APPLICATION FOR CERTIFICATION
On Behalf of
Microtek International Inc.
Image Scanner

Model No.: SKYLINE 5000 FS

FCC ID : EF9SKYLINE-5000FS

Prepared for : Microtek International Inc.
No. 6, Industry East Road 3,
Science-Based Industrial Park,
Hsinchu, Taiwan, R.O.C.

Prepared By : Taiwan Tokin EMC Eng. Corp.
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Date of Test	:	Jan. 23 / Feb. 02, 1998
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TEST REPORT CERTIFICATION

Applicant	:	Microtek International Inc.
Manufacturer	:	Microtek International Inc.
FCC ID	:	EF9SKYLINE-5000FS
EUT Description	:	Image Scanner
		(A) MODEL NO. : SKYLINE 5000 FS
		(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 are contained in this test report and TAIWAN TOKIN EMC ENG. CORP. 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 FCC official limits. TAIWAN TOKIN EMC ENG. CORP. recommends that this data was submitted for FCC certification purposes if a 6dB margin below FCC limits is 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 : Jan. 23 / Feb. 02, 1998

Prepared by : (CHERRY WANG)

Test Engineer : (ALLEN WANG)

Approve & Authorized Signer : (JACKIE DENG) 2/2/98

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	Image Scanner
Model Number	:	SKYLINE 5000 FS
FCC ID	:	EF9SKYLINE-5000FS
Applicant	:	Microtek International Inc. No. 6, Industry East Road 3, Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C.
Manufacturer	:	Microtek International Inc. No. 6, Industry East Road 3, Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C.
Switching Power Supply	:	TDK, M/N MRW161 S/N 2Y404222
SCSI Data Cable	:	Shielded, Detachable, 1.5m Bonded a ferrite core
Power Cord	:	Nonshielded, Detachable, 1.8m
Date of Test	:	Jan. 23 / Feb. 02, 1998

1.2. Details of Support Equipments

1.2.1. PERSONAL COMPUTER

Model Number	:	D3498A
Serial Number	:	SG54300543
FCC ID	:	HCJVECTRAVE4
Manufacturer	:	Hewlett Packard
VGA Card	:	Within Mother Board
SCSI Driver Card	:	**Adaptec, M/N AVA-1505AE FCC By FCC DoC**
Power Cord	:	Nonshielded, Detachable, 1.8m

1.2.2. MONITOR

Model Number	:	PM36A
Serial Number	:	W70205140A
FCC ID	:	LLW9ZB1564
Manufacturer	:	Funai Electric Company of Taiwan
Data Cable	:	Shielded, Undetachable, 1.2m
Power Cord	:	Nonshielded, Detachable, 1.5m

1.2.3. KEYBOARD

Model Number	:	E03633QLTWQ
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	:	3007S68643
FCC ID	:	DSI6XU2225
Manufacturer	:	Hewlett Packard
Power Adapter	:	Hewlett Packard, M/N 82241A
Power Cord	:	Nonshielded, Undetachable, 2.0m
Data Cable	:	Shielded, Detachable, 1.2m

1.2.5. MODEM #1

Model Number	:	1414
Serial Number	:	950110300
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	:	950098201
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	:	LCA53202204
FCC ID	:	DZL210582
Manufacturer	:	Hewlett Packard
Data Cable	:	Shielded, Undetachable, 1.8m

1.2.8. SCAN MAKER

Model Number	:	PTS-1800
Serial Number	:	N/A
FCC ID	:	EF9PTS-1800
Manufacturer	:	Microtek International Inc.
SCSI Interface Cable	:	Shielded, Detachable, 2.0m Bonded a ferrite core
Power Cord	:	Nonshielded, Detachable, 1.8m

1.3. Description of Test Facility

Site Description (No. 2 Open Site)	:	Jul. 15, 1996 Re-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

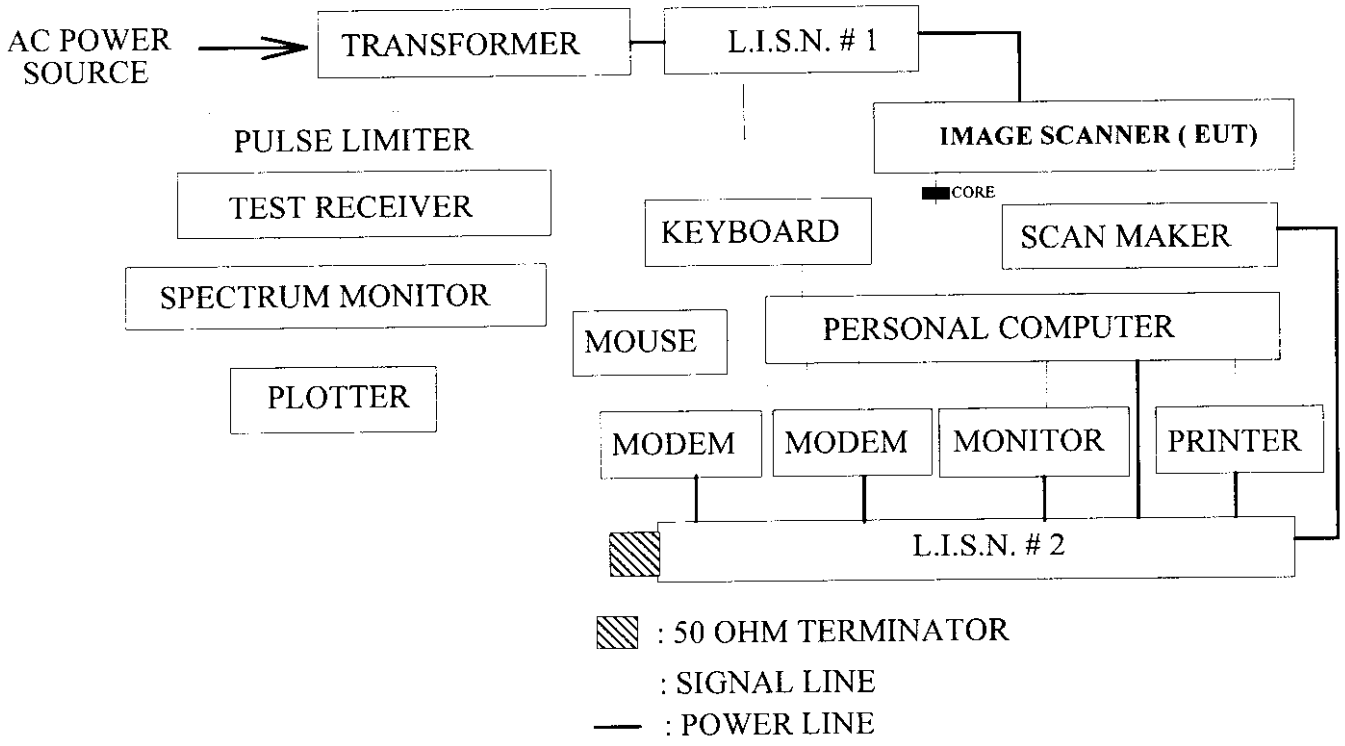
2. POWERLINE CONDUCTED TEST

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	ESH3	893044/015	Aug.01, 97'	1 Year
2.	L.I.S.N. # 1	Kyoritsu	KMW-407	8-855-9	May.01, 97'	1 Year
3.	L.I.S.N. # 2	Kyoritsu	KMW-407	8-881-13	May.01, 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. Image Scanner (EUT)

Model Number	:	SKYLINE 5000 FS
Serial Number	:	N/A
FCC ID	:	EF9SKYLINE-5000FS
Manufacturer	:	Microtek International Inc.
Switching Power Supply	:	TDK, M/N MRW161 S/N 2Y404222
SCSI Data Cable	:	Shielded, Detachable, 1.5m Bonded a ferrite core
Power Cord	:	Nonshielded, Detachable, 1.8m

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 Microtek's scanner driver card and software driver.

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

2.5.5. Personal Computer displayed the test software image by windows 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 ESH3) 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

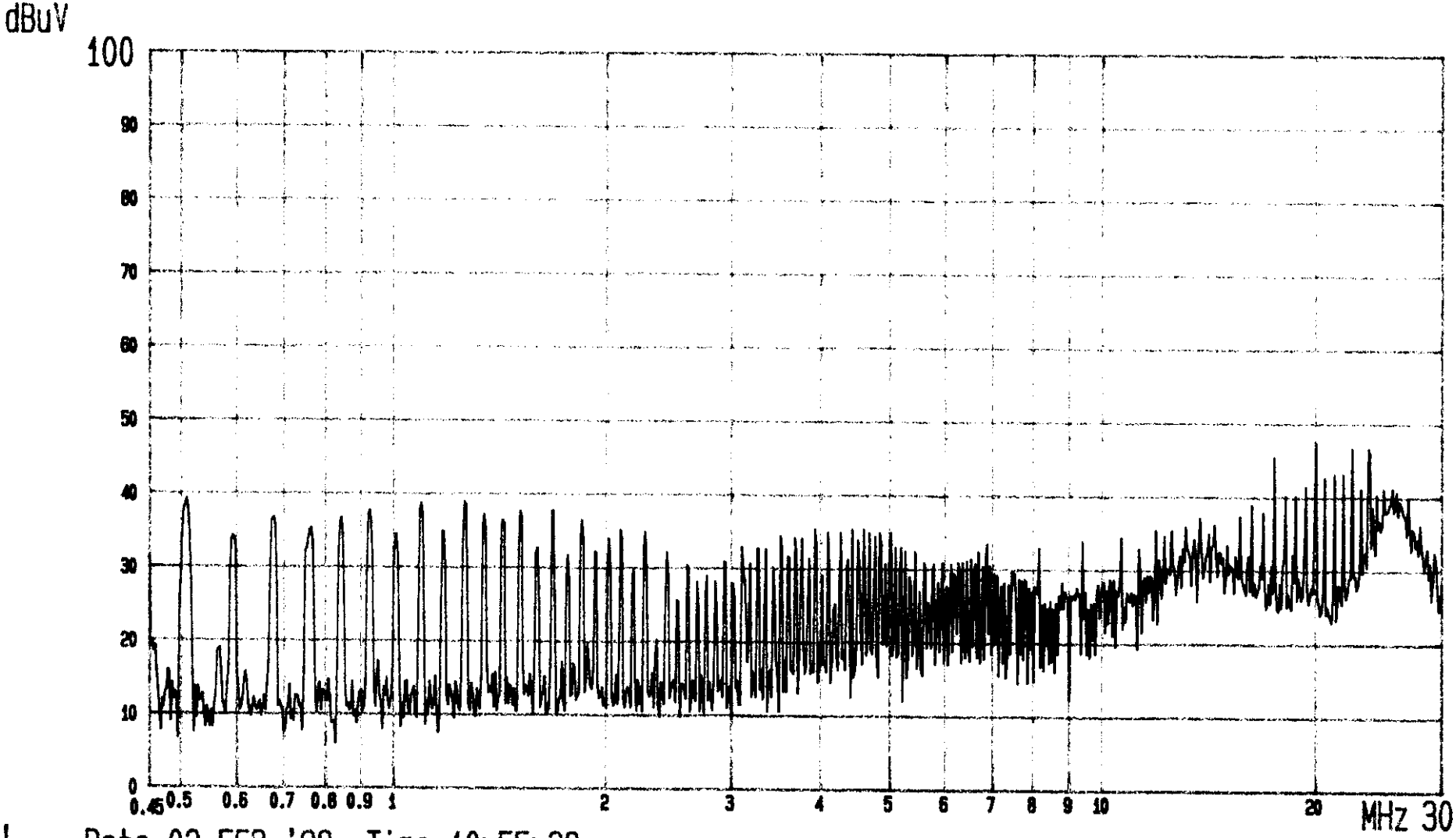
The frequency range from 450KHz to 30 MHz was investigated.
All emissions not reported below are too low against the prescribed limits.

Date of Test : Feb. 02, 1998 Temperature : 18 ℃

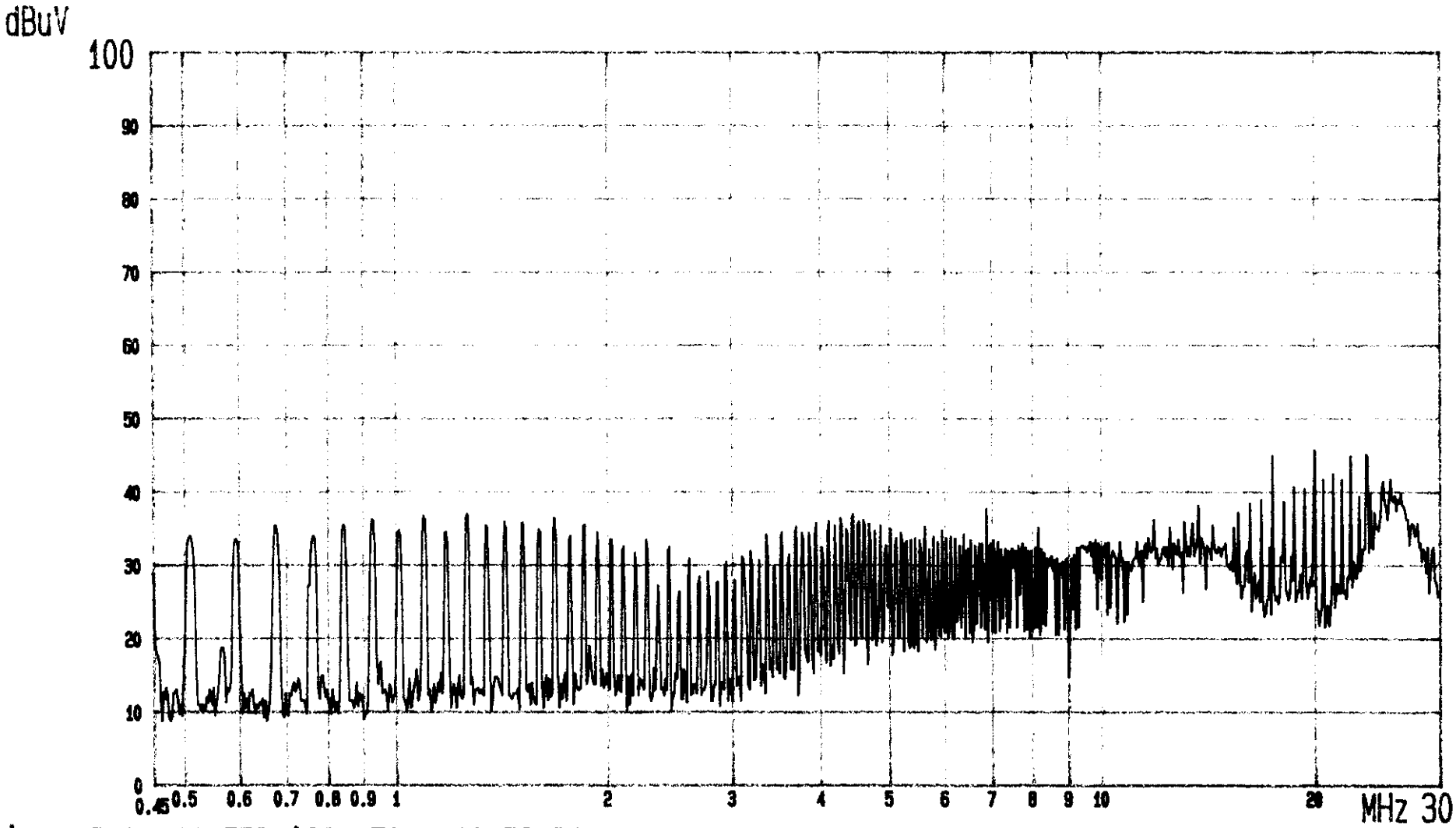
EUT : Image Scanner, M/N: SKYLINE 5000 FS Humidity : 63 %

Frequency	Factor	Measurement (dBuV)		Reading (dBuV)		Limits (dBuV)	Margin (dBuV)	
(MHz)	dB	VA	VB	VA	VB		VA	VB
0.5018	0.2	36.5	*	36.7	*	48.0	11.3	*
0.6706	0.2	*	33.1	*	33.3	48.0	*	14.7
1.0884	0.2	36.6	*	36.8	*	48.0	11.2	*
1.2577	0.2	*	34.2	*	34.4	48.0	*	13.6
4.4419	0.3	33.1	*	33.4	*	48.0	14.6	*
4.4458	0.3	*	33.5	*	33.8	48.0	*	14.2
17.4497	0.8	*	43.6	*	44.4	48.0	*	3.6
19.9997	**0.8**	**46.4**	45.3	**47.2**	46.1	**48.0**	**0.8**	1.9
22.4998	1.1	44.6	*	45.7	*	48.0	2.3	*
23.7497	1.1	45.3	43.9	46.4	45	48.0	1.6	3

Remark :
1. All readings are Quasi-Peak values.
2. Factor = Insertion Loss + Cable Loss
3. The worst emission was detected at 19.9997MHz with corrected signal level of 47.2dBuV (limit is 48dBuV) when the VA side of the EUT was connected to L.I.S.N.



|--- Date 02.FEB '98 Time 10:55:38
MICROTEK EUT: IMAGE SCANNER M/N: SCAN MAKER TR5000 PAGE: 001.
LINE: VA. (PEAK VALUE) TAIWAN TOKIN EMC.ENG.CORP.



|--- Date 02.FEB '98 Time 10:59:31

MICROTEK EUT: IMAGE SCANNER M/N: SCAN MAKER TR5000 PAGE: 002.

LINE: VB. (PEAK VALUE) TAIWAN TOKIN EMC.ENG.CORP.

3. RADIATED EMISSION TEST

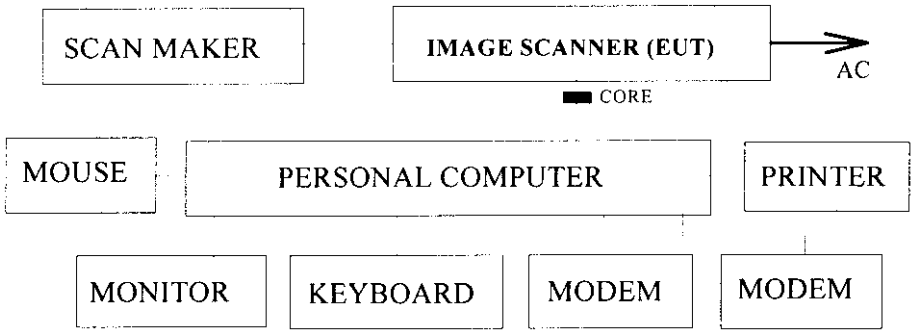
3.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESVP	893202/001	Aug. 04, 97'	1 Year
2.	Broadband Antenna	Chase	VBA6106A	1240	Jan. 14, 98'	1 Year
3.	Broadband Antenna	Schwarzbeck	UHALP 9108-A	0139	Jan. 14, 98'	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 METER

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 are 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., except the test set up replaced by section 3.2.

3.6. Test Procedure

The EUT and its simulators were placed on a turn table which was 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 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 during radiated measurement.

The bandwidth setting on the field strength meter (R&S TEST RECEIVER ESVP) was 120KHz.

The frequency range from 30MHz to 1000MHz was checked.

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 : Jan. 23, 1998 Temperature : 17 ℃

EUT : Image Scanner, M/N: SKYLINE 5000 FS Humidity : 69 %

	Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBuV	Emission Level Horizontal dBuV/m	Limits dBuV/m	Margin dBuV/m
*	**39.991**	**20.22**	**1.77**	**12.30**	**34.29**	**40.00**	**5.71**
	49.989	16.21	2.00	14.50	32.71	40.00	7.29
	69.999	11.78	2.35	17.20	31.33	40.00	8.67
	85.002	15.04	2.56	11.20	28.80	40.00	11.20
	105.002	18.29	2.83	15.60	36.72	43.50	6.78
	119.999	19.40	3.05	13.50	35.95	43.50	7.55
	140.015	20.85	3.33	13.60	37.78	43.50	5.72
	159.992	21.25	3.64	11.20	36.09	43.50	7.41
	180.001	21.74	3.82	4.00	29.56	43.50	13.94
	200.001	22.19	3.98	4.50	30.67	43.50	12.83
	250.001	23.17	4.64	7.30	35.11	46.00	10.89
	285.004	25.54	4.93	5.00	35.47	46.00	10.53
	330.002	13.94	5.43	11.20	30.57	46.00	15.43
	370.003	15.73	5.81	14.20	35.74	46.00	10.26
	390.003	16.81	5.96	12.60	35.37	46.00	10.63
	410.003	17.00	6.13	11.10	34.23	46.00	11.77
	470.003	17.30	6.89	8.90	33.09	46.00	12.91
	520.001	18.04	7.33	6.90	32.27	46.00	13.73
	550.003	18.87	7.60	3.60	30.07	46.00	15.93

Remark :
1. All readings are Quasi-Peak values.
2. The worst emission was detected at 39.991MHz with corrected signal level of 34.29dBuV/m (limit is 40.0dBuV/m) when the antenna was at horizontal polarization and was at 1.8m high and the turn table was at 25 ° .
3. 0 ° was the table front facing the antenna. Degree is calculated from 0 ° clockwise facing the antenna.

Date of Test : Jan. 23, 1998 Temperature : 17 ℃

EUT : Image Scanner, M/N: SKYLINE 5000 FS Humidity : 69 %

Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBuV	Emission Level Vertical dBuV/m	Limits dBuV/m	Margin dBuV/m
35.000	21.88	1.60	11.10	34.58	40.00	5.42
49.989	15.42	2.00	17.50	34.92	40.00	5.08
59.993	13.44	2.22	17.70	33.36	40.00	6.64
80.000	15.39	2.48	14.40	32.27	40.00	7.73
95.003	17.77	2.69	12.30	32.76	43.50	10.74
109.997	17.36	2.83	13.70	33.89	43.50	9.61
***120.000**	**18.56**	**3.05**	**17.30**	**38.91**	**43.50**	**4.59**
140.001	19.03	3.33	14.70	37.06	43.50	6.44
174.996	21.94	3.78	7.70	33.42	43.50	10.08
205.001	21.79	4.08	7.50	33.37	43.50	10.13
250.001	23.17	4.64	8.20	36.01	46.00	9.99
285.019	25.28	4.93	7.40	37.61	46.00	8.39
330.002	14.27	5.43	13.20	32.90	46.00	13.10
370.002	15.13	5.81	13.50	34.44	46.00	11.56
390.003	15.86	5.96	13.50	35.32	46.00	10.68
430.003	16.11	6.36	13.10	35.57	46.00	10.43
490.003	17.74	7.03	10.10	34.87	46.00	11.13
530.003	19.28	7.46	13.10	39.84	46.00	6.16
550.003	19.24	7.60	8.50	35.34	46.00	10.66
590.004	18.72	7.72	6.70	33.14	46.00	12.86

Remark :
1. All readings are Quasi-Peak values.
2. The worst emission was detected at 120.000MHz with corrected signal level of 38.91dBuV/m (limit is 43.5dBuV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 215 ° .
3. 0 ° was the table front facing the antenna. Degree is calculated from 0 ° clockwise facing the antenna.

4. DEVIATION TO TEST SPECIFICATIONS

【 NONE 】