

Emission of electromagnetic disturbance

Test Report No. : ERI-FCC05-0037

Equipment : Camera Phone Companion Wifi Picture Frame

Name of basic model : WPF 180

Family model : None

FCC ID : None

Manufacturer : PF Digital Inc.

Applicant : PF Digital Inc.

Tested date : 2005. 08.29- 08. 30.

Issued date : 2005. 09.1.

Test results : PASS

Test Standards : FCC Part 15 Subpart B (Class B)
/Other Class B digital devices & peripherals

Affirmation	Measurements performed by Name : Park, Myung-Chu 	Approved by Title : Manager Name: Rim, Uk-CI 
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EMC Research Institute President



Sep 1, 2005

The above test certificate is the accredited test results by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

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1. CLIENT INFORMATION

The EUT has been tested by request of :

Company : PF Digital Inc.
Address : 1360 Beverly Road, Suite 100, McLean, VA 22101, USA
Name of contact : Jeff Y. Luo / VP, Development
Telephone : 571.218.7095
Facsimile : 831-603-6500

2. LABORATORY INFORMATION

The 10 m full-anechoic chamber and/or EMC facilities are used for these testing.
These facilities were accredited by KOLAS, EK, MIC of Korea and FCC of USA.

Address

EMC RESEARCH INSTITUTE.

66-6, JEIL-RI, YANGJI-MYUN, YOUNGIN-CITY, GYEONGGI-DO, KOREA

Telephone No. : +82-31-336-1186~7
Facsimile No. : +82-31-336-1184

Registered No.

KOLAS : 111
EK : J
MIC : KR0030
FCC Filing No. : 302567

3. EQUIPMENT UNDER TEST INFORMATION (EUT)

3.1 Identification of the EUT

Type of equipment : Camera Phone Companion Wifi Picture Frame
Model name : WPF 180
Manufacturer : PF Digital Inc.
Address : 1360 Beverly Road, Suite 100, McLean, VA 22101, USA
Telephone : 571.218.7095
Facsimile : 831-603-6500
Country of origin : USA
Rating : DC 12V

3.2 Additional information about the EUT

Classification : Class B

The essential components for EUT working is below.

Units	Model No.	Serial No.	Manufacture
-	-	-	-

Family Models List: None

Basic Model	Variant Model	Differential point
-	-	-
-	-	-

3.3 Peripheral equipment

Equipment needed to operate the EUT correctly is following.

Description	Model No.	Serial No.	Manufacture
Keyboard	E03633QLUSQ	MX03432804	HP
Mouse	M-S34	-	COMPAQ
Printer	C6427A	CN13V1B1RY	HP
Monitor	PN15VT	P181H80R807018	Chung hwa electronics
Adaptor	DSA-0151F-12	CN13V1B1RY	JQA
PC	MTC32	FSZS91S	DELL
-	-	-	-

4. TEST SPECIFICATIONS

4.1 Standards

The standards for a EUT are the following:

FCC Part 15 Subpart B (Class B) /Other Class B digital devices & peripherals

5. TEST RESULTS

The results in this report apply only to sample tested:

Standards	Test items / Frequency	Result
ANSI C63.4-2003	1. Main Terminal disturbance voltage : 150 kHz – 30 MHz	Pass
ANSI C63.4-2003	2. Radiated disturbance : 30 MHz – 1000 MHz	Pass

5.1 CONTINUOUS DISTURBANCE VOLTAGE, MAIN TERMINAL

: Frequency range 0.15 MHz to 30 MHz

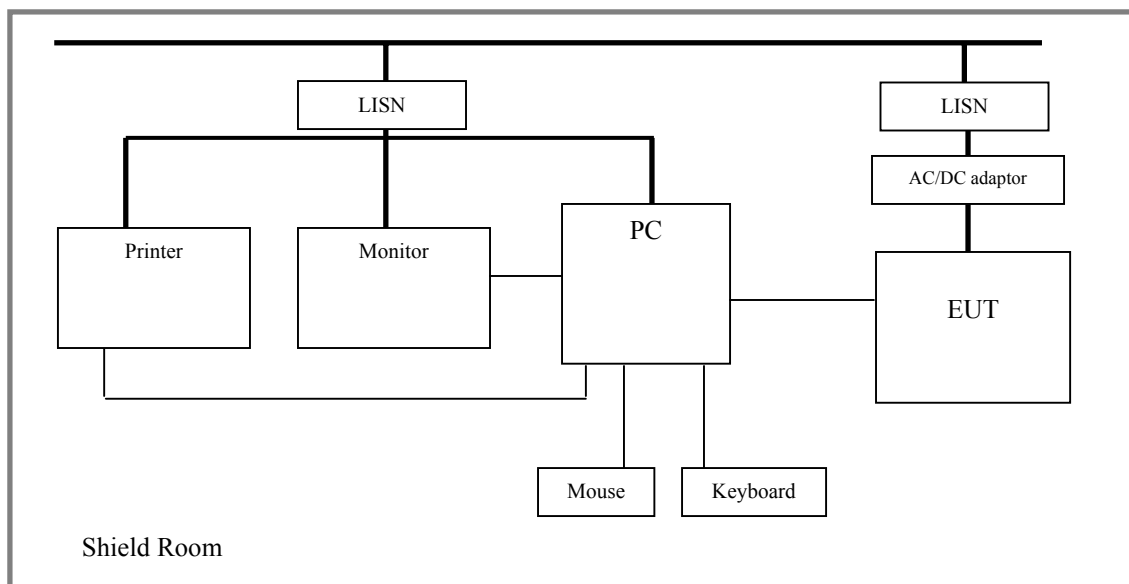
5.1.1 Operating environment

Temperature : 23.0 ± 0.7 °C
Relative Humidity : 59.0 ± 4.5 %
Atmospheric pressure : 992 ± 0.25 mbar

5.1.2 Test set-up and test procedures



Continuous Disturbance Voltage, Main Terminal



The mains terminal of the EUT was measured in a shield room. The EUT was connected to an artificial mains network(AMN) placed on the floor and placed on non-metallic table 80Cm above the metallic, grounded floor. the AMN was 80Cm from the EUT and at least 80Cm from other Units and other metal planes. The measurements were performed with a quasi-peak detector and an average detector.

Operation condition: up & down loading mode

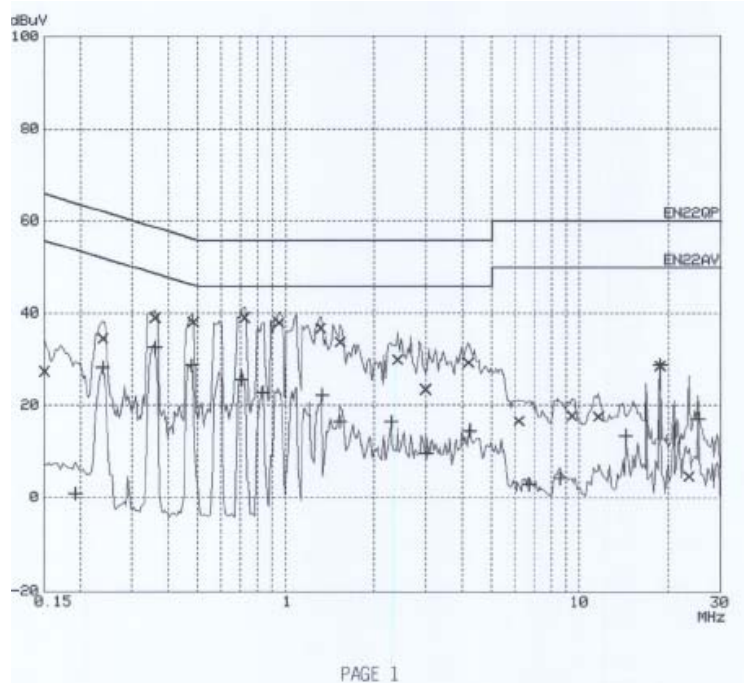
5.1.3 Test instrument

Instrument	Model No	Makers	Serial No.	Next cal.date	Used
Test receiver	ESCS30	R&S	100021	2006. 4. 06	x
L.I.S.N.	ESH3-Z5	R&S	827246/008	2006. 2. 21.	x
	ESH3-Z5	R&S	831887/018	2006. 3.22.	x
Shield room	8.0 m L × 6.0 m W × 3.3 m H	-	-	-	x

5.1.4 Test results

Date of test: Oct 29, 2005

The overview measurements performed with a peak detector & an average detector are included in the report.



Final Measurement Results:

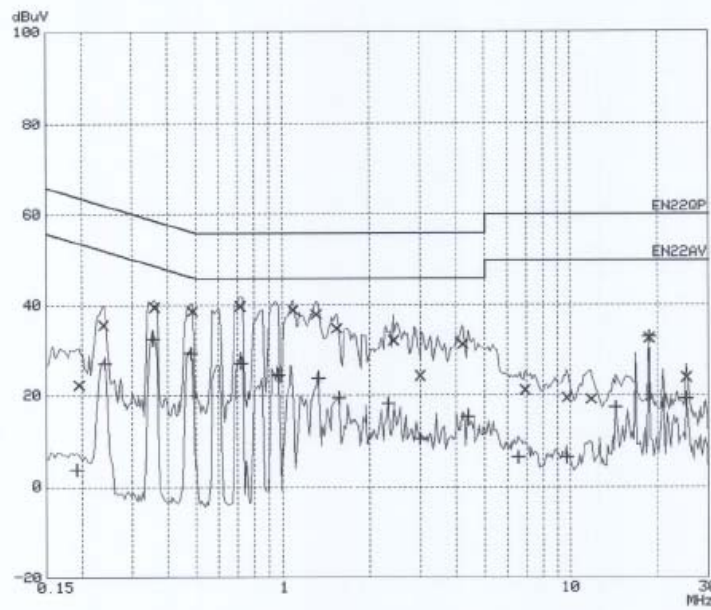
Indicated Phase/PE shows Configuration of max. Emission

Frequency MHz	QP Level dBuV	Delta Limit dB	Phase	PE
0.15000	27.5	-38.4	N	gnd
0.23700	34.6	-27.6	N	gnd
0.35700	39.2	-19.6	L1	gnd
0.48300	38.2	-18.1	L1	gnd
0.72000	39.1	-16.8	N	gnd
0.94200	37.9	-18.0	N	gnd
1.31400	36.8	-19.1	N	gnd
1.52400	33.9	-22.0	L1	gnd
2.39400	30.0	-25.9	L1	gnd
2.97600	23.6	-32.3	N	gnd
4.17000	29.3	-26.6	L1	gnd
6.20000	16.8	-43.1	N	gnd
9.41000	17.8	-42.1	L1	gnd
11.57000	17.7	-42.2	N	gnd
18.66000	28.7	-31.2	N	gnd
23.38000	4.8	-55.1	N	gnd

Frequency MHz	AV Level dBuV	Delta Limit dB	Phase	PE
0.19200	1.0	-53.0	L1	gnd
0.23700	28.3	-23.9	N	gnd
0.35700	32.6	-16.2	L1	gnd
0.47700	28.9	-17.5	N	gnd
0.70500	25.7	-20.2	N	gnd
0.83700	22.8	-23.1	N	gnd
1.32300	22.4	-23.5	L1	gnd
1.52400	16.6	-29.3	N	gnd
2.28900	16.6	-29.4	N	gnd
2.99400	9.7	-36.2	L1	gnd
4.22000	14.5	-31.4	N	gnd
6.73000	2.9	-47.0	L1	gnd
8.55000	4.3	-45.6	N	gnd
14.32000	13.5	-36.4	L1	gnd
18.66000	28.9	-21.1	N	gnd
25.14000	17.3	-32.7	N	gnd

* limit exceeded

< Hot line >



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Final Measurement Results:

Indicated Phase/PE shows Configuration of max. Emission

Frequency MHz	QP Level dBuV	Delta Limit dB	Phase -	PE -
0.19500	22.3	-41.5	N	gnd
0.23700	35.6	-26.5	N	gnd
0.35700	39.6	-19.2	N	gnd
0.48600	38.6	-17.6	L1	gnd
0.71400	39.8	-16.1	L1	gnd
1.09200	38.9	-17.0	N	gnd
1.31400	38.0	-17.9	N	gnd
1.54200	34.7	-21.2	L1	gnd
2.40600	32.2	-23.7	N	gnd
2.98800	24.3	-31.6	N	gnd
4.20000	31.4	-24.6	L1	gnd
6.92000	21.2	-38.8	L1	gnd
9.68000	19.5	-40.4	N	gnd
11.80000	19.2	-40.7	L1	gnd
18.66000	32.6	-27.3	L1	gnd
25.15000	24.0	-35.9	N	gnd

Frequency MHz	AV Level dBuV	Delta Limit dB	Phase -	PE -
0.19200	3.7	-50.3	N	gnd
0.24000	27.2	-24.9	N	gnd
0.35400	32.5	-16.4	N	gnd
0.48000	29.4	-16.9	L1	gnd
0.71700	27.1	-18.8	L1	gnd
0.96900	24.6	-21.3	N	gnd
1.33200	23.8	-22.1	N	gnd
1.57200	19.6	-26.3	N	gnd
2.30400	18.2	-27.7	L1	gnd
2.98800	10.3	-35.6	N	gnd
4.38000	15.4	-30.6	L1	gnd
6.57000	6.3	-43.6	L1	gnd
9.68000	6.3	-43.6	L1	gnd
14.32000	17.4	-32.5	N	gnd
18.66000	33.0	-16.9	N	gnd
25.15000	19.4	-30.5	N	gnd

* limit exceeded

<Neutral line>

Result: Pass

The measured emission levels of the EUT have found the below of the specified limit.

5.2 RADIATED DISTURBANCE : Frequency range 30 MHz to 1000 MHz

5.2.1 Operating environment

Temperature	: 20.0 ± 0.7 °C
Relative Humidity	: 57.0 ± 4.5 %
Atmospheric pressure	: 993 ± 0.25 mbar

5.2.2 Test set-up

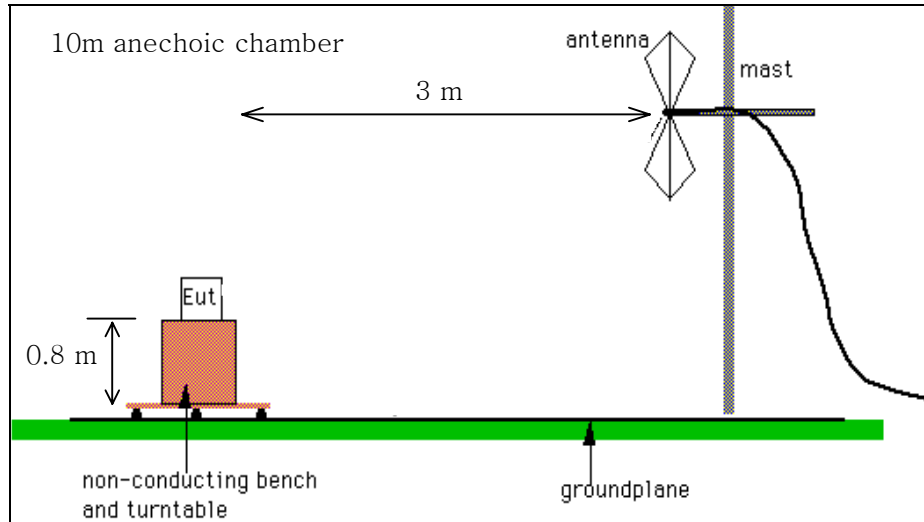
The frequency range investigated was 30 MHz to 1000 MHz.

All data results were a quasi-peak unless stated otherwise; a Biconical & a Log-periodic antenna were tuned to the frequency during Preliminary radiated measurements. The EUT, support equipment and interconnected cables were re-configured to produce the Maximum emission for the frequency and were placed on top of a 0.8 meter A High non-metallic 1 X 1.5 meter table. the EUT, the support equipment, and interconnecting cables were re-arranged and manipulated to maximize each a EME emission.

The turntable containing the system was rotated and the antenna height was varied 1 to 4 meters and stopped at the azimuth and the height producing the maximum emission. And this device (EUT) was tested in 3 orthogonal planes. The antenna measured both horizontal and vertical polarization.



Radiated Disturbance



<General test set-up for radiated emissions>

5.2.3 Test Conditions

Up & down loading mode

5.2.4 Test instrument

Instrument	Model No.	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	2006. 4. 6	x
Biconical Antenna	VHA9103	91031950	Schwarzbeck	2006. 2. 4	x
Log-Periodic Antenna	UHALP9108A	0392	Schwarzbeck	2006. 2. 4	x
Antenna Mast	MA240	N/A	HD	-	x
Turn Table	DT430S	N/A	HD	-	x
ERI lab	-	-	-	-	x

5.2.5 Test results

Date of test: Oct 30, 2005

Tested Frequency [MHz]	ANT Pol.	Meter Reading [dBuV]	Antenna Factor [dB/m]	Cable Loss [dB]	Results [dBuV/m]	Limits [dBuV/m]
32.70	V	17.36	18.06	0.79	18.06	40.00
190.65	V	13.23	16.06	1.71	16.06	43.50
252.08	V	12.95	17.56	2.02	17.56	46.00
392.75	V	18.23	15.81	2.35	15.81	46.00
433.00	V	14.31	16.47	2.51	16.47	46.00
441.75	H	16.09	16.55	2.55	16.55	46.00
480.25	H	13.98	17.12	2.71	17.12	46.00

- Receiving Antenna Polarization : **Horizontal, Vertical**
- Test site : **10m anechoic chamber**

Note : ANT Polarization H : Horizontal V : Vertical

Result: Pass

The measured emissions level of the EUT have found the below of the specified limit.

6. PRODUCT PHOTOGRAPHS

6.1 Front Photograph of EUT



6.2 Rear Photograph of EUT



6.3 Inner Photograph of EUT

