PRETEC

Digital Image Life

PRETEC CORPORATION

FCC ID.: NJB98801118

EXHIBIT 3

Test Report With Eut Photograph

FCC Test Report
Application for Certification
On Behalf Of
Pretec Corporation
Digital Camera
Model : DC-800

FCC ID : NJB98801118

Prepared For:

Pretec Corporation
6F, No.10, Li-Shin Rd., Science-Based
Industrial Park, Hisn-Chu , Taiwan, R.O.C.

Report By : **QuieTek Corporation**
No.75-1, Wang-Yeh Valley, Yung-Hsing
Tsuen, Chiung-Lin, Hsin-Chu County,
Taiwan, R.O.C.
Tel : (03) 592-8858
Fax : (03) 592-8859

TABLE OF CONTENTS

QTK94-F003

1. Test Report Certification

Applicant : Pretec Corporation

Manufacturer : Pretec Corporation

EUT Description

Model Name : Digital Camera

Model No. : DC-800

Serial Number : N/A

FCC ID. : NJB98801118

Power : 120V/60Hz AC

MEASUREMENT STANDARD USED :

CISPR 22 Limits and methods of measurement of radio disturbance characteristics of information technology equipment: 1993

MEASUREMENT PROCEDURE USED :

ANSI C63.4 Methods of Measurements of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9kHz to 40GHz. :1992

The device described above was tested by QuieTek Corporation to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the CISPR 22 limits for both radiated and conducted emissions.
The measurement results are contained in this test report and QuieTek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the CISPR 22 limits.

Sample Received Date : January 4, 1999

Test Date : January 12, 1999

Documented by : Kathy Lee

NVLAP®

Test Engineer:

Jack Wu

Approve & Authorized Signer:

Gene Chang

QTK99-F003

2. General Information

2.1 Production Description

Description	:	Digital Camera
Model Number	:	DC-800
Serial Number	:	N/A
FCC ID.	:	NJB98801118
Applicant	:	Pretec Corporation
Address	:	6F, No.10, Li-Shin Rd., Science-Based Industrial Park, Hisn-Chu , Taiwan, R.O.C.
Manufacturer	:	Pretec Corporation
Address	:	6F, No.10, Li-Shin Rd., Science-Based Industrial Park, Hisn-Chu , Taiwan, R.O.C.
Power Adapter	:	1. POTRANS Model Number: UWP00511070 Input: 100~240V, 50/60 Hz, 0.2A Output: DC 7V, 1.0A; Peak 2.5A 20 Sec. Cable out: Non-shielded, Detectable, 1.8m w/ ferrite core 2. KENTEX Model Number: MA-15070 Input: 100~240V, Max 47~63Hz, 1.0A Output: DC 7V, 2.1A Cable out: Non-shielded, Detectable, 1.8m Bonded one ferrite core.
Data Cable	:	1. Video cable connects to TV and bonded a ferrite core 2. The cable for RS232 Port connects to PC and bonded a ferrite core 3. The cable for USB Port connects to PC and bonded a ferrite core

Mode Difference (If Applicable) :

Mode 1 : DC-800 with POTRANS (Adapter)

Mode 2 : DC-800 with KENTEX (Adapter)

Note: The data show in this test report reflects the worst-case data for each operation mode.

2.2 Tested System Details

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

➢ **The types for all peripheral devices**

☒ TV

Model Number	:	KV-14NX 1/C
Manufacturer	:	SONY
Serial Number	:	103125
FCC ID	:	DoC
Power Cable	:	Non-Shielded, Un-Detachable, 1.8m

☒ Host Personal Computer

Model Number	:	PIIL97
Manufacturer	:	ASUS
Serial Number	:	AS10228
FCC ID	:	DoC
Power Cord	:	Non-Shielded, Detachable, 1.8m

☒ Monitor

Model Number	:	CM752ET-311
Serial Number	:	T8F006364
FCC ID	:	DoC
Manufacturer	:	HITACHI
Data Cable	:	Shielded, Un-Detachable 1.5m
Power Cord	:	Shielded, Detachable 1.8m

☒ Keyboard

Model Number	:	6311-TW2C
Serial Number	:	N/A
Manufacturer	:	ACER
Data Cable	:	Shielded, Un-Detachable, 1.8m
FCC ID	:	DoC

☒ Mouse

Model Number	:	M-S34
Serial Number	:	LZB75078463
FCC ID	:	DZL211029
Manufacturer	:	HP
Data Cable	:	Shielded, Un-Detachable, 1.8m

☒ Modem

Model Number	:	1414
Serial Number	:	980033032
FCC ID	:	IFAXDM1414
Manufacturer	:	ACEEX
Data Cable	:	Shielded, Detachable, 1.5m
Power Adapter	:	ACCEX, M/N: SCP41-91000A
		Cable Output : Shielded, Un-Detachable, 1.5m

☒ Printer

Model Number	:	C2642A
Serial Number	:	MY75N1D2XN
FCC ID	:	B94C2642X
Manufacturer	:	HP
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	NMB, M/N: C2175A
		Cable for AC IN: Non-Shielded, Un-Detachable, 0.7m
		Cable for AC Out: Non-Shielded, Un-Detachable, 1.5m

☒ Joystick (USB)

Model Number	:	JPD110
Serial Number	:	9814A15646
Manufacturer	:	Maxxtro
FCC ID	:	DoC
Data Cable	:	Shielded, Un-Detachable, 1.7m

2.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-1992.

Radiated testing was performed at an antenna to EUT distance of 10 meters.

2.4 Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	24-27
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

December 8, 1998 Registration on VCCI
Registration No. for Conducted Emission C-858

Registration No. for Radiated Emission R-823

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.

3. Conducted Power Line Test

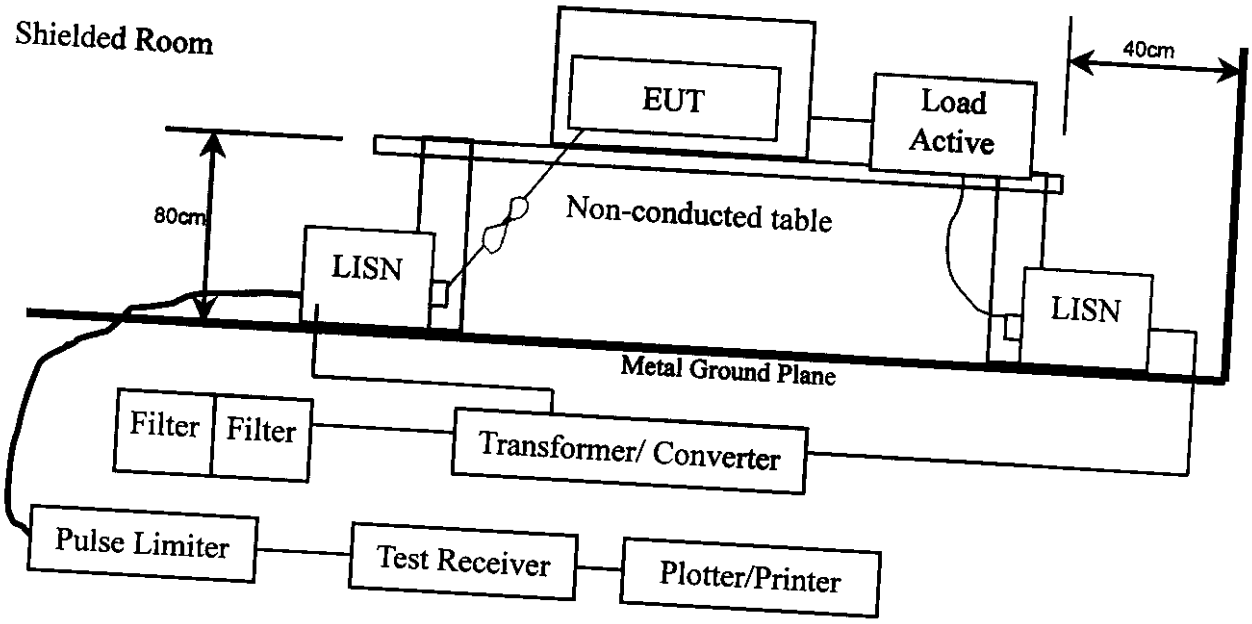
3.1 Test Equipments

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

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal..	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 1998	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 1998	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 1998	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.

3.2 Block Diagram of Test Setup



3.3 Conducted Powerline Emission Limit

➢ **CISPR 22 Limits**

Frequency	Maximum RF Line Voltage dB(uV)			
	Class A		Class B	
MHz	QUASI-PEAK	AVERAGE	QUASI-PEAK	AVERAGE
0.15 - 0.50	79	66	66-56	56-46
0.50-5.0	73	60	56	46
5.0 - 30	73	60	60	50

Remarks : In the Above Table, the tighter limit applies at the band edges.

3.4 EUT Configuration on Measurement

The equipments which is listed 3.2 are installed on Conducted Power Line Test to meet the Commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5 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:

3.5.1 Setup the EUT and simulators as shown on 3.2

3.5.2 Turn on the power of all equipment.

3.5.3 Boot the PC from Hard Disk .

3.5.4 PC reads test software from disk.

3.5.5 The Digital Camera (EUT) will start to operate and capture the video figure into PC.

3.5.6 PC will display "video figure" on monitor.

3.5.7 Printer and modem will keep at standby mode during Scanner operation.

3.5.8 Repeat the above procedure 3.5.4 to 3.5.7

3.6 Test Procedure

The EUT is 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 refer 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 equipments 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 10Khz.

The frequency range from **0.15 MHz to 30 MHz** is checked.

3.7 Conducted Emission Data

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range for all the test modes. Then the worst modes were reported the following data pages.

The uncertainty is calculated in accordance with NAMAS NIS 81. The total uncertainty for this test is as follows:
• Uncertainty in the field strength measured: $< \pm 2.0$ dB

CONDUCTED EMISSION DATA

Date of Test	:	January 12, 1999	Temperature	:	23.5 ℃
EUT	:	Digital Camera	Humidity	:	52 %
Test Mode	:	Mode 1	Detector Mode	:	Quasi-Peak & Average

Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level Linel dBuV	Measurement Level Linel dBuV	Limits dBuV
0.173	0.01	0.10	42.15	42.26	64.81
0.201	0.02	0.10	39.73	39.85	63.58
2.466	0.16	0.14	43.31	43.61	56.00
* 3.580	0.18	0.16	46.10	46.43	56.00
20.966	0.36	0.47	50.97	51.80	60.00
28.123	0.39	0.58	45.11	46.08	60.00
Average:					
0.173	0.01	0.10	30.10	30.21	54.82
0.200	0.02	0.10	33.10	33.22	53.61
2.466	0.16	0.14	37.40	37.70	46.00
3.579	0.18	0.16	44.80	45.13	46.00
20.966	0.36	0.47	46.90	47.73	50.00
28.122	0.39	0.58	43.00	43.97	50.00

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak and average values.

CONDUCTED EMISSION DATA

Date of Test	:	January 12, 1999	Temperature	:	23.5 ℃
EUT	:	Digital Camera	Humidity	:	52 %
Test Mode	:	Mode 1	Detector Mode	:	Quasi-Peak & Average

	Frequency	Cable Loss	LISN Factor	Reading Level Line2	Measurement Level Line2	Limits
	MHz	dB	dB	dBuV	dBuV	dBuV
	0.205	0.02	0.10	46.66	46.78	63.42
	1.435	0.12	0.12	41.12	41.36	56.00
	1.537	0.13	0.12	40.35	40.60	56.00
*	3.580	0.18	0.16	47.02	47.35	56.00
	20.966	0.36	0.47	44.53	45.36	60.00
	28.123	0.39	0.58	43.40	44.37	60.00
Average:						
	0.204	0.02	0.10	34.10	34.22	53.45
	1.435	0.12	0.12	35.00	35.24	46.00
	1.536	0.13	0.12	34.80	35.05	46.00
	3.579	0.18	0.16	44.10	44.43	46.00
	20.966	0.36	0.47	42.50	43.33	50.00
	28.122	0.39	0.58	40.70	41.67	50.00

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak and average values.

CONDUCTED EMISSION DATA

Date of Test	:	January 12, 1999	Temperature	:	23.5 ℃
EUT	:	Digital Camera	Humidity	:	52 %
Test Mode	:	Mode 2	Detector Mode	:	Quasi-Peak & Average

	Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level Line1 dBuV	Measurement Level Line1 dBuV	Limits dBuV
	0.193	0.01	0.10	44.81	44.92	63.91
	0.241	0.03	0.10	40.33	40.46	62.05
	0.969	0.10	0.10	37.35	37.55	56.00
	1.017	0.10	0.10	37.77	37.97	56.00
*	1.695	0.13	0.12	40.17	40.43	56.00
	1.791	0.14	0.13	39.36	39.62	56.00

Average:

0.193	0.01	0.10	38.20	38.31	53.91
0.241	0.03	0.10	37.50	37.63	52.05
0.969	0.10	0.10	36.50	36.70	46.00
1.015	0.10	0.10	36.60	36.80	46.00
1.695	0.13	0.12	38.50	38.76	46.00
1.791	0.14	0.13	34.90	35.16	46.00

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak and average values.

CONDUCTED EMISSION DATA

Date of Test	:	January 12, 1999	Temperature	:	23.5 ℃
EUT	:	Digital Camera	Humidity	:	52 %
Test Mode	:	Mode 2	Detector Mode	:	Quasi-Peak & Average

	Frequency MHz	Cable Loss dB	LISN Factor dB	Reading Level Line2 dBuV	Measurement Level Line2 dBuV	Limits dBuV
	0.242	0.03	0.10	38.50	38.63	62.04
	0.386	0.05	0.10	41.30	41.45	58.14
	0.435	0.06	0.10	39.50	39.66	57.16
	0.966	0.10	0.10	39.54	39.74	56.00
*	1.692	0.13	0.12	40.00	40.26	56.00
	4.874	0.20	0.17	38.90	39.27	56.00
Average:						
	0.242	0.03	0.10	32.10	32.23	62.04
	0.386	0.05	0.10	40.90	41.05	58.14
	0.435	0.06	0.10	37.60	37.76	57.16
	0.966	0.10	0.10	38.50	38.70	56.00
	1.692	0.13	0.12	37.50	37.76	56.00
	4.878	0.20	0.17	34.80	35.17	56.00

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak and average values.

4. Radiation Emission Test

4.1 Test Equipment

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

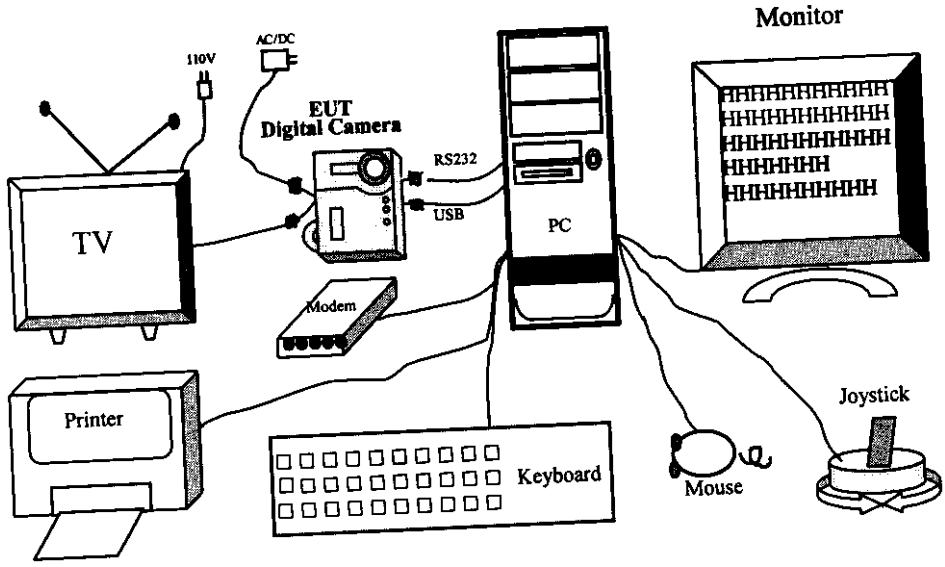
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
SITE # 1	X	Test Receiver	R & S	ESCS 30 / 825442/14	May, 1998
		Spectrum Analyzer	Advantest	R3261C / 71720140	May, 1998
		Pre-Amplifier	HP	8447D/3307A01812	May, 1998
	X	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 1998
	X	Horn Antenna	EM	EM6917 / 103325	May, 1998
SITE # 2	X	Test Receiver	R & S	ESCS 30 / 825442/17	May, 1998
		Spectrum Analyzer	Advantest	R3261C / 71720609	May, 1998
		Pre-Amplifier	HP	8447D/3307A01814	May, 1998
	X	Bilog Antenna	Chase	CBL6112B / 2455	Sep., 1998
	X	Horn Antenna	EM	EM6917 / 103325	May, 1998

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.

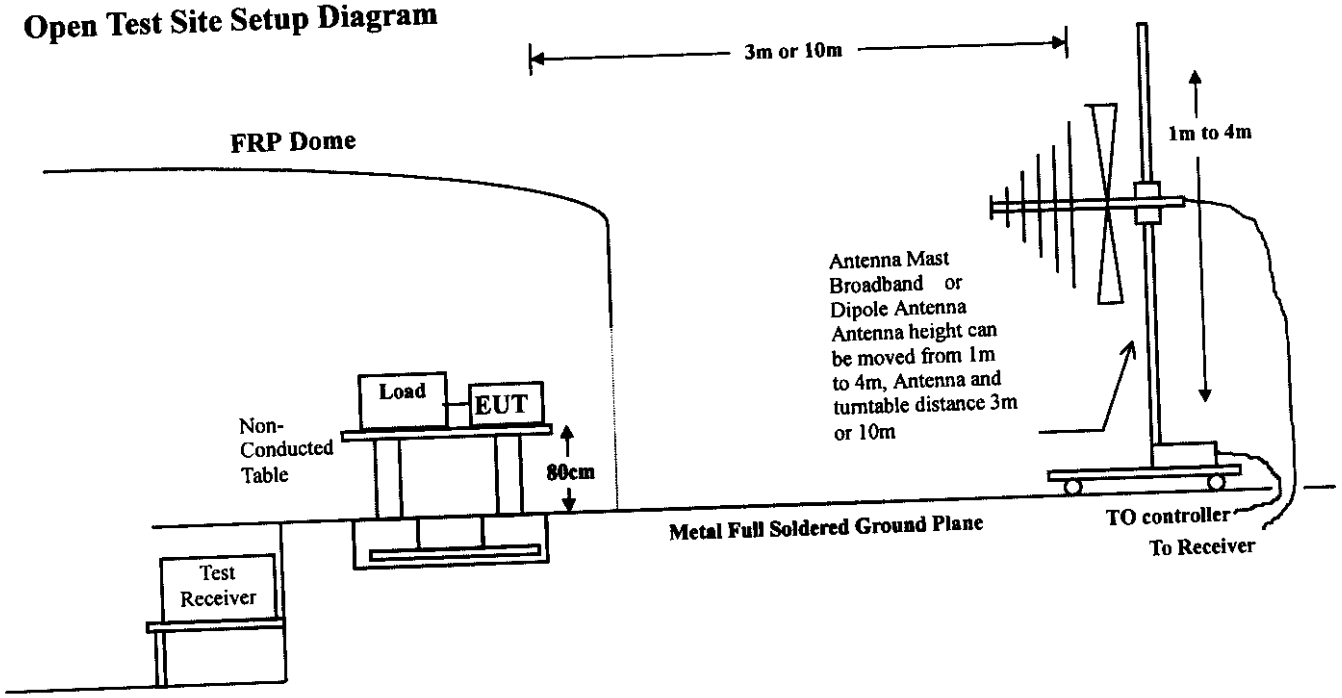
2. Test Site : ☐ Site #1 , ☒ Site #2

4.2 Test Setup

➢ **Block Diagram of Connections between EUT and simulators**



➢ **Open Test Site Setup Diagram**



4.3 Radiated Emission Limit

➢ CISPR 22 Limits:

Frequency	Class A		Class B	
MHz	Distance (m)	Limits (dBuV/m)	Distance (m)	Limits (dBuV/m)
30 – 230	10	40	10	30
230 – 1000	10	47	10	37

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.

4.4 EUT Configuration

The equipments which is listed 4.2.1 are installed on Radiated Emission Test to meet the Commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

4.5 Operating Condition of EUT

Same as Conducted Power Line Test which is listed in 3.5.

4.6 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. EUT is set 10 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Broadband antenna (calibrated bi-log and horn antenna) are used as a eceiving antenna.

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, above 1Ghz are 1 MHz.

The frequency range from **30Mhz to 1000Mhz** is checked.

4.7 Radiated Emission Data

The initial step in collecting radiated data is a spectrum analyzer peak scan of the measurement range for all the test modes. Then the worst modes were reported the following data pages.

The uncertainty is calculated in accordance with Namas NIS 81.The total uncertainty for this test is as follows:
• Uncertainty in the field strength measured: $< \pm 4.0$ dB

RADIATED EMISSION DATA

Date of Test	:	January 12, 1999	Temperature	:	23.5 ℃
EUT	:	Digital Camera	Humidity	:	52 %
Test Mode	:	Mode 1			

Frequency MHz	Cable Loss dB	Ant Factor dB/m	Reading Level Horizontal dBuV/m	Emission Level Horizontal dBuV/m	Limits dBuV/m	Ant Pos cm	Table Pos deg
589.078	5.26	18.63	5.29	29.18	37.00	0	0
613.620	5.39	19.03	5.07	29.49	37.00	0	0
638.165	5.52	19.18	4.78	29.48	37.00	0	0
662.711	5.64	19.12	4.79	29.56	37.00	0	0
785.435	6.28	19.97	4.93	31.19	37.00	0	0
834.524	6.54	20.51	3.00	30.04	37.00	103	43

Remarks:

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

RADIATED EMISSION DATA

Date of Test	:	January 12, 1999	Temperature	:	23.5 ℃
EUT	:	Digital Camera	Humidity	:	52 %
Test Mode	:	Mode 1			

	Frequency MHz	Cable Loss dB	Ant Factor dB/m	Reading Level Vertical dBuV/m	Emission Level Vertical dBuV/m	Limits dBuV/m	Ant Pos cm	Table Pos deg
*	171.813	2.51	9.26	9.40	21.18	30.00	99	201
	589.075	5.26	18.21	3.40	26.86	37.00	129	134
	600.023	5.32	18.54	1.72	25.58	37.00	315	179
	638.167	5.52	18.51	2.63	26.65	37.00	226	201
	662.709	5.64	18.50	3.48	27.62	37.00	226	37
	792.028	6.32	19.09	-0.21	25.20	37.00	226	65

Remarks:

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

RADIATED EMISSION DATA

Date of Test	:	January 12, 1999	Temperature	:	23.5 ℃
EUT	:	Digital Camera	Humidity	:	52 %
Test Mode	:	Mode 2			

	Frequency	Cable Loss	Ant Factor	Reading Level Horizontal	Emission Level Horizontal	Limits	Ant Pos	Table Pos
	MHz	dB	dB/m	dBuV/m	dBuV/m	dBuV/m	cm	deg
	589.078	5.26	18.63	6.58	30.47	37.00	151	134
	613.621	5.39	19.03	4.51	28.93	37.00	138	57
	638.167	5.52	19.18	5.20	29.90	37.00	134	178
	662.711	5.64	19.12	4.87	29.64	37.00	126	184
*	785.435	6.28	19.97	5.55	31.81	37.00	120	179
	834.526	6.54	20.51	3.90	30.94	37.00	107	48

Remarks:

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

RADIATED EMISSION DATA

Date of Test	:	January 12, 1999	Temperature	:	23.5 ℃
EUT	:	Digital Camera	Humidity	:	52 %
Test Mode	:	Mode 2			

	Frequency	Cable Loss	Ant Factor	Reading Level Vertical	Emission Level Vertical	Limits	Ant Pos	Table Pos
	MHz	dB	dB/m	dBuV/m	dBuV/m	dBuV/m	cm	deg
	147.270	2.28	10.68	9.31	22.27	30.00	105	93
	196.359	2.76	8.94	8.04	19.74	30.00	99	28
*	785.434	6.28	19.04	6.54	31.86	37.00	181	65
	797.706	6.34	19.24	2.07	27.65	37.00	198	93
	834.525	6.54	19.54	5.91	31.99	37.00	198	77
	908.161	6.92	19.84	3.79	30.55	37.00	155	51

Remarks:

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

5. Summarization of Test Results

The test results in the conducted and radiated emission 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 summarization of the worst value of conducted and radiated emission test is described as below:

➢ The worse value of Conducted Emission Test

Frequency (MHz)	Line	Measurement Level dB(uV)	Limit Level dB(uV)	Comment
3.580	L1	48.43	56.00	Pass
3.580	L2	47.35	56.00	Pass

➢ The worse value of Radiated Emission Test

Frequency (MHz)	Polarization	Measurement Level dB(uV)	Limit Level dB(uV)	Comment
785.435	H	31.81	37.00	Pass
785.434	V	31.86	37.00	Pass

No.75-1, Wang-Yeh Valley, Yung-Hsing Tsuen,
Chiung-Lin, Hsin-Chu County, Taiwan, R.O.C.
Tel : 03-592-8858, Fax : 03-592-8859

6. EMI Reduction Method During Compliance Testing

No modification was made during testing.

No.75-1, Wang-Yeh Valley, Yung-Hsing Tsuen,
Chiung-Lin, Hsin-Chu County, Taiwan, R.O.C.
Tel : 03-592-8858, Fax : 03-592-8859