EXHIBIT 4

Test Report

Test Report

TTEMC-F98074

APPLICATION FOR CERTIFICATION
On Behalf of
Avision Inc.
Scanner

Model : (1) Express (2) G720A (3) GT-2200

FCC ID : JSFG720A

Prepared for : Avision Inc.
No. 20, Creation Rd., 1,
Science-Based Industrial Park,
Hsinchu, Taiwan, R.O.C.

Prepared By : Taiwan Tokin EMC Eng. Corp.
No. 53-11, Tin-Fu Tsun, Lin-Kou,
Taipei Hsien, Taiwan, R.O.C.

Tel : (02) 2609-9301~2, 2609-2133~5

File Number : ATM-G98285
Report Number : TTEMC-F98074
Date of Test : May 6 , 1998
Date of Report : May 8, 1998

TABLE OF CONTENTS

TOK98-F035

TEST REPORT CERTIFICATION

Applicant	:	Avision Inc.
Manufacturer	:	Avision Inc.
FCC ID	:	JSFG720A
EUT Description	:	Scanner
		(A) MODEL NO. : (1) Express (2) G720A (3) GT-2200
		(B) SERIAL NO. : N/A
		(C) POWER SUPPLY : AC 120V/60Hz

Measurement Procedure Used :

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 1996 AND FCC / ANSI C63.4-1992

The device described above was tested by TAIWAN TOKIN EMC ENG. CORP. to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15B Class B limits both radiated and conducted emissions.
The measurement results were contained in this test report and TAIWAN TOKIN EMC ENG. CORP. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits. TAIWAN TOKIN EMC ENG. CORP. recommends that this data can be submitted for FCC certification purposes if a 6dB margin below FCC limits was obtained. This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Taiwan Tokin EMC Eng. corp.

Date of Test : May 6, 1998

Prepared by : Monica Chang
(MONICA CHANG)

Test Engineer : Allen Wang
(ALLEN WANG)

Approve & Authorized Signer : 5/19/98
(JACKIE DENG)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Scanner
Model Number	:	(1) Express (2) G720A (3) GT-2200 The only difference among Models is in Model Number.
FCC ID	:	JSFG720A
Applicant	:	Avision Inc. No. 20 Creation Rd., 1 Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C.
Manufacturer	:	Avision Inc. No. 20 Creation Rd., 1 Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C.
Power Adapter	:	Delta, M/N ADP-12FB Input : AC 100-120V, 50/60Hz Output : DC 12V/1.25A Cable : Nonshielded, Undetachable, 1.8m
Data Cable	:	Shielded, Detachable, 1.8m Bonded a ferrite core.
Date of Test	:	May 6, 1998

1.2. Details of Support Equipments

1.2.1. PERSONAL COMPUTER

Model Number	:	VECTRA VL 5/100
Serial Number	:	SG61802337
FCC ID	:	HCJVECTRAVL5
Manufacturer	:	Hewlett Packard
SCSI Interface Card	:	Adaptec, M/N AVA-E5021 FCC ID FGTE5021
VGA Card	:	Within Mother Board
Power Cord	:	Shielded, Detachable, 1.8m

1.2.2.MONITOR

Model Number	:	D1528-LS
Serial Number	:	90628L140R76
FCC ID	:	H41CM15006
Manufacturer	:	Dell
Data Cable	:	Shielded, Undetachable, 1.35m Bonded a ferrite core
Power Cord	:	Shielded, Detachable, 1.8m

1.2.3. KEYBOARD

Model Number	:	3524
Serial Number	:	N/A
FCC ID	:	CIGE03614
Manufacturer	:	Hewlett Packard
Data Cable	:	Shielded, Undetachable, 1.8m Bonded a ferrite core

1.2.4. PRINTER

Model Number	:	2225C+
Serial Number	:	2806S05196
FCC ID	:	DSI6XU2225
Manufacturer	:	Hewlett Packard
Power Adapter	:	Kani, Model AD-09 Nonshielded, Undetachable, 2.0m
Data Cable	:	Shielded, Detachable, 1.2m

1.2.5. MODEM #1

Model Number	:	1414
Serial Number	:	950098202
FCC ID	:	IFAXDM1414
Manufacturer	:	Aceex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, Model AM-91000A Nonshielded, Undetachable, 1.8m

1.2.6. MODEM #2

Model Number	:	1414
Serial Number	:	950098204
FCC ID	:	IFAXDM1414
Manufacturer	:	Aceex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, Model AM-91000A Nonshielded, Undetachable, 1.8m

1.2.7. MOUSE

Model Number	:	M-S34
Serial Number	:	LZA74556547
FCC ID	:	DZL211029
Manufacturer	:	Hewlett Packard
Data Cable	:	Nonshielded, Undetachable, 1.8m

1.2.8. SCANNER

Model Number	:	AV100CS
Serial Number	:	N/A
FCC ID	:	JSF-AV100S
Manufacturer	:	Avision Inc.
Power Adapter	:	Delta, M/N ADP-12FB Input : AC 100-120V, 50/60Hz Output : DC 12V/1.25A Cable : Nonshielded, Undetachable, 1.8m
Data Cable	:	Shielded, Detachable, 1.2m Bonded a ferrite core.

1.3. Description of Test Facility

Site Description (No. 5 Open Site)	:	Feb. 13, 1998 file on Federal Communication Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, U.S.A.
Name of Firm	:	Taiwan Tokin EMC Eng. Corp.
Site Location	:	No. 53-11, Tin-Fu Tsun, Lin-Kou, Taipei Hsien, Taiwan, R.O.C.
NVLAP Lab Code	:	200077-0

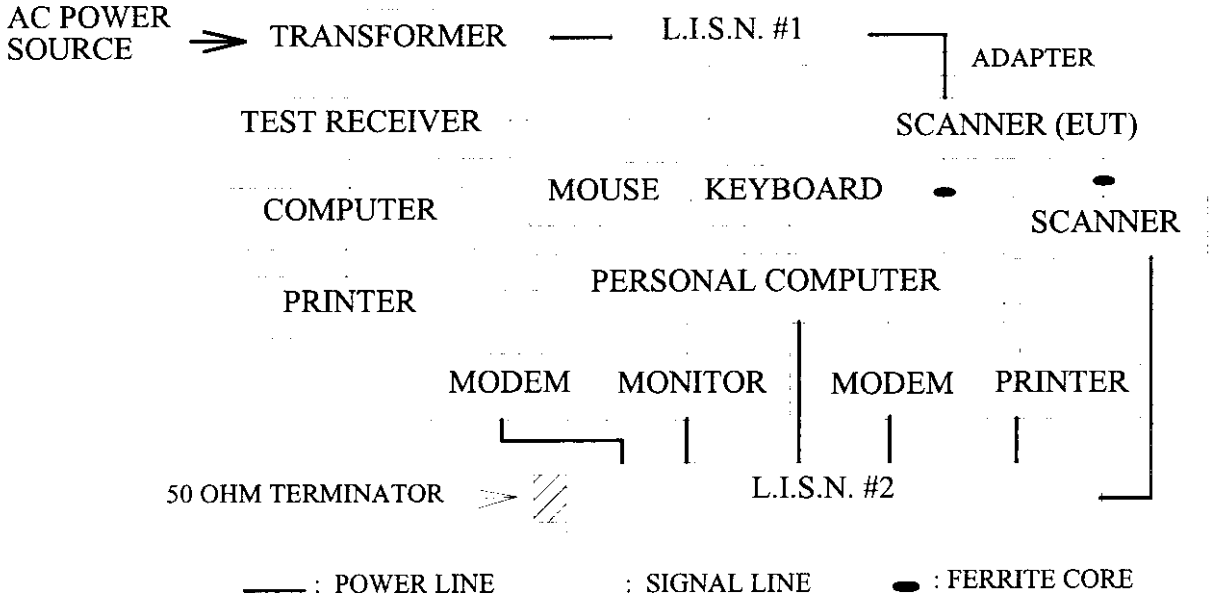
2. POWERLINE CONDUCTED TEST

2.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS 10	844591/015	Nov.25, 97'	1 Year
2.	L.I.S.N. # 1	Kyoritsu	KNW-407	8-1370-9	Jun.20, 97'	1 Year
3.	L.I.S.N. # 2	Kyoritsu	KNW-407	8-1370-10	Jun.20, 97'	1 Year

2.2. Block Diagram of Test Setup



2.3. Conducted Powerline Emission Limit (CLASS B)

Frequency	Maximum RF Line Voltage	
	uV	dBuV
0.45MHz ~ 30MHz	250	48

REMARKS : RF LINE VOLTAGE (dBuV) = 20 log RF LINE VOLTAGE (uV)

2.4. EUT Configuration on Measurement

The following equipments were installed on RF LINE VOLTAGE measurement to meet the Commission requirement and operating in a manner which tended to maximize its emission characteristics in a normal application.

2.4.1. Scanner (EUT)

Model Number	:	(1) Express (2) G720A (3) GT-2200
Serial Number	:	N/A
FCC ID	:	JSFG720A
Manufacturer	:	Avision Inc.
Power Adapter	:	Delta, M/N ADP-12FB Input : AC 100-120V, 50/60Hz Output : DC 12V/1.25A Cable : Nonshielded, Undetachable, 1.8m
Data Cable	:	Shielded, Detachable, 1.8m Bonded a ferrite core.

2.4.2. Support Simulators : As in section 1.2

2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulators as shown on 2.2.

2.5.2. Turned on the power of all equipments.

2.5.3. Setup the personal computer to drive the EUT through the scanner software driver.

2.5.4. Data was communicated between personal computer and Scanner (EUT) through scanner driver card.

2.5.5. Personal Computer displayed the test software image to monitor.

2.5.6. The other peripheral devices were driven and operated in turn during all testing.

2.6. Test Procedure

The EUT was connected to the power mains through a line impedance stabilization network (L.I.S.N. #1) and the other peripheral devices power cord were connected to the power mains through a line impedance stabilization network (L.I.S.N. #2) This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.)
Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions simulators of the interface cables should be manipulated according to FCC ANSI C63.4-1992 during conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESHS 10) was set at 10KHz.

The frequency range from 450KHz to 30MHz was checked.

All the test results are listed in section 2.7.

2.7. Line Conducted RF Voltage Measurement Results

All the test results are listed in the following pages :

Test Date : May 6, 1998 Temperature : 27.4 ℃ Humidity : 66 %

Reference Data # : # 21, 22, 23, 24

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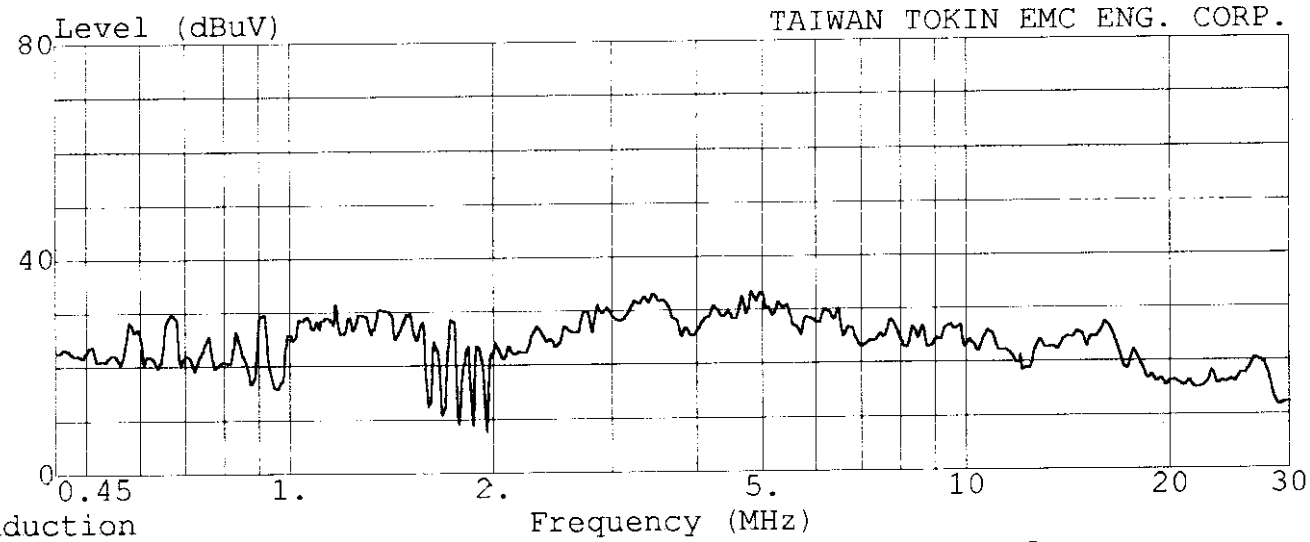
TAIWAN TOKIN EMC ENG. CORP.

Test Site:
#53-11 Tingfu Tsun,Linkou
Taipei, Taiwan R.O.C.
Tel:02-6092133 Fax:02-6099303

Data#: 21 File#: AVISION.EMI Date: 5-6,1998 Time: 15:07:00



conduction
Trace :
Limit : FCC CLASS-B
Probe : LISN(FCC)8-1370-10 LINE
Margin: -6.0dB
EUT : SCANNER M/N:GT-2200
Power : 120Vac/60Hz
Memo :
:
:

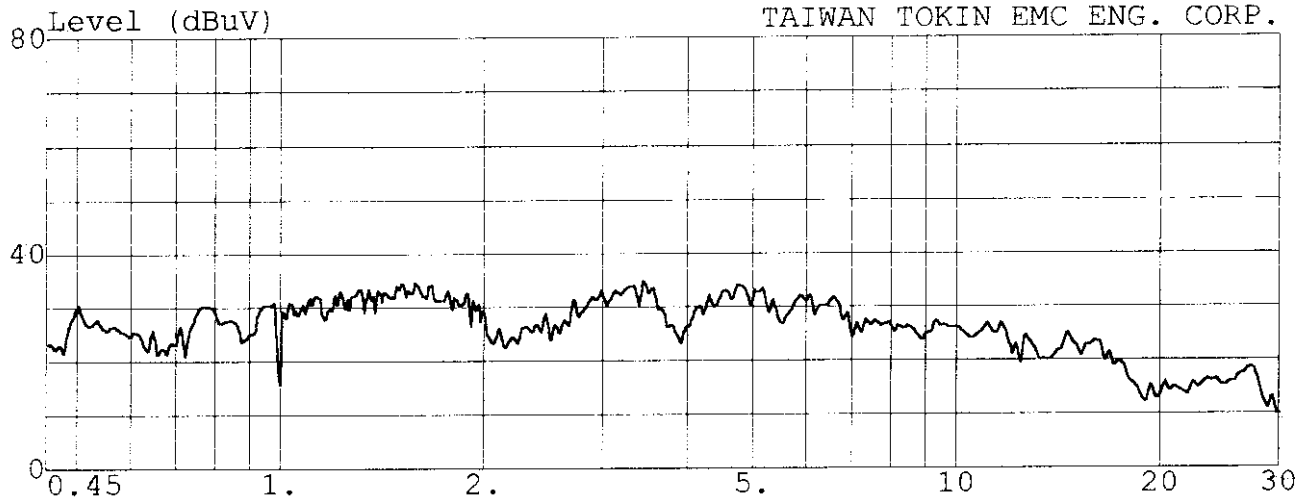
Ref Trace:

TOKIN

TAIWAN TOKIN EMC ENG. CORP.

Test Site:
#53-11 Tingfu Tsun,Linkou
Taipei, Taiwan R.O.C.
Tel:02-6092133 Fax:02-6099303

Data#: 22 File#: AVISION.EMI Date: 5-6,1998 Time: 15:09:21



conduction

Trace :
Ref Trace:
Limit : FCC CLASS-B
Probe : LISN(FCC)8-1370-10 NEUTRAL
Margin: -6.0dB
EUT : SCANNER M/N:GT-2200
Power : 120Vac/60Hz
Memo :
:
:

TOKIN

TAIWAN TOKIN EMC ENG. CORP.

Test Site:
#53-11 Tingfu Tsun,Linkou
Taipei, Taiwan R.O.C.
Tel:02-6092133 Fax:02-6099303

Data#: 23 File#: AVISION.EMI Date: 5-6,1998 Time: 15:14:32
conduction
Limit : FCC CLASS-B
Probe : LISN(FCC)8-1370-10 LINE
Margin: -6.0dB
EUT : SCANNER M/N:GT-2200
Power : 120Vac/60Hz
Memo :
:
:

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dB	dB	dB	dB	dB	dB	dB	
1	0.666	29.49	-18.51	48.00	29.34	0.10	0.05	0.00	QP
2	1.162	31.28	-16.72	48.00	31.13	0.10	0.05	0.00	QP
3	3.439	32.99	-15.01	48.00	32.84	0.10	0.05	0.00	QP
4	4.821	32.94	-15.06	48.00	32.79	0.10	0.05	0.00	QP
5	9.474	26.84	-21.16	48.00	26.65	0.14	0.05	0.00	QP
6	16.060	27.10	-20.90	48.00	26.77	0.21	0.12	0.00	QP

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TAIWAN TOKIN EMC ENG. CORP.

Test Site:
#53-11 Tingfu Tsun,Linkou
Taipei, Taiwan R.O.C.
Tel:02-6092133 Fax:02-6099303

Data#: 24 File#: AVISION.EMI Date: 5-6,1998 Time: 15:17:18
conduction
Limit : FCC CLASS-B
Probe : LISN(FCC)8-1370-10 NEUTRAL
Margin: -6.0dB
EUT : SCANNER M/N:GT-2200
Power : 120Vac/60Hz
Memo :
:
:

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark
	MHz	dB	dB	dB	dB	dB	dB	dB	
1	0.499	29.97	-18.03	48.00	29.83	0.10	0.04	0.00	QP
2	1.497	33.40	-14.60	48.00	33.25	0.10	0.05	0.00	QP
3	3.454	34.11	-13.89	48.00	33.96	0.10	0.05	0.00	QP
4	4.821	33.67	-14.33	48.00	33.52	0.10	0.05	0.00	QP
5	6.030	31.84	-16.16	48.00	31.69	0.10	0.05	0.00	QP
6	11.701	26.16	-21.84	48.00	25.92	0.17	0.07	0.00	QP

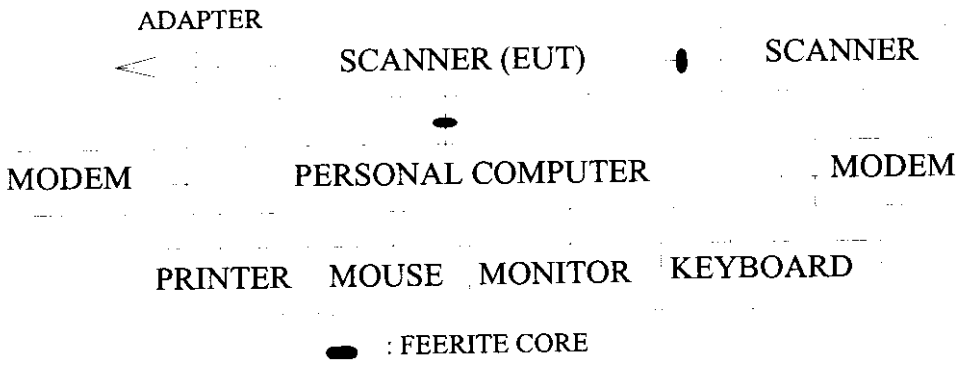
3. RADIATED EMISSION TEST

3.1. Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	HP	8568B	3001A05001	Feb.10, 98'	1 Year
2.	Q.P Adapter	HP	85650A	2811A01395	Feb.10, 98'	1 Year
3.	Amplifier	HP	8447D	2944A07185	Aug.04, 97'	1 Year
4.	Biconical Antenna	Chase	VBA6106A	1245	Aug.04, 97'	1 Year
5.	Log Periodic Antenna	Chase	UPA6109	1035	Aug.04, 97'	1 Year

3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between EUT and simulators



3.2.2. Open Field Test Site Setup Diagram

ANTENNA TOWER

ANTENNA ELEVATION VARIES FROM 1METER TO 4 METERS

3 METERS

EUT

0.8
METER

TURN TABLE

GROUND PLANE

3.3. Radiation Limit (CLASS B)

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMITS	
MHz	Meters	uV/M	dBuV/M
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Remark : (1) Emission level (dBuV/M) = 20 log Emission level (uV/M)
(2) The tighter limit applies at the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. EUT Configuration on Measurement

The configuration of EUT and its simulators were same as those used in conducted measurement. Please refer to 2.4.

3.5. Operating Condition of EUT

Same as conducted measurement which was listed in 2.5.

3.6. Test Procedure

The EUT and its simulators were placed on a turn table which is 0.8 meter above ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) and dipole antenna were used as a receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-1992 on radiated measurement.

The bandwidth setting on the field strength meter (HP Spectrum Analyzer 8568B) was 120KHz.

All the test results are listed in section 3.7.

3.7. Radiated Emission Noise Measurement Results

The frequency spectrum from 30 MHz to 1000 MHz was investigated. All the emissions not reported below are too low against the FCC CLASS B limit..

Date of Test : May 6, 1998 Temperature : 30 ℃

EUT : Scanner Humidity : 53 %

	Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBuV	Emission Level Horizontal dBuV/m	Limits dBuV/m	Margin dBuV/m
	32.052	23.08	1.53	2.32	26.93	40.00	13.07
	52.084	14.98	1.86	11.88	28.72	40.00	11.28
*	**64.108**	**11.53**	**2.00**	**18.98**	**32.51**	**40.00**	**7.49**
	71.578	12.19	2.06	18.09	32.34	40.00	7.66
	120.013	18.90	2.51	10.30	31.71	43.50	11.79
	168.026	21.52	2.86	5.44	29.82	43.50	13.68
	189.754	21.33	3.02	7.38	31.73	43.50	11.77
	200.032	20.68	3.09	6.49	30.26	43.50	13.24
	232.099	23.28	3.32	8.79	35.39	46.00	10.61
	253.014	24.11	3.44	3.55	31.10	46.00	14.90
	312.068	13.93	3.81	15.54	33.28	46.00	12.72
	408.101	16.25	4.32	15.37	35.94	46.00	10.06
	432.106	16.47	4.43	12.08	32.98	46.00	13.02
	528.120	18.25	4.97	10.25	33.47	46.00	12.53
	576.128	19.06	5.18	12.11	36.35	46.00	9.65
	696.161	20.73	5.78	9.43	35.94	46.00	10.06
	744.183	21.01	5.99	4.28	31.28	46.00	14.72
	955.589	23.10	6.84	4.57	34.51	46.00	11.49

Remark :
1. All readings are Quasi-Peak values.
2. The worst emission was detected at 64.108MHz with corrected signal level of 32.51dBuV/m (limit is 40dBuV/m) when the antenna was at horizontal polarization and was at 1.95m high and the turn table was at 295 ° .
3. 0 ° was the table front facing the antenna. Degree is calculated from 0 ° clockwise facing the antenna.

Date of Test : May 6, 1998 Temperature : 30 ℃

EUT : Scanner Humidity : 53 %

	Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBuV	Emission Level Vertical dBuV/m	Limits dBuV/m	Margin dBuV/m
	32.052	22.68	1.53	10.97	35.18	40.00	4.82
*	**40.063**	**19.36**	**1.67**	**14.27**	**35.30**	**40.00**	**4.70**
	60.142	13.57	1.95	16.54	32.06	40.00	7.94
	72.017	13.02	2.06	20.21	35.29	40.00	4.71
	128.002	18.49	2.57	9.79	30.85	43.50	12.65
	136.020	19.32	2.60	9.96	31.88	43.50	11.62
	168.030	19.25	2.86	9.11	31.22	43.50	12.28
	180.036	20.96	2.96	6.23	30.15	43.50	13.35
	240.053	23.21	3.35	5.22	31.78	46.00	14.22
	312.063	14.35	3.81	20.13	38.29	46.00	7.71
	384.080	15.66	4.19	18.19	38.04	46.00	7.96
	408.087	16.06	4.32	18.28	38.66	46.00	7.34
	432.129	16.13	4.43	18.60	39.16	46.00	6.84
	528.121	18.28	4.97	16.34	39.59	46.00	6.41
	552.176	19.43	5.06	12.92	37.41	46.00	8.59
	576.147	19.65	5.18	15.90	40.73	46.00	5.27
	744.177	20.97	5.99	11.41	38.37	46.00	7.63
	792.188	21.57	6.23	10.35	38.15	46.00	7.85

Remark :
1. All readings are Quasi-Peak values.
2. The worst emission was detected at 40.063MHz with corrected signal level of 35.30dBuV/m (limit is 40dBuV/m) when the antenna was at vertical polarization and was at 1.05m high and the turn table was at 35 ° .
3. 0 ° was the table front facing the antenna. Degree is calculated from 0 ° clockwise facing the antenna.

4. DEVIATION TO TEST SPECIFICATIONS

【 NONE 】