

Test Report

For

Applicant : Premier Image Technology Corporation

Equipment Type : Digital Still Camera

Model : DC 2000

FCC ID : NHN002KZ125

Report No. : 00BH015FI

Test Report Certification

QuieTek Corporation

No.75-1, Wang-Yeh Valley, Yung-Hsing, Chiung-Lin,
Hsin-Chu County, Taiwan, R.O.C.

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Accredited by NIST(NVLAP), VCCI, BSMI, DNV, TUV

Applicant : Premier Image Technology Corporation
Address : 6F, NO.10, LI-SHIN RD, SCIENCE-BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R.O.C.
Equipment Type : Digital Still Camera
Model : DC 2000
Measurement Standard : CISPR 22/1985
Measurement Procedure : ANSI C63.4 /1992
FCC ID : NHN002KZ125
Operation Voltage : 120VAC/60Hz
Classification : Class B
Test Result : Complied
Test Date : Nov.02, 2000
Report No. : 00BH015FI



The Test Results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Documented by: Lisa Chen

A handwritten signature in blue ink, appearing to read "Lisa Chen".

Test Engineer: Jison Chang

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Approved: Kevin Wang

A handwritten signature in blue ink, appearing to read "Kevin Wang".

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ATTACHMENT 1: SUMMARY OF TEST RESULTS

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REFERENCE

LABORATORY OF LICENSE



1. General Information

1.1 EUT Description

Applicant : Premier Image Technology Corporation

Address : 6F, NO.10, LI-SHIN RD, SCIENCE-BASED INDUSTRIAL PARK, HSINCHU, TAIWAN, R.O.C.

Equipment Type : Digital Still Camera

Model : DC 2000

FCC ID : NHN002KZ125

Max. Resolution : CIF 1792×1200

USB Cable : Shielded, 1.8m, a ferrite core bonded

RS232 Cable : Shielded, 1.8m, a ferrite core bonded

AV Cable : Shielded, 1.8m, a ferrite core bonded

Power Adapter : Potrans, UWP00511070
Shielded, 1.8m, two ferrite cores bonded

Remark : 1. The EUT is a Digital Still Camera. With 2.3M Pixel CCD.
2. QuieTek had verified the construction and function in typical operation, then shown in this test report .

1.2 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

1.2.1 Host Personal Computer

Model Number	: P2L97
Serial Number	: 92M1Y00768
FCC ID	: DoC
Manufacturer	: ASUS
Power Cord	: Non-Shielded, 1.8m

1.2.2 Digital Still Camera (EUT)

Model Number	: DC 2000
Serial Number	: N/A
FCC ID	: NHN002KZ125
Manufacturer	: Premier Image Technology Corporation
Max. Resolution	: CIF 1792×1200
USB Cable	: Shielded, 1.8m, a ferrite core bonded
RS232 Cable	: Shielded, 1.8m, a ferrite core bonded
AV Cable	: Shielded, 1.8m, a ferrite core bonded
Power Adapter	: Potrans, UWP00511070 Shielded, two ferrite cores bonded

1.2.3 Monitor

Model Number	: CM752ET-311
Serial Number	: T8D003312
FCC ID	: DoC
Manufacturer	: HITACHI
Data Cable	: Shielded, 1.6m
Power Cord	: Shielded, 1.8m

1.2.4 Keyboard

Model Number	: 6311-TW4C
Serial Number	: 916590704C91F24432
FCC ID	: DoC
Manufacturer	: ACER
Data Cable	: Shielded, 1.8m



1.2.5 Modem

Model Number	: 1414
Serial Number	: 980033035
FCC ID	: IFAXDM1414
Manufacturer	: ACEEX
Data Cable	: Shielded, 1.5m
Power Adapter	: ACCEX, SCP41-91000A Cable Output : Shielded, 1.5m

1.2.6 Modem

Model Number	: 1414
Serial Number	: 980033033
FCC ID	: IFAXDM1414
Manufacturer	: ACEEX
Data Cable	: Shielded, 1.5m
Power Adapter	: ACCEX, SCP41-91000A Cable Output : Shielded, 1.5m

1.2.7 Printer

Model Number	: C2642A
Serial Number	: MY75L1D2XN
FCC ID	: B94C2642X
Manufacturer	: HP
Data Cable	: Shielded, 1.2m
Power Adapter	: NMB, C2175A Cable for AC IN: Non-Shielded, 0.7m Cable for AC Out: Non-Shielded, 1.5m

1.2.8 Mouse

Model Number	: M-S34
Serial Number	: LZA81451691
FCC ID	: DZL211029
Manufacturer	: ACER
Data Cable	: Shielded, 1.8m

1.2.9 USB Mouse

Model Number	: M-S34
Serial Number	: LZA81451691
FCC ID	: DZL211029
Manufacturer	: ACER
Data Cable	: Shielded, 1.8m

1.2.10 USB Mouse

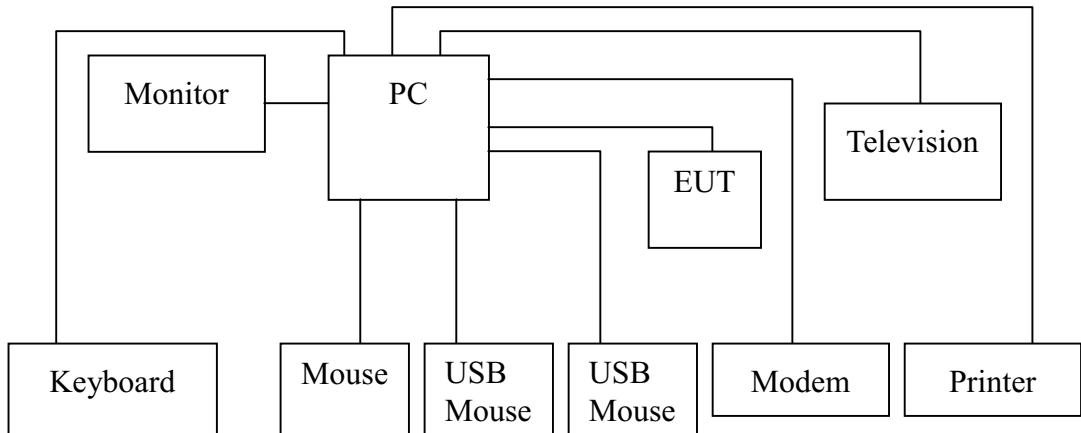
Model Number	: PNX03-51335
Serial Number	: 6689094
FCC ID	: C3KKMP5
Manufacturer	: Microsoft
Data Cable	: Shielded, 1.8m

1.2.11 Television

Model Number	: KV-14NX
Serial Number	: 103125
BSMI ID	: 3863A019
Manufacturer	: SONY
Power Cord	: Non-Shielded, 1.8m

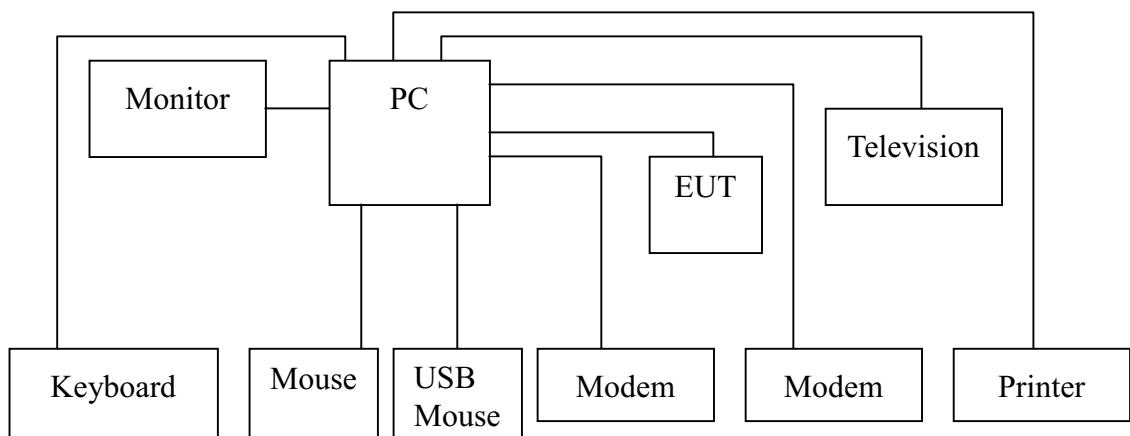
1.3 EUT Configuration

Mode 1:



On desk

Mode 2:



On desk

1.4 EUT Exercise Software

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to a typical use. The exercise sequence is listed as below:

- 1.4.1 Setup the EUT and simulators as shown on 1.3
- 1.4.2 Turn on the power of all equipment.
- 1.4.3 Boot the PC from Hard Disk .
- 1.4.4 PC reads test software from disk.
- 1.4.5 The Digital Still Camera(EUT) will start to operate and capture the video figure into PC.
- 1.4.6 PC will display “video figure” on monitor.
- 1.4.7 Printer and modem will keep at standby mode during EUT operation.
- 1.4.8 Repeat the above procedure 1.4.4 to 1.4.7

1.5 Test performed

Conducted emissions were invested over the frequency range from **0.15MHz to 30MHz** using a receiver bandwidth of 9kHz.

Radiated emissions were invested over the frequency range from **30MHz to 1000MHz** using a receiver bandwidth of 120kHz. Radiated testing was performed at an antenna to EUT distance of 10 meters.

1.6 Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: November 3, 1998 File on

Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Reference 31040/SIT1300F2



September 30, 1998 Accreditation on NVLAP

NVLAP Lab Code: 200347-0



February 23, 1999 Accreditation on DNV
Statement No. : 413-99-LAB11



December 8, 1998 Registration on VCCI

Registration No. for No.2 Shielded Room C-858
Registration No. for No.1 Open Area Test Site R-823
Registration No. for No.2 Open Area Test Site R-835



January 04, 1999 Accreditation on TUV Rheinland
Certificate No.: I9865712-9901



Name of firm : QuieTek Corporation

Site location : No.75-1, Wang-Yeh Valley, Yung-Hsing Tsuen,
Chiung-Lin, Hsin-Chu County, Taiwan, R.O.C.

2. Conducted Emission

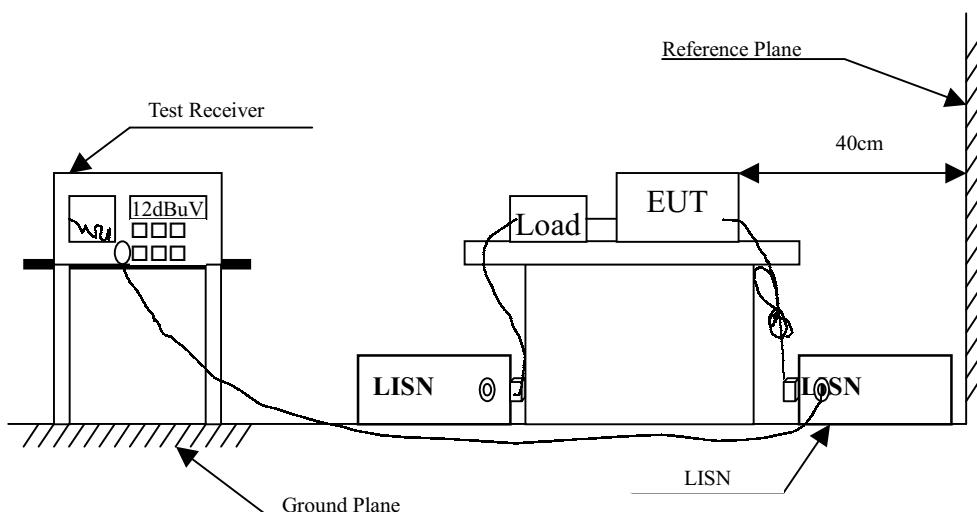
2.1 Test Equipment List

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2000	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2000	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2000	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	N/A	
5	N0.2 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2 Test Setup



2.3 Limits

CISPR 22 Limits (dBuV)					FCC Part 15 Subpart B (dBuV)				
Frequency MHz	Class A		Class B		Frequency MHz	Class A		Class B	
	QP	AV	QP	AV		uV	dBuV	uV	dBuV
0.15 - 0.50	79	66	66-56	56-46	0.45-1.705	1000	60.0	250	48.0
0.50-5.0	73	60	56	46	1.705-30	3000	69.5	250	48.0
5.0 - 30	73	60	60	50					

Remarks : In the above table, the tighter limit applies at the band edges.

2.4 Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4 /1992 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

2.5 Test Results

The conducted emission from the EUT is measured and shown in Attachment 1 of test report. The acceptance criterion was met and the EUT passed the test.



3. Radiated Emission

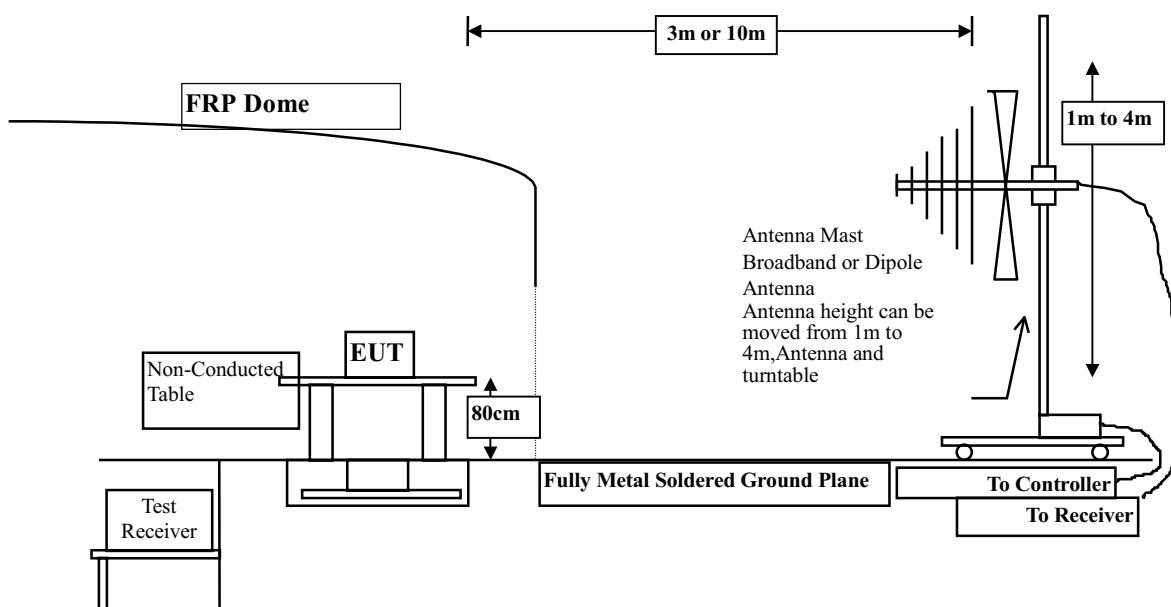
3.1 Test Equipment

The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 1	X	Test Receiver	R & S	ESCS 30 / 825442/14	May, 2000
		Spectrum Analyzer	Advantest	R3261C / 71720140	May, 2000
		Pre-Amplifier	HP	8447D/3307A01812	May, 2000
	X	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 2000
	X	Horn Antenna	EM	EM6917 / 103325	May, 2000
	X	Test Receiver	R & S	ESCS 30 / 825442/17	May, 2000
Site # 2		Spectrum Analyzer	Advantest	R3261C / 71720609	May, 2000
		Pre-Amplifier	HP	8447D/3307A01814	May, 2000
	X	Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2000
	X	Horn Antenna	EM	EM6917 / 103325	May, 2000

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
2. Mark “X” test instruments are used to measure the final test results.

3.2 Test Setup



3.3 Limits

CISPR 22 Limits					FCC Part 15 Subpart B				
Frequency MHz	Class A		Class B		Frequency	Class A		Class B	
	Distance (m)	dBuV/m	Distance (m)	dBuV/m		Uv/m	DBuV/m	UV/m	DbuV/m
30 – 230	10	40	10	30	30 – 88	90	39	100	40.0
230 – 1000	10	47	10	37	88 – 216	150	43.5	150	43.5
					216 – 960	210	46.5	200	46.0
					960 - 2000	300	49.5	500	54.0

Remark: 1. The tighter limit shall apply at the edge between two frequency bands.

2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
3. RF Line Voltage (dBuV/m) = $20 \log_{10}$ RF Line Voltage (uV/m)

3.4 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 10 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4 /1992 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30) is 120 kHz.

3.5 Test Results

The radiated emission from the EUT is measured and shown in attachment 1 of test report.

The acceptance criterion was met and the EUT passed the test.



4. EMI Reduction Method During Compliance Testing

No modification was made during testing.



5. Attachment

Attachment 1: Summary of Test Results	Number of Pages: 9
Attachment 2: EUT Test Photographs	Number of Pages: 4
Attachment 3: EUT Detailed Photographs	Number of Pages: 17



Attachment 1 : Summary of Test Results

The test results in the emission and immunity were performed according to the requirements of measurement standard and process. QuieTek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. The test data of the emission and immunity are listed as the attached data.

All the tests were carried out with the EUT in normal operation, which was defined as:

Mode 1: RS232 Cable

Mode 2: USB Cable

The EUT passed all the tests.

The uncertainty is calculated in accordance with NAMAS NIS 81, The total uncertainty for this test is as follows:

➤ Emission Test

- Uncertainty in the Conducted Emission Test: $< \pm 2.0$ dB
- Uncertainty in the field strength measured: $< \pm 4.0$ dB

CONDUCTED EMISSION DATA

Date of Test	:	Nov.02, 2000	EUT	:	Digital Still Camera
Test Mode	:	Mode 1	Detect Mode	:	Quasi-Peak & Average

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level	Measurement Level	Limits
			Line1 dBuV	Line1 dBuV	dBuV
0.213	0.02	0.10	32.45	32.57	63.09
0.319	0.04	0.10	26.97	27.11	59.72
0.424	0.05	0.10	24.95	25.10	57.37
0.531	0.07	0.10	27.41	27.58	56.00
0.745	0.08	0.10	28.39	28.57	56.00
*2.231	0.15	0.13	40.01	40.30	56.00

Average:

0.213	0.02	0.10	24.70	24.82	53.09
0.319	0.04	0.10	22.60	22.74	49.73
0.424	0.05	0.10	21.70	21.85	47.37
0.531	0.07	0.10	23.90	24.07	46.00
0.745	0.08	0.10	25.30	25.48	46.00
2.231	0.15	0.13	32.20	32.49	46.00

Remarks :

1. “ * ” means that this data is the worst emission level.



CONDUCTED EMISSION DATA

Date of Test	:	Nov.02, 2000	EUT	:	Digital Still Camera
Test Mode	:	Mode 1	Detect Mode	:	Quasi-Peak & Average

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level	Measurement Level	Limits
			Line2 dBuV	Line2 dBuV	dBuV
*0.213	0.02	0.10	48.93	49.05	63.09
0.318	0.04	0.10	37.01	37.15	59.75
0.639	0.08	0.10	32.69	32.87	56.00
1.816	0.14	0.13	30.93	31.19	56.00
2.242	0.15	0.13	37.37	37.66	56.00
13.779	0.31	0.32	27.55	28.18	60.00

Average:

0.213	0.02	0.10	39.90	40.02	53.09
0.318	0.04	0.10	30.50	30.64	49.76
0.639	0.08	0.10	30.60	30.78	46.00
1.816	0.14	0.13	25.60	25.86	46.00
2.242	0.15	0.13	30.20	30.49	46.00
13.779	0.31	0.32	19.30	19.93	50.00

Remarks :

1. “ * ” means that this data is the worst emission level.



CONDUCTED EMISSION DATA

Date of Test	:	Nov.02, 2000	EUT	:	Digital Still Camera
Test Mode	:	Mode 2	Detect Mode	:	Quasi-Peak & Average

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level	Measurement Level	Limits
			Line1 dBuV	Line1 dBuV	dBuV
*0.213	0.02	0.10	49.48	49.60	63.11
0.318	0.04	0.10	34.62	34.76	59.76
0.744	0.08	0.10	34.84	35.02	56.00
2.017	0.14	0.13	40.51	40.78	56.00
2.338	0.15	0.14	40.58	40.87	56.00
16.625	0.33	0.39	30.11	30.83	60.00

Average:

0.213	0.02	0.10	41.00	41.12	53.09
0.318	0.04	0.10	30.80	30.94	49.76
0.744	0.08	0.10	32.00	32.18	46.00
2.017	0.14	0.13	33.30	33.57	46.00
2.338	0.15	0.14	30.50	30.79	46.00
16.625	0.33	0.39	27.60	28.32	50.00

Remarks :

1. “ * ” means that this data is the worst emission level.



CONDUCTED EMISSION DATA

Date of Test	:	Nov.02, 2000	EUT	:	Digital Still Camera
Test Mode	:	Mode 2	Detect Mode	:	Quasi-Peak & Average

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level	Measurement Level	Limits
			Line2 dBuV	Line2 dBuV	dBuV
*0.213	0.02	0.10	43.87	43.99	63.11
0.314	0.04	0.10	24.39	24.53	59.86
0.740	0.08	0.10	31.92	32.10	56.00
1.374	0.12	0.11	22.10	22.33	56.00
2.009	0.14	0.13	40.37	40.64	56.00
2.326	0.15	0.14	39.85	40.14	56.00

Average:

0.213	0.02	0.10	37.90	38.02	53.09
0.314	0.04	0.10	21.60	21.74	49.86
0.740	0.08	0.10	29.70	29.88	46.00
1.374	0.12	0.11	19.90	20.13	46.00
2.009	0.14	0.13	33.90	34.17	46.00
2.326	0.15	0.14	31.70	31.99	46.00

Remarks :

1. “ * ” means that this data is the worst emission level.



RADIATED EMISSION DATA

Date of Test	:	Nov.02, 2000	EUT	:	Digital Still Camera
Test Mode	:	Mode 1	Test Site	:	No.2 Open Test Site

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP Reading dB	Measurement		Margin dB	Limit dBuV/m	Ant cm	Turn deg
				Level dBuV	Horizontal dBuV/m				
58.000	1.42	5.52	0.00	7.56	14.50	15.50	30.00	401	58
85.640	1.68	8.88	0.00	1.56	12.13	17.87	30.00	401	154
171.775	2.51	9.43	0.00	6.30	18.24	11.76	30.00	401	66
229.050	3.06	10.22	0.00	5.65	18.94	11.06	30.00	401	140
343.575	3.98	13.87	0.00	2.71	20.56	16.44	37.00	401	39
*501.200	4.80	17.36	0.00	9.65	31.81	5.19	37.00	148	52

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
- 2.“ * ”, means this data is the worst emission level.
- 3.Emission Level = Reading Level + Antenna Factor + Cable loss

RADIATED EMISSION DATA

Date of Test	:	Nov.02, 2000	EUT	:	Digital Still Camera
Test Mode	:	Mode 1	Test Site	:	No.2 Open Test Site

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP Reading dB	Measurement Level dBuV	Margin Vertical dBuV/m	Limit dB	Ant dBuV/m	Turn cm	Turn deg
58.000	1.42	6.40	0.00	11.29	19.11	10.89	30.00	99	121
85.000	1.68	8.36	0.00	3.79	13.83	16.17	30.00	99	81
*229.050	3.06	10.13	0.00	7.56	20.76	9.24	30.00	99	139
244.125	3.21	11.90	0.00	5.08	20.19	16.81	37.00	99	202
250.550	3.27	12.26	0.00	2.32	17.85	19.15	37.00	99	161
286.313	3.62	12.95	0.00	10.90	27.47	9.53	37.00	99	123
400.840	4.28	16.05	0.00	1.17	21.50	15.50	37.00	99	77
458.100	4.57	17.02	0.00	1.16	22.75	14.25	37.00	349	91
501.200	4.80	17.26	0.00	4.23	26.29	10.71	37.00	401	100

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss



RADIATED EMISSION DATA

Date of Test	:	Nov.02, 2000	EUT	:	Digital Still Camera
Test Mode	:	Mode 2	Test Site	:	No.2 Open Test Site

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP Reading dB	Measurement Level dBuV	Margin Horizontal dBuV/m	Limit dB	Ant dBuV/m	Turn cm	Turn deg
<hr/>									
71.325	1.55	6.94	0.00	8.18	16.68	13.32	30.00	401	141
171.775	2.51	9.43	0.00	7.50	19.44	10.56	30.00	401	78
229.050	3.06	10.22	0.00	9.22	22.51	7.49	30.00	401	156
250.550	3.27	12.61	0.00	1.43	17.31	19.69	37.00	401	87
343.575	3.98	13.87	0.00	1.24	19.09	17.91	37.00	401	127
400.850	4.28	15.85	0.00	3.42	23.55	13.45	37.00	354	61
*501.200	4.80	17.36	0.00	9.44	31.60	5.40	37.00	203	51

Remarks :

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worst emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss

RADIATED EMISSION DATA

Date of Test	:	Nov.02, 2000	EUT	:	Digital Still Camera
Test Mode	:	Mode 2	Test Site	:	No.2 Open Test Site

Freq. MHz	Cable Loss dB	Probe Factor dB/m	PreAMP Reading dB	Measurement Level dBuV	Margin Vertical dBuV/m	Limit dB	Ant dBuV/m	Turn cm	Turn deg
<hr/>									
*171.788	2.51	9.26	0.00	10.37	22.15	7.85	30.00	99	49
229.050	3.06	10.13	0.00	7.82	21.02	8.98	30.00	99	13
250.550	3.27	12.26	0.00	3.01	18.54	18.46	37.00	99	80
286.320	3.62	12.95	0.00	7.62	24.19	12.81	37.00	99	124
343.575	3.98	14.72	0.00	4.68	23.38	13.62	37.00	99	8
400.975	4.28	16.05	0.00	-0.83	19.50	17.50	37.00	392	13
501.200	4.80	17.26	0.00	6.32	28.38	8.62	37.00	376	93

Remarks :

1. All Readings below 1GHz are Quasi-Peak, above are average value.
- 2.“ * ”, means this data is the worst emission level.
- 3.Emission Level = Reading Level + Antenna Factor + Cable loss