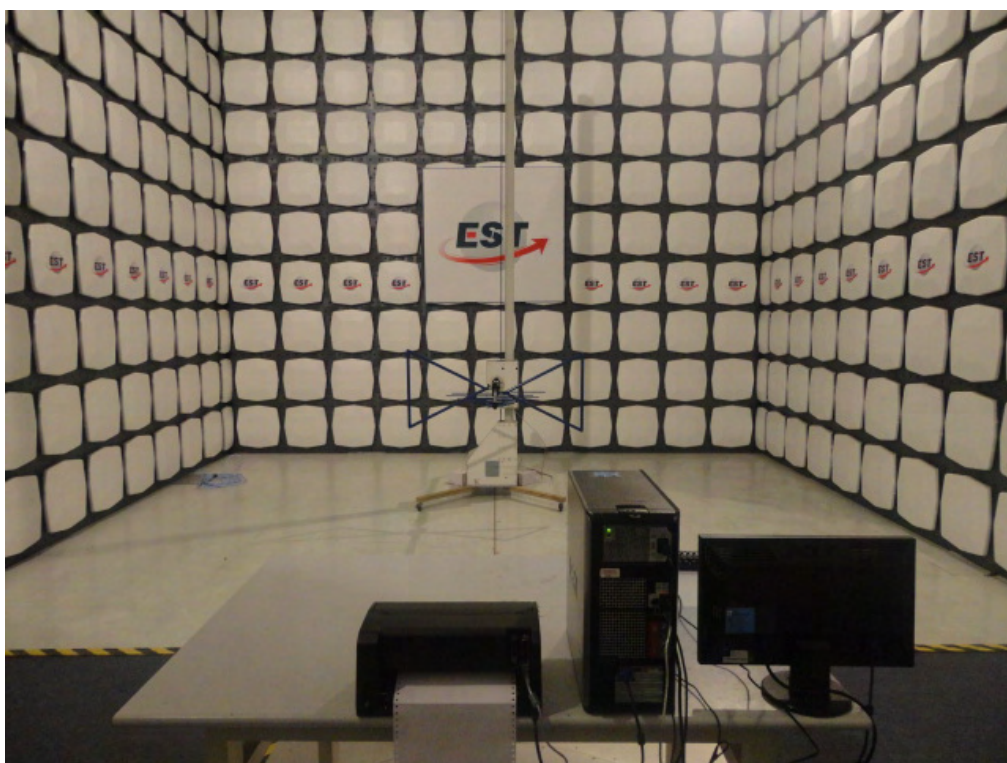
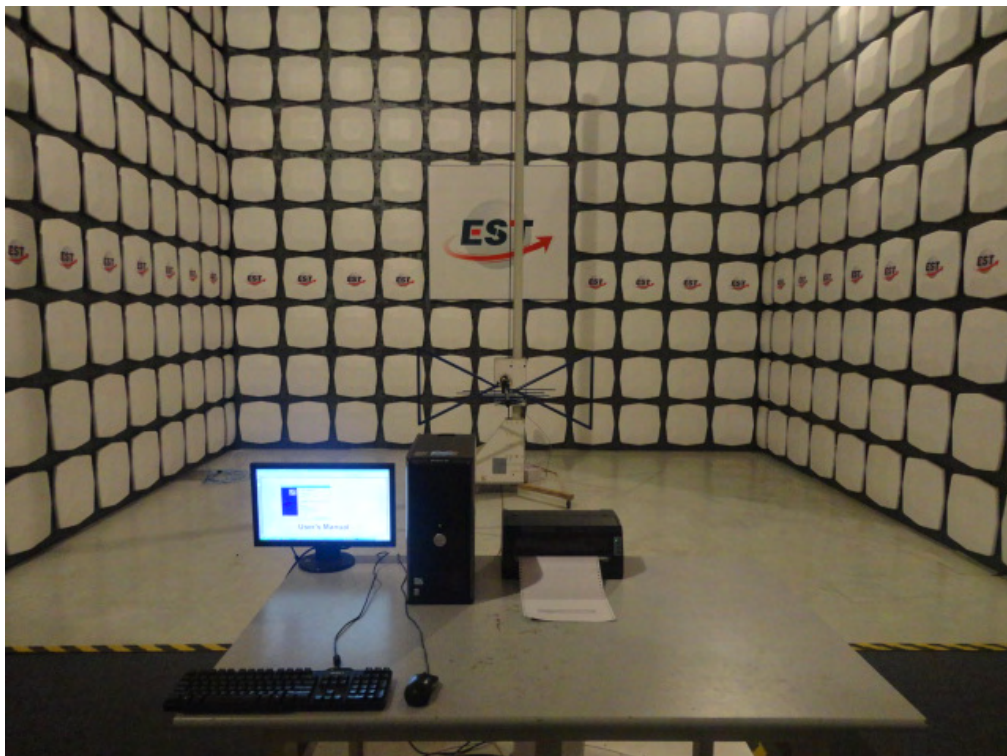
## 5. PHOTOGRAPHS OF TEST SETUP

### Conducted Emission Test





## Radiated Emission Test



## 6. PHOTOGRAPHS OF THE EUT

External Photos  
M/N: Documax 5380





**External Photos**  
**M/N: Documax 5380**

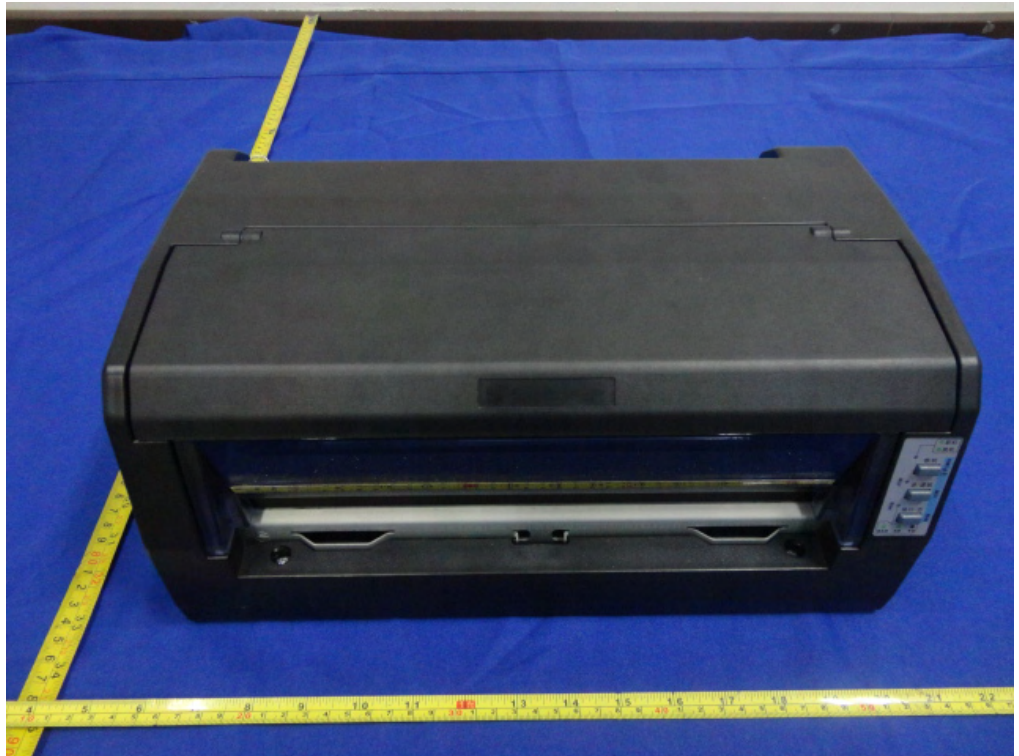




**External Photos**  
**M/N: Documax 5380**



**External Photos**  
**M/N: Documax 5380/1**





**External Photos**  
**M/N: Documax 5380/1**



**External Photos**  
**M/N: Documax 5380/1**



**External Photos**  
**M/N: Documax 5380/2**





**External Photos**  
**M/N: Documax 5380/2**

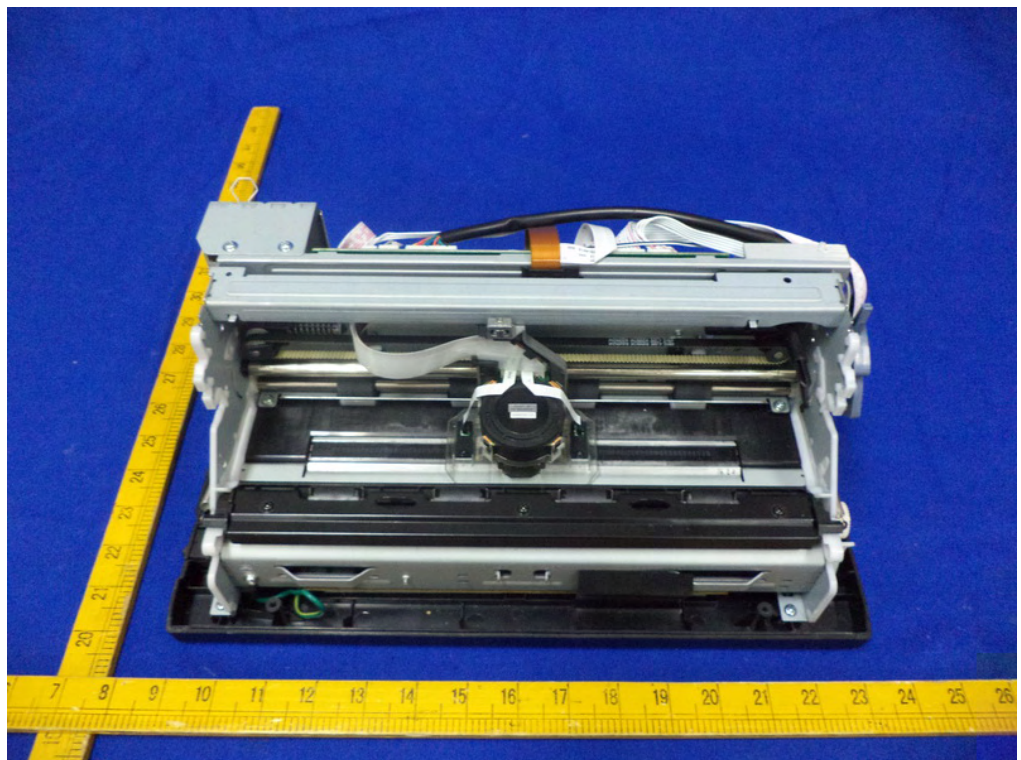
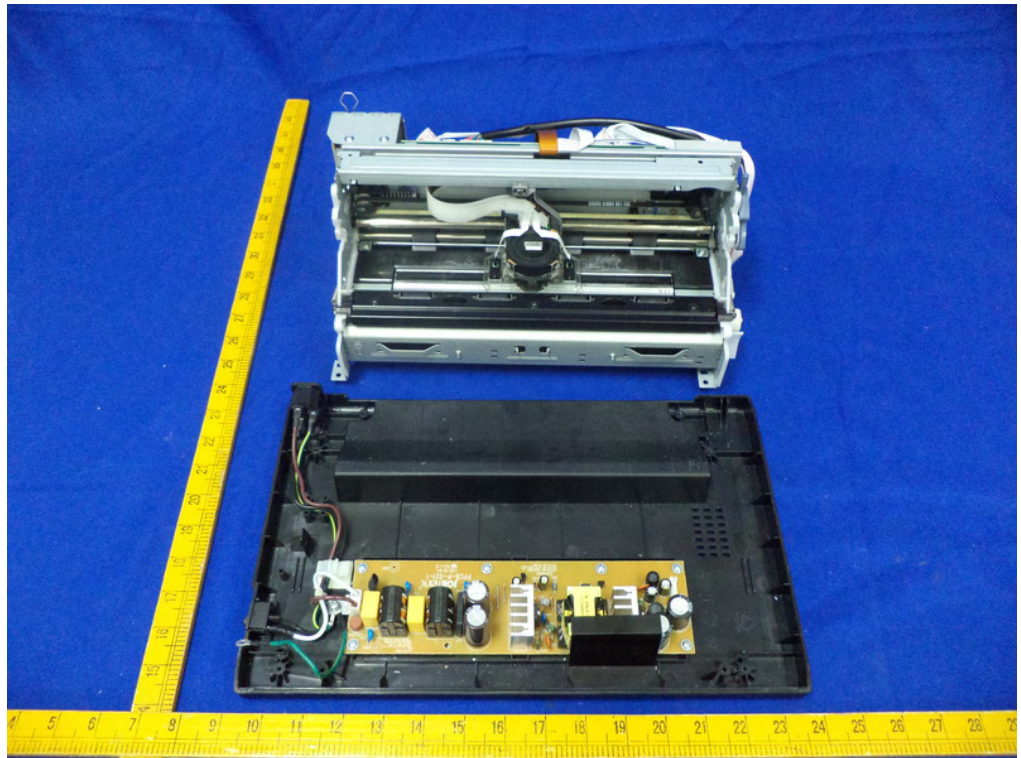


**External Photos**  
**M/N: Documax 5380/2**



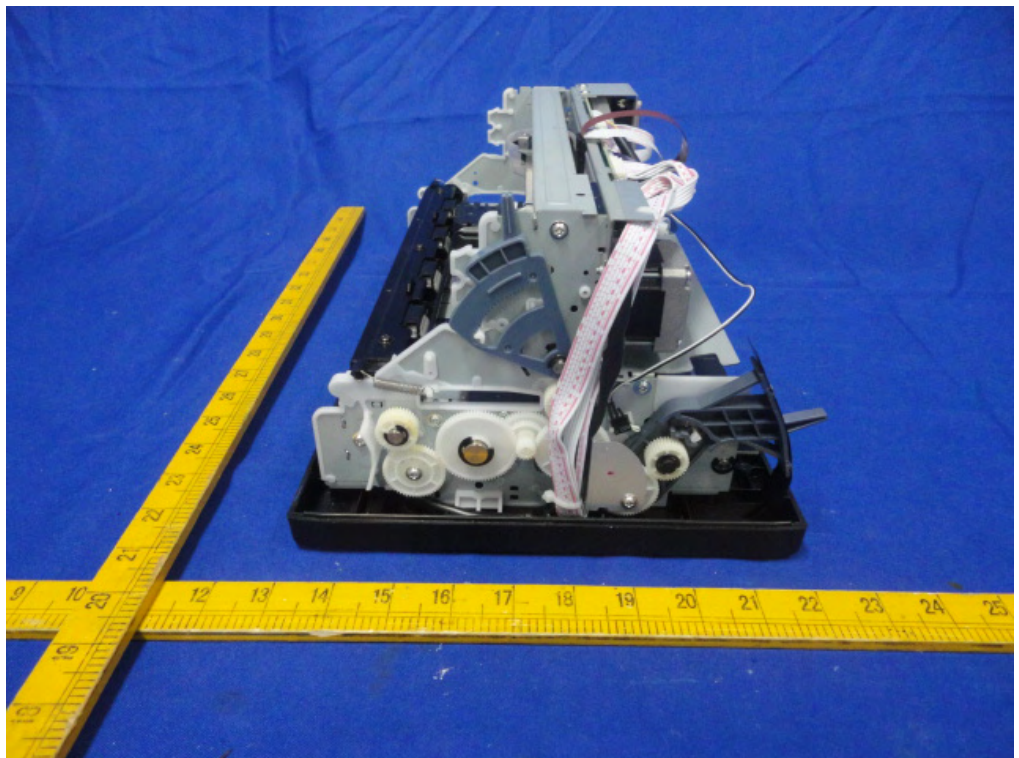
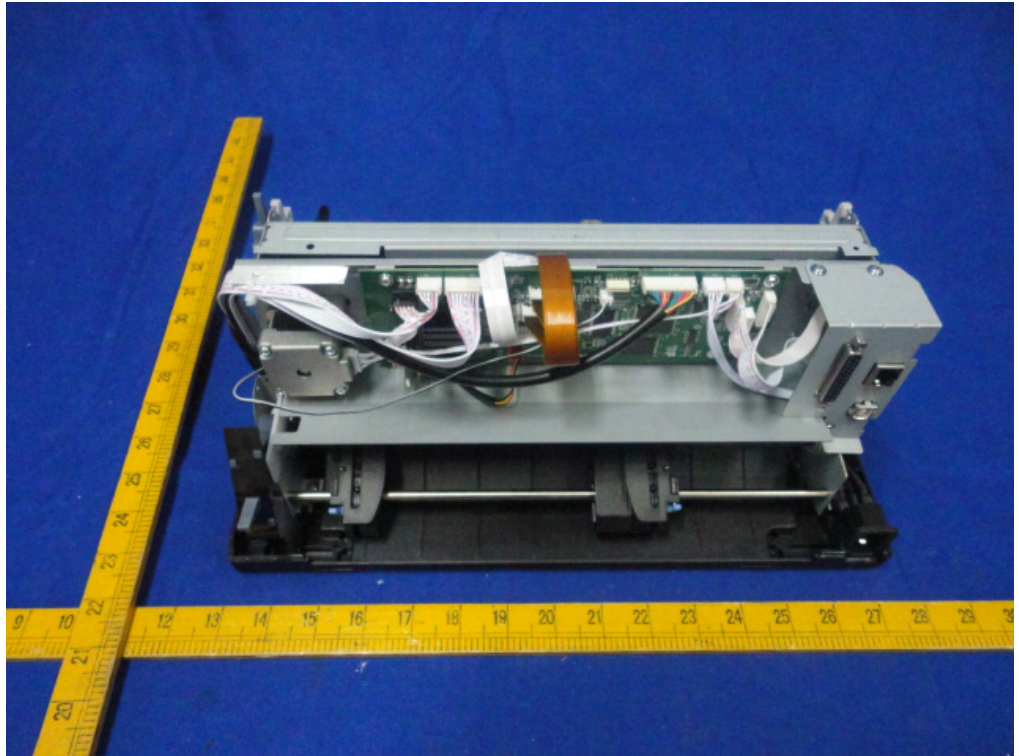


**Internal Photos**  
**M/N: Documax 5380**

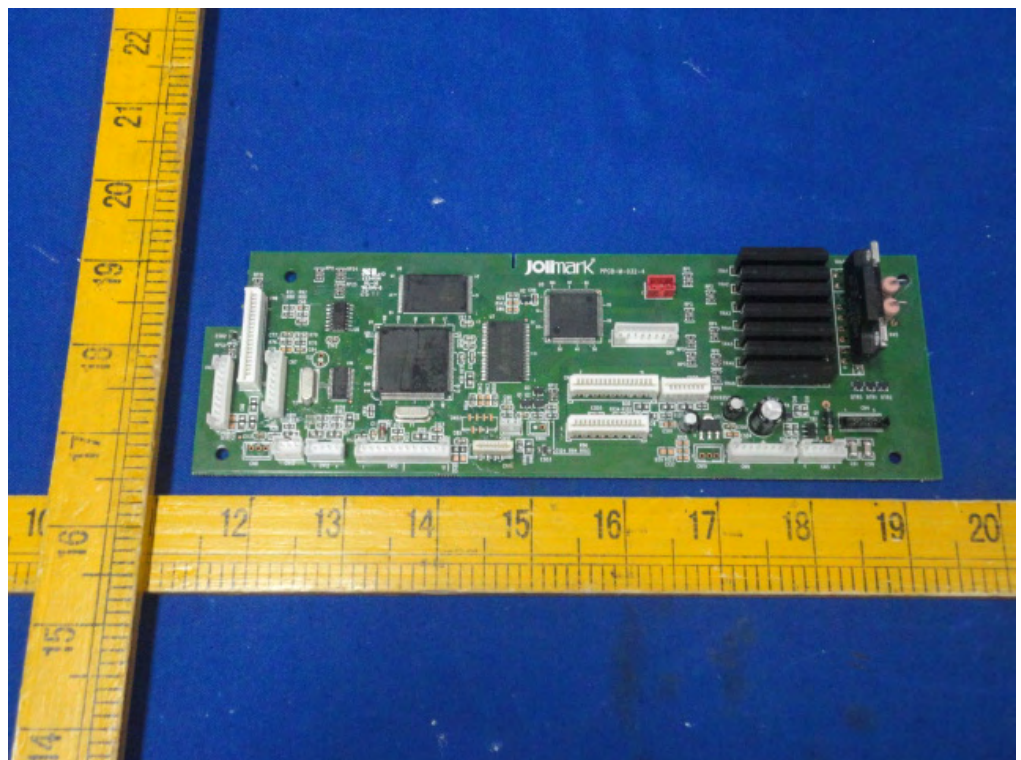
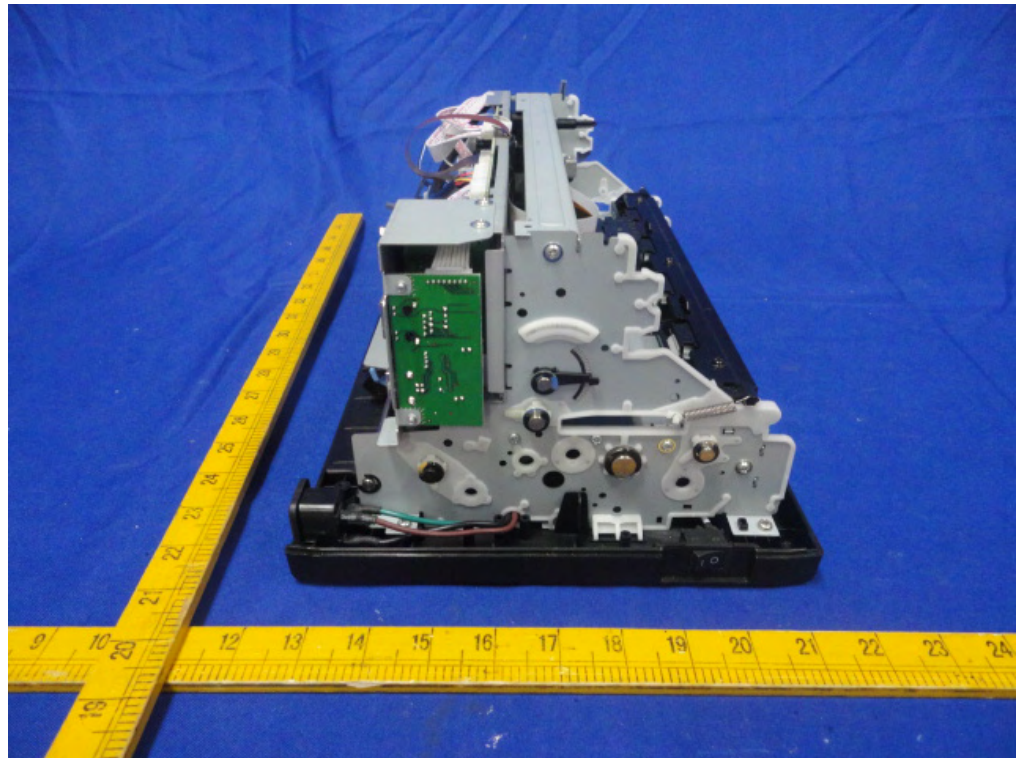




**Internal Photos**  
**M/N: Documax 5380**

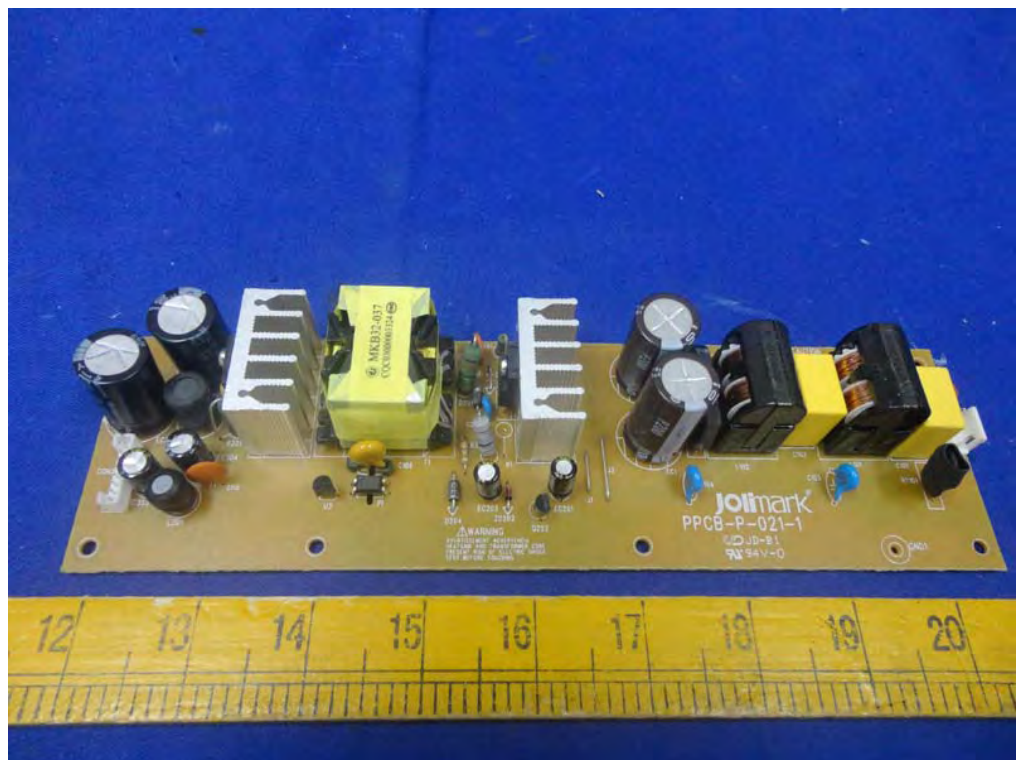
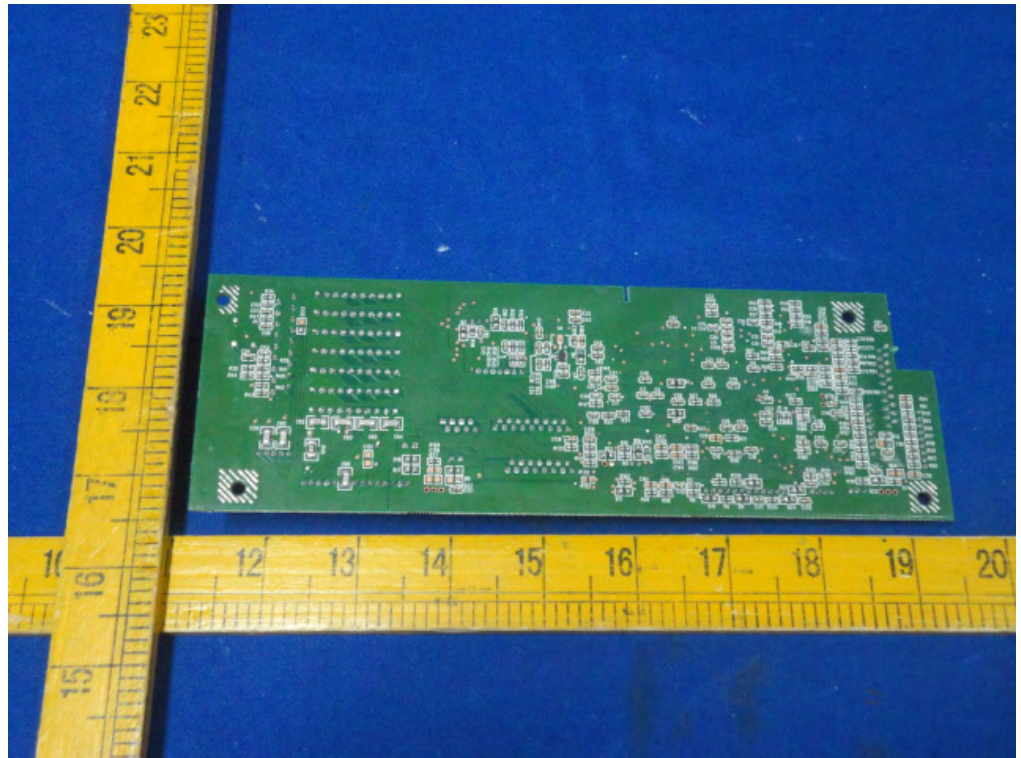


**Internal Photos**  
**M/N: Documax 5380**

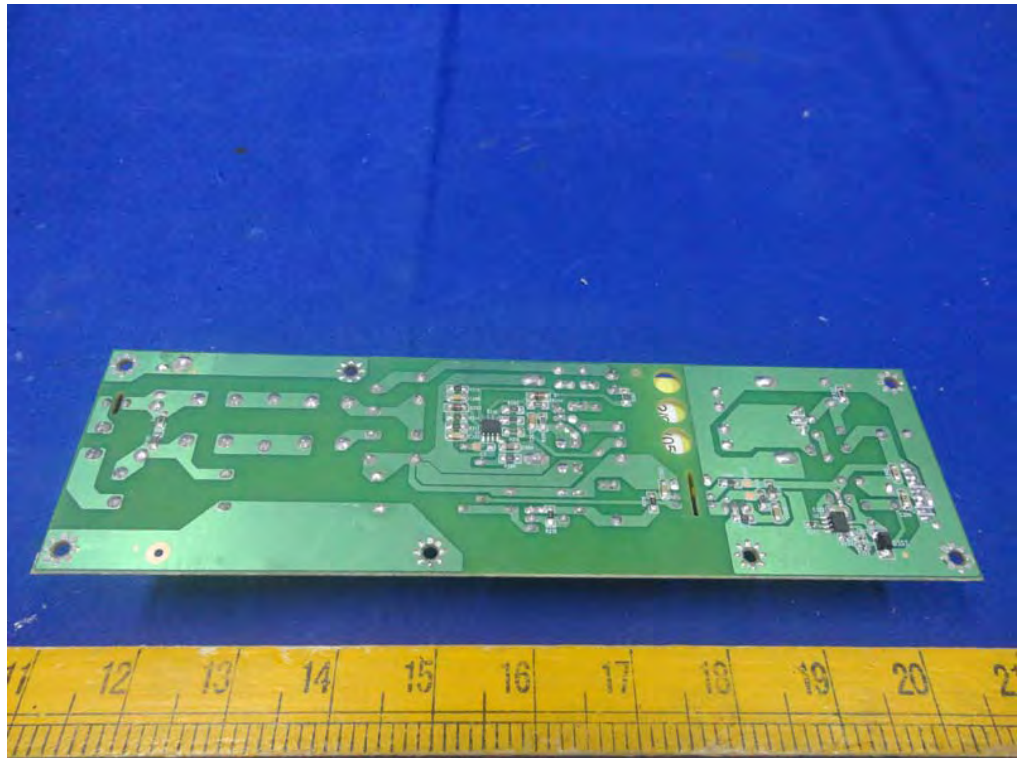




**Internal Photos**  
**M/N: Documax 5380**

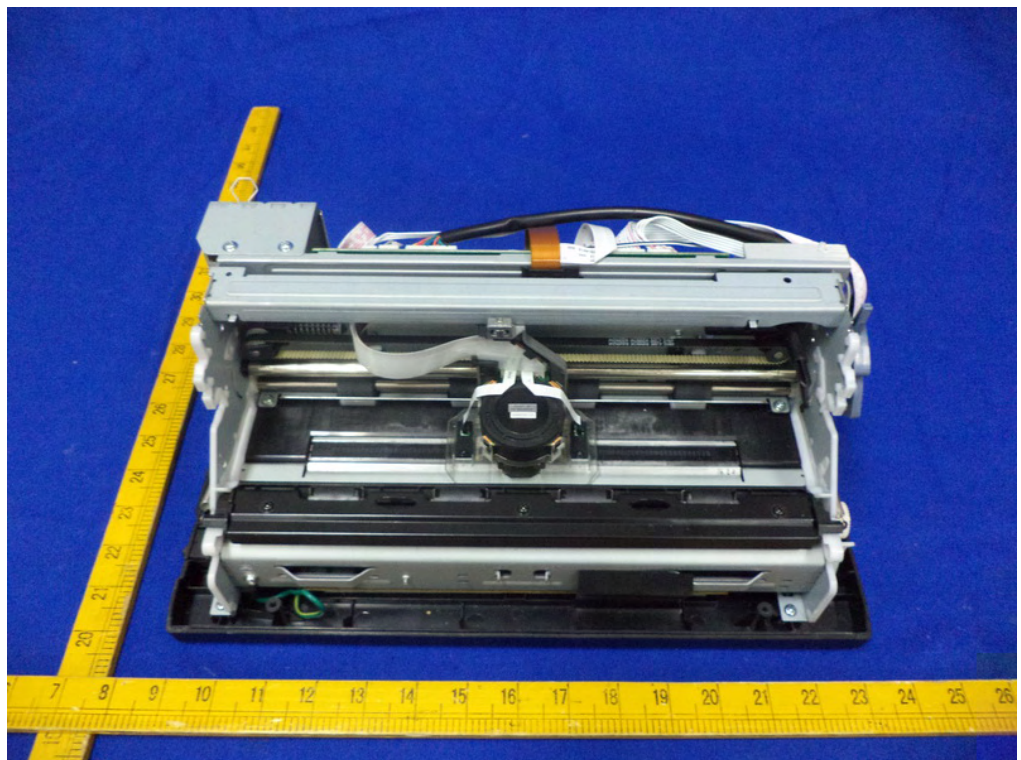
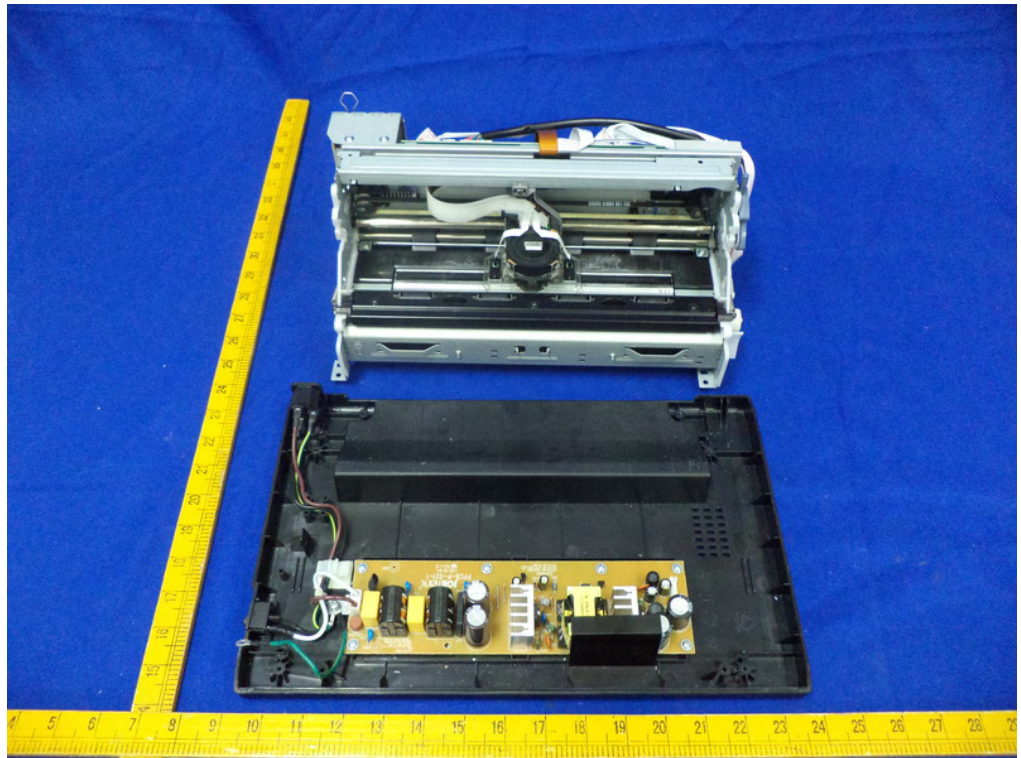


**Internal Photos**  
**M/N: Documax 5380**

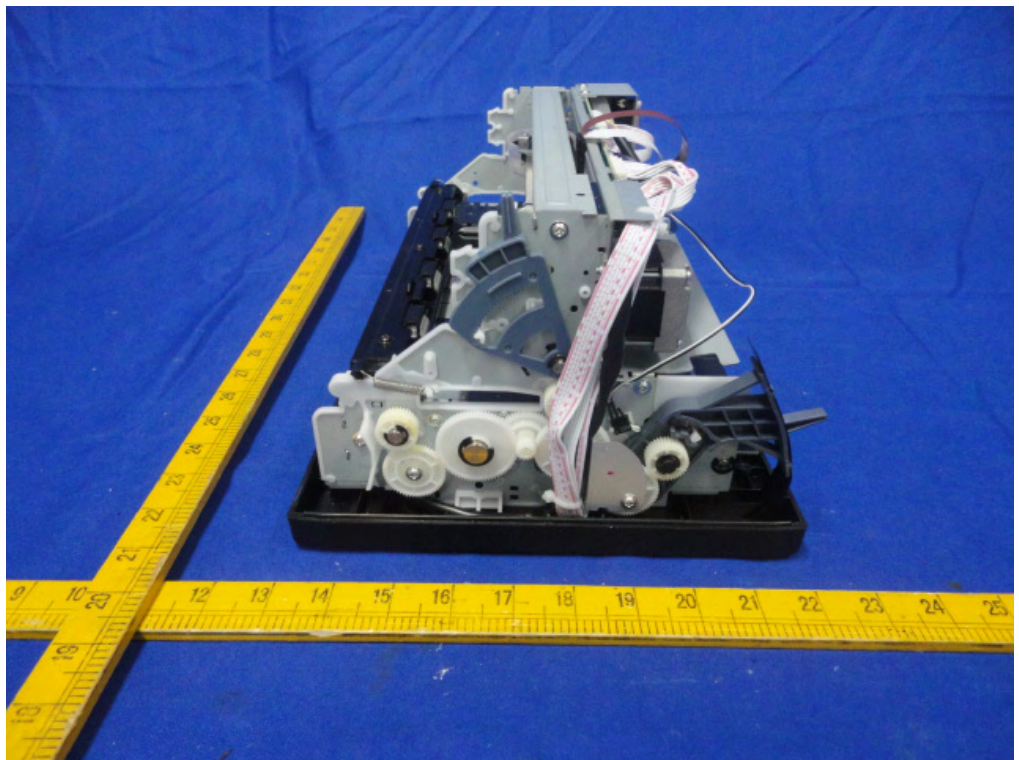
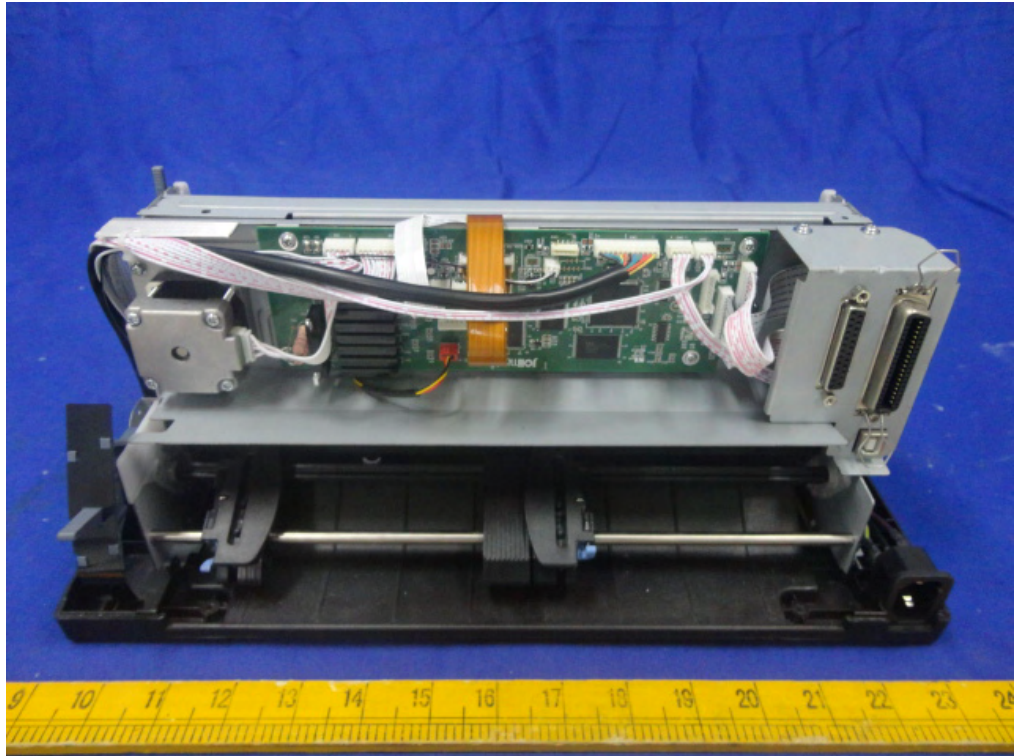




**Internal Photos**  
**M/N: Documax 5380/1**

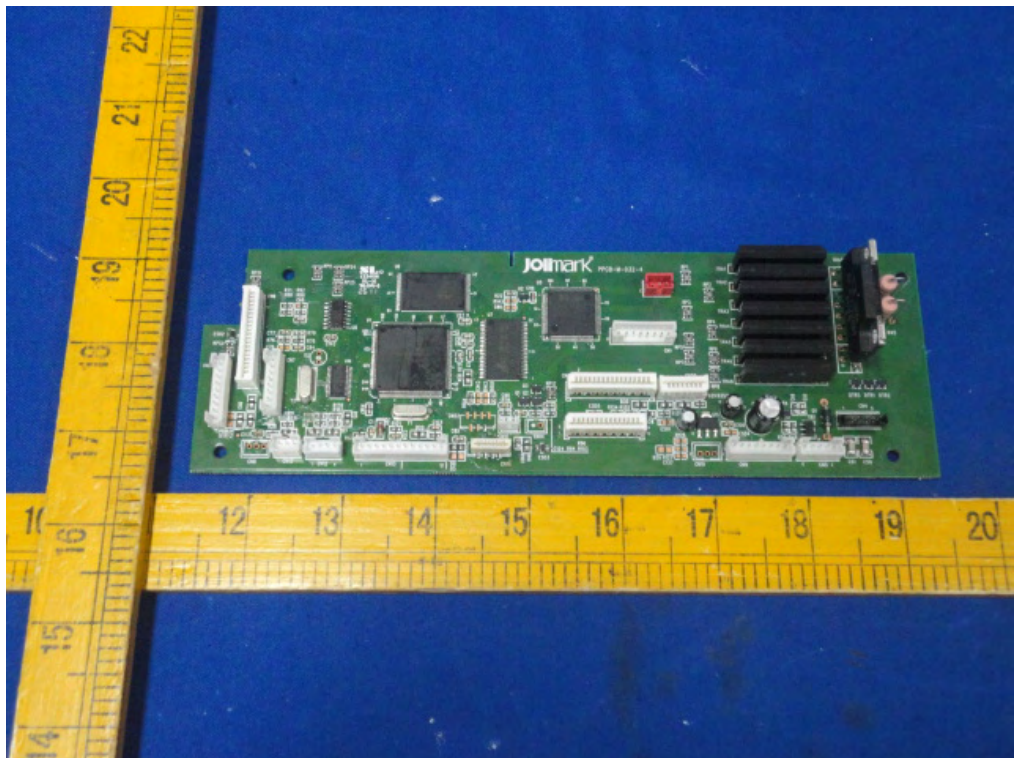
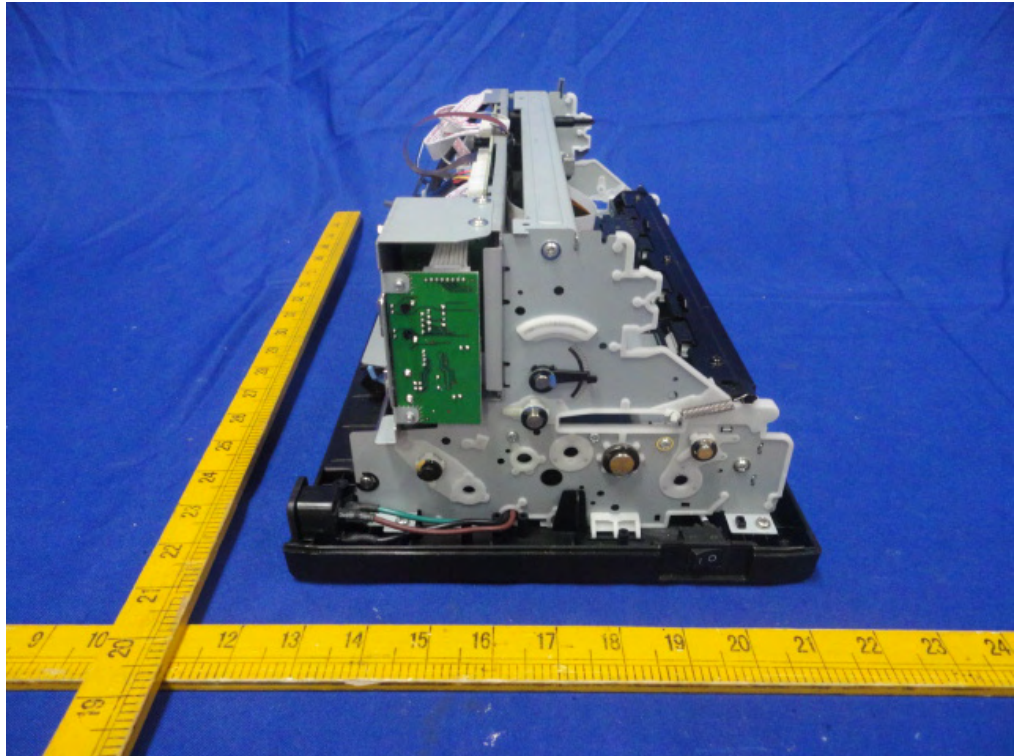


**Internal Photos**  
**M/N: Documax 5380**

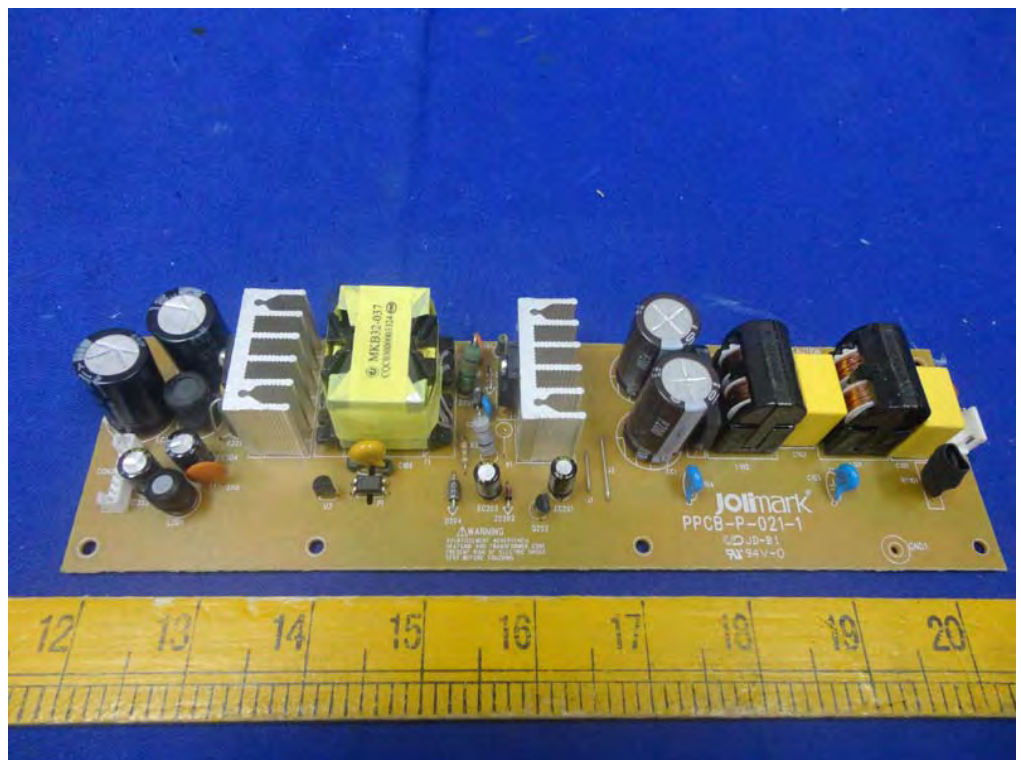
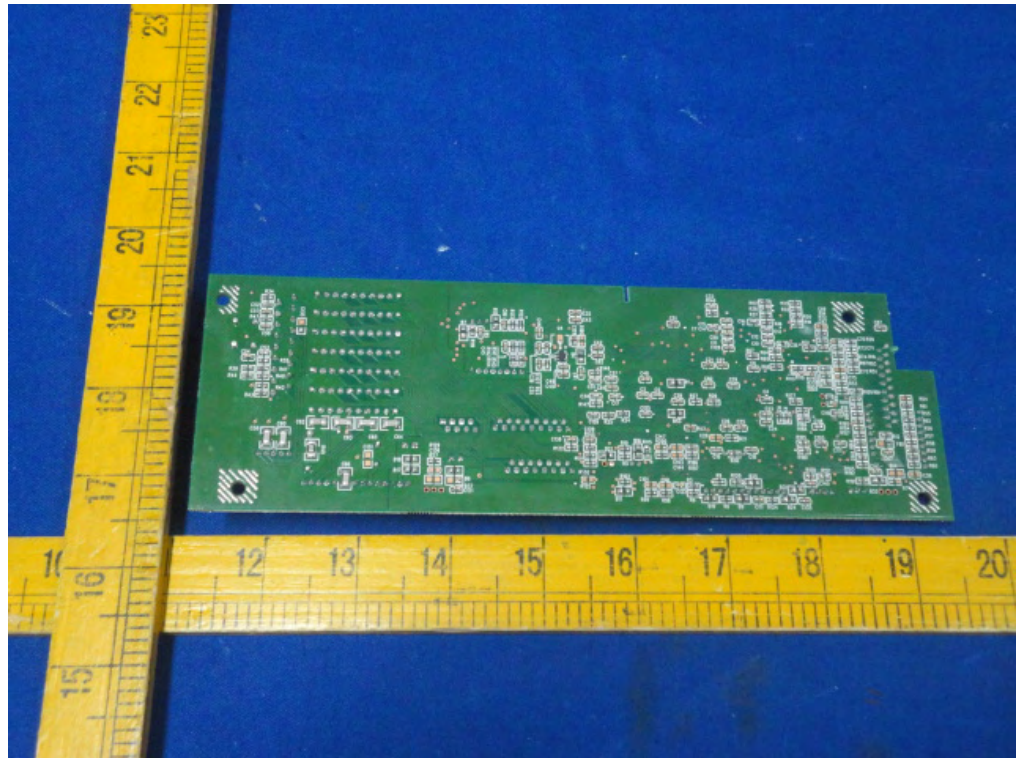




**Internal Photos**  
**M/N: Documax 5380**

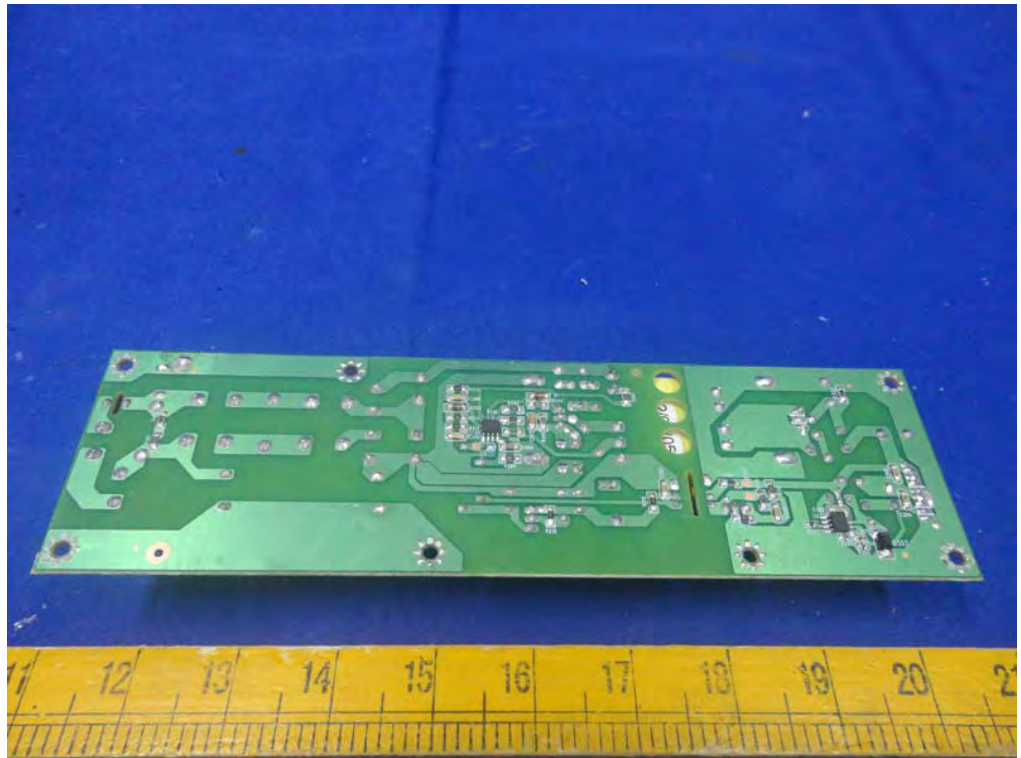


**Internal Photos**  
**M/N: Documax 5380**





**Internal Photos**  
**M/N: Documax 5380**



**Cable Photos**

