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ELECTROMAGNETIC COMPATIBILITY TEST REPORT

Company : Compeye Corporation
Address : 11, Lane 596, Chien Hsing Road Sec. 2, Hsinfeng, Hsinchu, Taiwan, R.O.C.
Sample Name : SCANNER
Model : DP66V
Data Applies To : DP66VC; DP66VP; DP66VU; DP66KC; DP66KP; DP66KU; DP66MC; DP66MP; DP66MU; DP66BC; DP66BP; DP66BU; DP66EC; DP66EP; DP66EU; Sm@rtScan Office; Sm@rtScan Personal; Maxx Scan 6122; 3D Pro Scanner; Vision Scan; Mirror; Mirror+; Simplex 1236C; WINSCAN Pro-2000; Tiny Scan 1236U
Date Received : NOV. 05, 1999
Date Tested : NOV. 16, 1999

MEASUREMENT REQUIREMENT USED :
FCC RULES AND REGULATION PART 15 SUBPART B
CLASS B OCTOBER 1998 AND ANSI C63.4 MAY 1992
CISPR 22, CLASS B, 1996

WE HEREBY CERTIFY THAT: The measurements shown in the attachment were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable. We assume full responsibility for the accuracy and completeness of these measurements and vouch for the qualifications of all persons taking them.

	Name	Signature	Date
Testing Engineer	C.F.Wu/NVLAP	C. F. Wu	Feb. 18, 2000
Approving Manager	Laurence Chang/NVLAP	Laurence Chang	Feb. 18, 2000

Notes•
1. This report will be invalid if duplicated or photocopied in part.
2. This report refers only to the specimen(s) submitted to test, and is invalid as seperately used.
3. This report is invalid without examination stamp and signature of this institute.
4. The tested specimen(s) will be preserved for thirty days from the date issued.

5. This is a NIST/NVLAP accrediated report but not constituted and endorsed by US government.

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1. GENERAL INFORMATION

1.1 GENERAL STATEMENT

MEASUREMENT DEVIATION : Comply with standard in full

TRACEABILITY : This test result is traceable to national or international std.

1.2 DESCRIPTION OF EUT • POWER

COMPANY : Compeye Corporation

SAMPLE NAME : SCANNER

MODEL NUMBER : DP66V

SERIAL NUMBER : Not applicable

POWER SUPPLY •15VDC(from Power adapter)

I/O PORT •EPP Port × 1•Printer Port × 1•USB Port × 1

SIGNAL CABLE •1. 1.2m, Shielded cable for USB port
2. 1.2m, Shielded with molded-in ferrite core for EPP Port

Engineering Sample ☑ • Product Sample ☐ •Mass Product Sample ☐ .

1.3 DESCRIPTION OF PERIPHERALS

•1•PC

MODEL NUMBER : 54V
SERIAL NUMBER : 96NB093
MANUFACTURER : IBM CORP.
FCC ID : ----------
POWER CORD : Unshielded , Detachable , 1.8m

•2•MONITOR

MODEL NUMBER : 6546-00N
SERIAL NUMBER : 23-M6334
MANUFACTURER : IBM CORP.
F.C.C. ID : A3KM065
POWER CORD : Unshielded , Detachable , 1.8m
SIGNAL CABLE : Shielded , Undetachable , 1.8m

•3•KEYBOARD

PRODUCT NUMBER : KB-7953
MANUFACTURER : IBM CORP.
SERIAL NUMBER : 0004094
F.C.C. ID : ----------
SIGNAL CABLE : Shielded , Undetachable , 1.8m
POWER SOURCE : 5VDC (from PC)

•4•MOUSE

MODEL NUMBER : M-S34
MANUFACTURER : IBM CORP.
SERIAL NUMBER : 23-037335
FCC ID : DZL211029
SIGNAL CABLE : Shielded , Undetachable , 1.8m
POWER SOURCE : 5VDC (from PC)

•5•MODEM

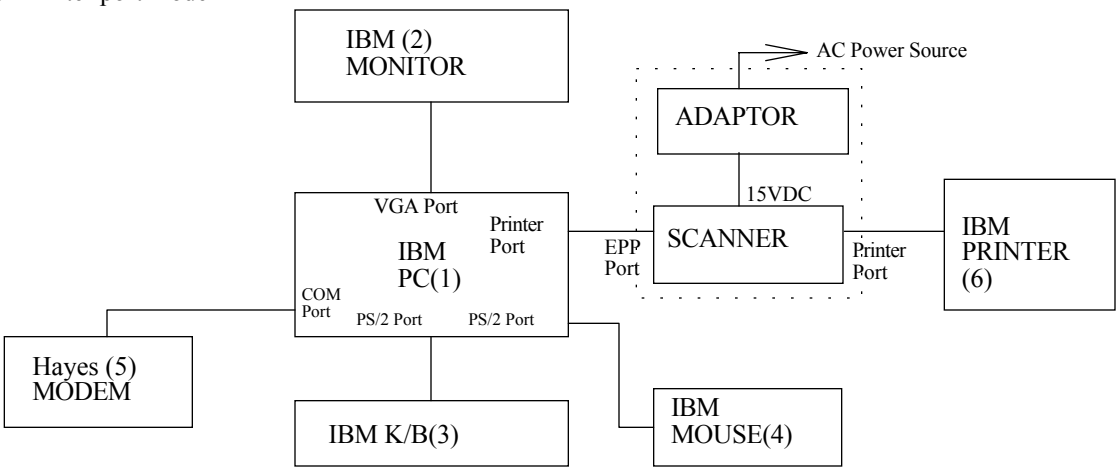
MODEL NUMBER : 5240AM
SERIAL NUMBER : A0095240K270
MANUFACTURER : Hayes CORP.
FCC ID : BFJ5201AM
POWER CORD : Unshielded , Detachable , 1.8m (9VAC from adapter)
SIGNAL CABLE : Shielded , Detachable , 2m

•6•PRINTER

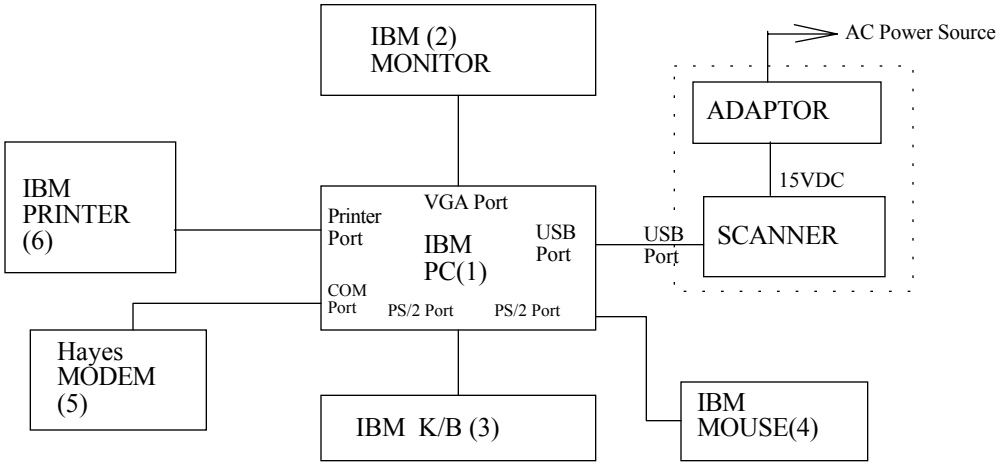
MODEL NUMBER : 5152-002
SERIAL NUMBER : 0754365
MANUFACTURER : IBM CORP.
FCC ID : BKM9A85152002
POWER CORD : Shielded , Detachable , 1.5m
DATA CABLE : Shielded , Detachable , 1.2m

1.3 EUT & PERIPHERALS SETUP DIAGRAM

(1)For Printer port mode



(2)For USB mode



The indicated numbers(1)(2).....,please refer to 1.2

1.5 EUT OPERATING CONDITION

1. According to two configurations to install.
2. Entered into windows98 sytem, then run software "Scanex32.exe" to execute action back and forth for a scanner.
3. Repeated these procedure untill test ok.

1.6 DESCRIPTION OF TEST SITE

SITE DESCRIPTION	•FCC certificate NO. :31040/SIT TUV certificate NO. :I9664582-9610 Lloyd's certificate NO. :LA003 BSMI certificate NO. :SL2-IN-E-0002 NVLAP Lab code•200118-0 CNLA certificate NO. :CNLA-ZL97018 VCCI certificate NO. : R-706, C-650
NAME OF SITE	•Electronics Research & Service Organization Industrial Technology Research Institute
SITE LOCATION	•K500, 195-4 , sec. 4, Chung Hsing Rd., Chu-Tung Chen. Hsin-Chu, Taiwan 31015 R.O.C.

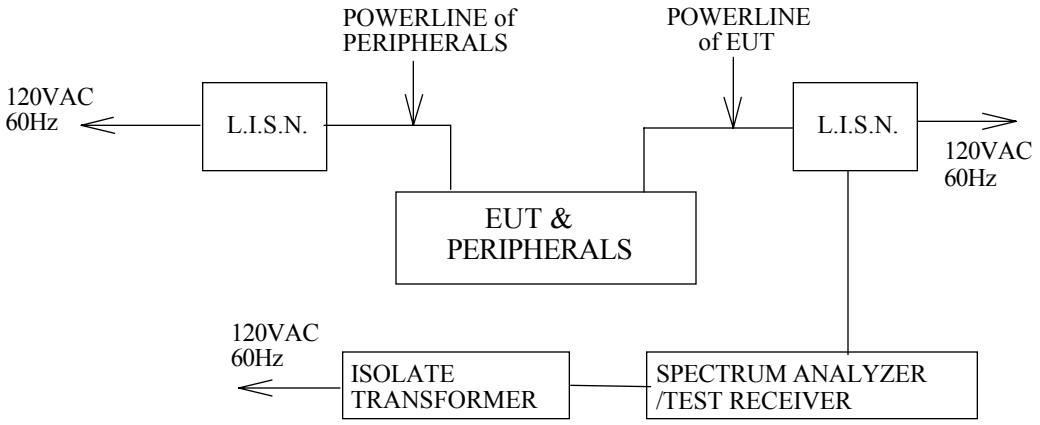
2. CONDUCTED EMISSION TEST

2.1 TEST EQUIPMENTS

The following test equipments are used during the conducted powerline tests•

MANUFACTURER OR TYPE	MODEL No	SERIAL NO.	DATE OF CALIBRATION	CALIBRA -TION PERIOD	REMARK
SPECTRUM ANALYZER & DISPLAY	HP 8568A	2235A02320	MAR. 18, 1999	1 Year	PRETEST
QUASI-PEAK ADAPTER	HP 85650 A	2341A00672	MAR. 18, 1999	1 Year	PRETEST
ISOLATION TRANSFORMER	SOLAR 7032-1	N/A	N/A	N/A	FINAL
L.I.S.N.	EMCO 3850/2	9311-1025 9401-1028	MAR. 25. 1999 For Characteristic impedance JUN. 11, 1999 For Insertion loss	1 Year	FINAL
TEST RECEIVER	R/S ESH3	8720791118	JUL. 29, 1999	1 Year	FINAL
SHIELDED ROOM	KEENE 5983	NO.1	N/A	N/A	FINAL
PULSE LIMIT	R/S EHS3Z2	357.8810.52	JUL. 22, 1999	1 Year	FINAL
N TYPE COAXIAL CABLE	----------	----------	JUL. 05, 1999	1 Year	FINAL
50• TERMINATOR	----------	----------	JUL. 14, 1999	1 Year	FINAL

2.2 TEST SETUP



2.3 CONDUCTED POWER LINE EMISSION LIMIT

FREQUENCY	MAXIMUM RF LINE VOLTAGE (dB•V)			
	CLASS A		CLASS B	
(MHz)	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56	56-46
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

2.4 TEST PROCEDURE

The test procedure is performed in a 12ft×12ft×8ft(L×W×H) shielded room. the EUT along with its peripherals were placed on a 1.0m(W)× 1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chasis ground was bounded to the horizontal ground plane of shielded room. All peripherals were connected to the second LISN and the chasis ground also bounded to the horizontal ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

2.5 UNCERTAINTY OF CONDUCTED EMISSION

The uncertainty of conducted emission is ±1.36dB.

2.6 CONDUCTED RF VOLTAGE MEASUREMENT

The frequency spectrum from 0.15 MHz to 30 MHz was investigated. All emissions not reported below are more than 20 dB below the prescribed limits.

Temperature•27• Humidity•60 % RH

FREQUENCY	READING(dB•V)				LIMITS	
	ONE END & GRD'D		THE OTHER END & GRD'D		(dB•V)	
(MHz)	Q.P.	Ave.	Q.P.	Ave.	Q.P.	Ave.
0.150	•	•	•	•	66.00	56.00
0.155	53.90	28.90	53.80	30.00	65.74	55.74
0.235	51.60	31.20	50.60	30.10	62.26	52.26
0.408	46.90	26.90	46.70	23.20	57.68	47.68
0.579	41.50	•	41.00	•	56.00	46.00
1.145	35.00	•	35.00	•	56.00	46.00
6.819	36.60	•	36.60	•	60.00	50.00
20.041	44.10	43.50	41.20	•	60.00	50.00
22.045	45.60	45.10	41.50	•	60.00	50.00
30.000	•	•	•	•	60.00	50.00

REMARKS•1. • Undetectable or the Q.P.values is lower than the limits of Ave
2. For Sincho SCP48-151000 Power Adapter
3. For EPP mode

2.6 CONDUCTED RF VOLTAGE MEASUREMENT

The frequency spectrum from 0.15 MHz to 30 MHz was investigated. All emissions not reported below are more than 20 dB below the prescribed limits.

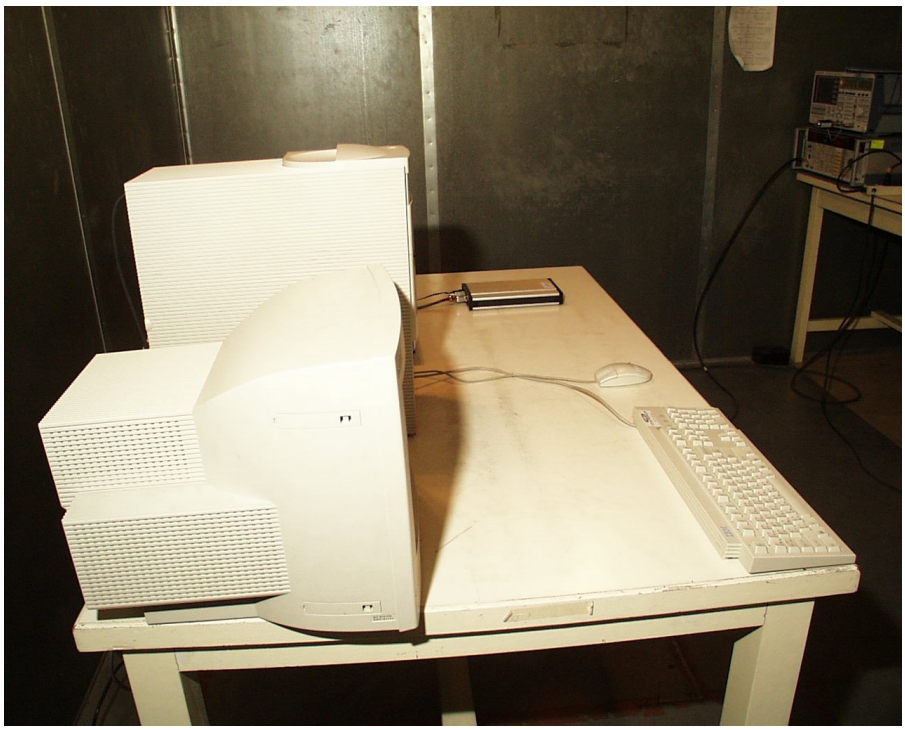
Temperature•27• Humidity•60 % RH

FREQUENCY	READING(dB•V)				LIMITS	
	ONE END & GRD'D		THE OTHER END & GRD'D		(dB•V)	
(MHz)	Q.P.	Ave.	Q.P.	Ave.	Q.P.	Ave.
0.150	•	•	•	•	66.00	56.00
0.155	53.70	30.10	53.60	30.00	65.74	55.74
0.235	50.60	31.20	51.60	29.30	62.26	52.26
0.408	47.00	24.00	46.50	22.00	57.68	47.68
0.579	42.50	•	40.20	•	56.00	46.00
1.145	34.20	•	34.20	•	56.00	46.00
6.781	•	•	36.50	•	60.00	50.00
7.766	37.40	•	•	•	60.00	50.00
20.041	46.30	46.30	43.50	43.40	60.00	50.00
22.045	47.60	47.60	44.20	44.20	60.00	50.00
24.049	46.20	46.10	42.50	42.30	60.00	50.00
30.000	•	•	•	•	60.00	50.00

REMARKS•1. • Undetectable or the Q.P.values is lower than the limits of Ave
2. For Sincho SCP48-151000 Power Adapter
3. For USB mode

2.7 PHOTOS OF CONDUCTION TEST

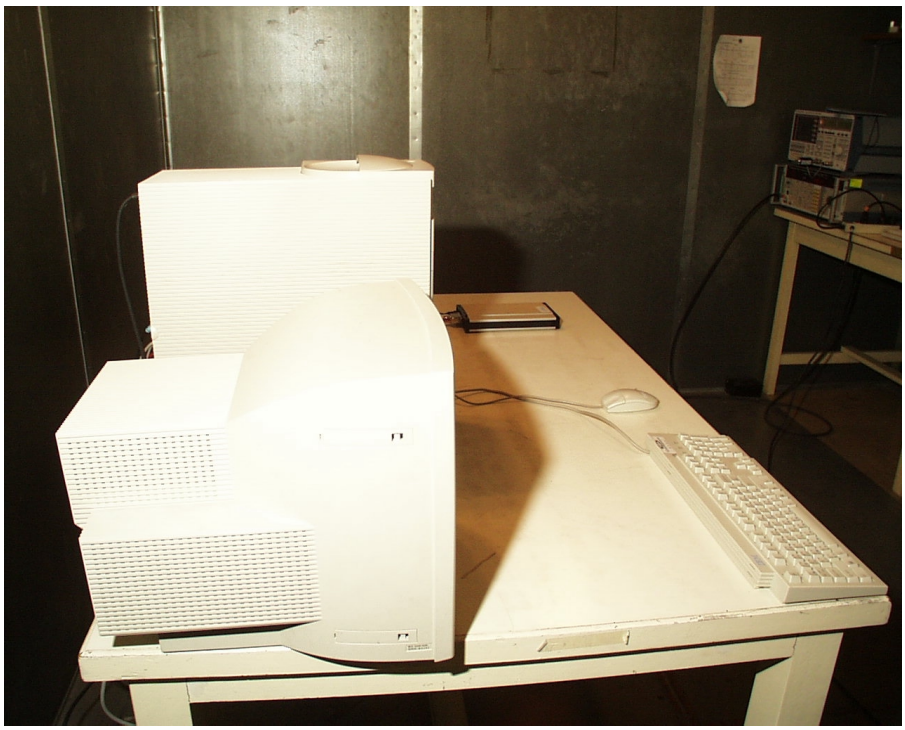
(1) For EPP mode



Comp.•Compeye Corporation Model•DP66V

2.7 PHOTOS OF CONDUCTION TEST

(2) For USB mode



Comp.•Compeye Corporation Model•DP66V

3. RADIATED EMISSION TEST

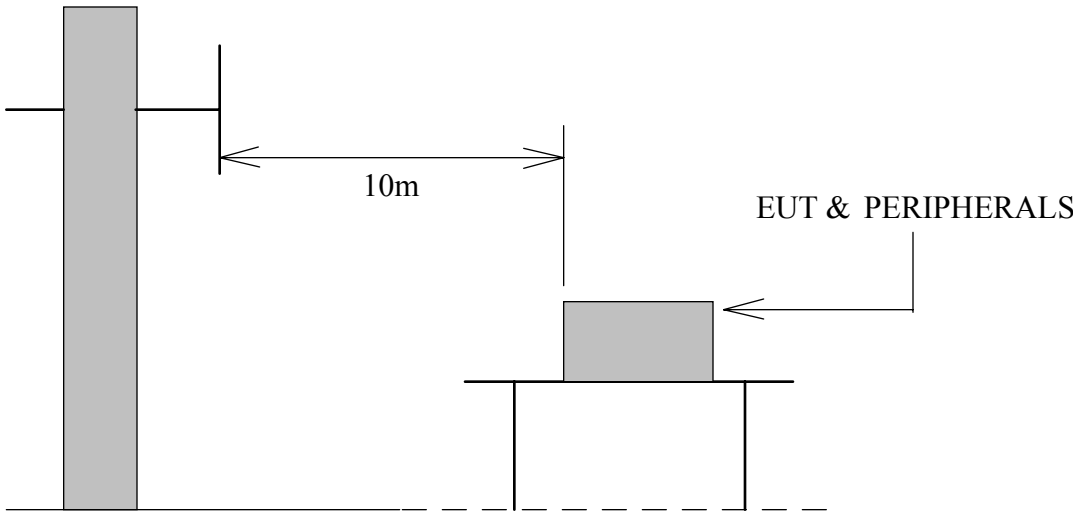
3.1 TEST EQUIPMENTS

The following test equipments are utilized in making the measurements contained in this report.

MANUFACTURER OR TYPE	MODEL NO	SERIAL NO	DATE OF CALIBRATION	CALIBRA -TION PERIOD	REMARK
CHASE BI-LOG ANTENNA	CBL6112B	2562	MAY.01, 1999	1 Year	FINAL
CHASE BI-LOG ANTENNA	CBL6112B	2562	MAY.01, 1999	1 Year	FINAL
R/S TEST RECEIVER	ESMI	842088/005 841978/008	JUL.29, 1999	1 Year	FINAL
OPEN SITE	----------	No.1	JUN. 29, 1999	1 Year	FINAL
N TYPE COAXIAL CABLE	CHA9525	015	JUL. 06, 1999	1 Year	FINAL

3.2 TEST SETUP

The diagram below shows the test setup which is utilized to make these measurements.



Antenna Elevation Variable

3.3 RADIATION LIMIT

All emanation from a class B computing device or system , including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below•

FREQUENCY (MHz)	DISTANCE (METERS)	FIELD STRENGTHS(dB•V/m)	
		CLASS A	CLASS B
30•230	10	40	30
230•1000	10	47	37

Note•(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 closest point of any part of the device or system.

3.4 TEST PROCEDURE

The devices under test were placed on a rotatable table top 0.8 meter above ground. The table was rotated 360 degrees to determine the position of the highest radiation. EUT is set 10 meters from the interference receiving antenna which is mounted on the top of a variable height mast. The antenna height is varied between one meter and four meters above ground to find the maximum value of the field strength Both horizontal polarization and vertical polarization of the antenna are set to make the measurement. The bandwidth setting on the E.M.I. meter (R/S TEST RECEIVER ESMI) is 120 KHz. The levels are quasi peak value readings. The frequency spectrum from 30MHz to 1000MHz was investigated.

3.5 UNCERTAINTY OF RADIATED EMISSION

The uncertainty of radiated emission is ±2.72dB.

3.6 RADIATED RF NOISE MEASUREMENT

The frequency spectrum from 30 MHz to 1000 MHz was investigated. All emissions not reported below are more than 20 dB below the prescribed limits.
All readings are quasi-peak values.

Temperature•23• Humidity•81•RH

FREQ-UENCY (MHz)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	METER READING AT10m (dB£V)		LIMITS (dB£V/m)	EMISSION LEVEL AT10m (dB£V/m)	
			HORIZON-TAL	VERTICAL		HORIZON-TAL	VERTICAL
30.00	18.02	1.06	¡ –	¡ –	30.00	¡ –	¡ –
80.14	8.05	1.69	8.36	9.34	30.00	18.10	19.08
112.20	11.98	1.93	7.24	4.44	30.00	21.15	18.35
192.37	9.51	2.58	8.08	¡ –	30.00	20.17	¡ –
200.38	9.62	2.63	6.68	4.02	30.00	18.93	16.27
256.49	12.62	3.01	5.98	2.20	37.00	21.61	17.83
272.54	12.88	3.12	8.92	6.12	37.00	24.92	22.12
336.66	14.25	3.52	4.86	1.22	37.00	22.63	18.99
348.69	14.55	3.59	6.54	5.28	37.00	24.68	23.42
368.73	15.05	3.71	7.66	3.74	37.00	26.42	22.50
384.76	15.45	3.81	4.72	2.62	37.00	23.98	21.88
400.80	15.84	3.90	15.50	11.58	37.00	35.24	31.32
432.86	16.36	4.06	10.32	5.00	37.00	30.74	25.42
464.92	16.87	4.22	7.24	4.44	37.00	28.33	25.53
496.99	17.38	4.38	6.54	2.48	37.00	28.30	24.24
529.06	17.75	4.55	7.10	1.36	37.00	29.40	23.66
561.12	18.11	4.71	6.40	1.22	37.00	29.22	24.04
1000.00	21.18	6.80	¡ –	¡ –	37.00	¡ –	¡ –

REMARKS•1. •Undetectable

2. Emission level (dB•V/m) =Antenna Factor (dB/m) + Cable loss (dB) + Meter Reading (dB•V).
3. For Sincho SCP48-151000 Power Adapter
4. For EPP mode
5. The test data marked in gray background means the EUT emission data is located in the margin uncertainty range of emission limits.

3.6 RADIATED RF NOISE MEASUREMENT

The frequency spectrum from 30 MHz to 1000 MHz was investigated. All emissions not reported below are more than 20 dB below the prescribed limits.
All readings are quasi-peak values.

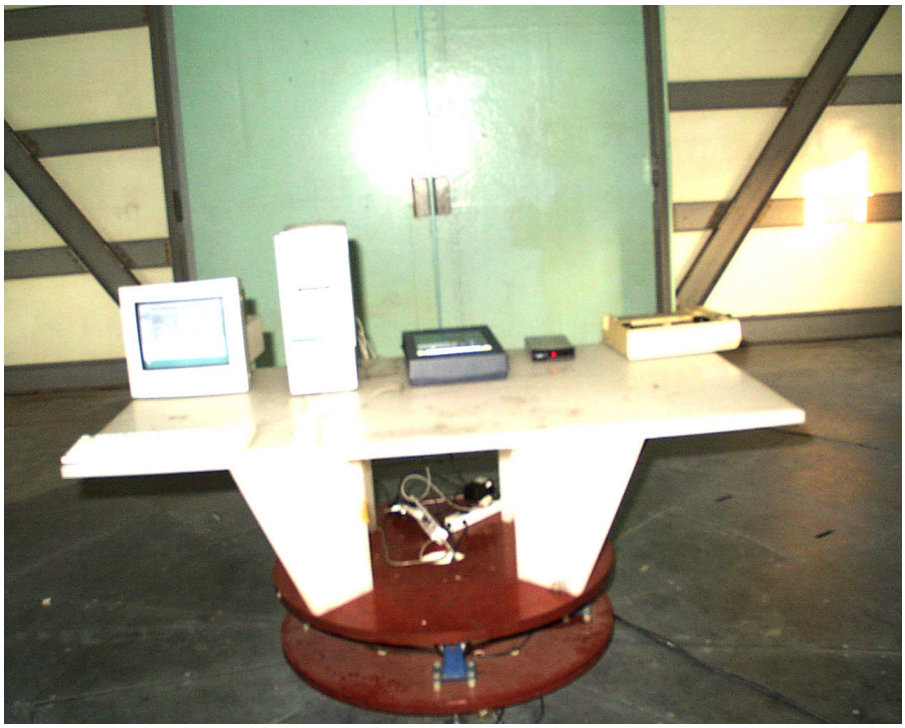
Temperature•23• Humidity•81•RH

FREQ-UENCY (MHz)	ANTENNA FACTOR (dB/m)	CABLE LOSS (dB)	METER READING AT10m(dB£ ¶V)		LIMITS (dB£ ¶V/m)	EMISSION LEVEL AT10m(dB£ ¶V/m)	
			HORIZON-TAL	VERTICAL		HORIZON-TAL	VERTICAL
30.00	18.02	1.06	¡ –	¡ –	30.00	¡ –	¡ –
80.14	8.05	1.69	5.56	8.64	30.00	15.30	18.38
119.97	12.21	2.01	14.38	14.10	30.00	28.60	28.32
140.26	11.38	2.21	7.10	8.36	30.00	20.69	21.95
179.98	9.36	2.50	7.52	5.14	30.00	19.38	17.00
192.37	9.51	2.58	8.22	4.72	30.00	20.31	16.81
199.93	9.60	2.63	11.86	9.76	30.00	24.09	21.99
256.49	12.62	3.01	6.54	4.16	37.00	22.17	19.79
272.54	12.88	3.12	8.50	6.26	37.00	24.50	22.26
348.69	14.55	3.59	8.08	5.84	37.00	26.22	23.98
368.73	15.05	3.71	5.42	2.62	37.00	24.18	21.38
380.74	15.35	3.78	9.34	4.86	37.00	28.47	23.99
384.76	15.45	3.81	7.38	3.74	37.00	26.64	23.00
400.80	15.84	3.90	13.26	8.22	37.00	33.00	27.96
432.86	16.36	4.06	11.58	4.30	37.00	32.00	24.72
464.92	16.87	4.22	5.00	1.36	37.00	26.09	22.45
496.99	17.38	4.38	5.98	3.60	37.00	27.74	25.36
529.06	17.75	4.55	6.96	4.72	37.00	29.26	27.02
561.12	18.11	4.71	6.68	2.06	37.00	29.50	24.88
657.30	18.70	5.19	6.26	1.78	37.00	30.15	25.67
689.36	18.79	5.35	6.82	3.46	37.00	30.96	27.60
705.39	18.87	5.43	2.76	¡ –	37.00	27.06	¡ –
1000.00	21.18	6.80	¡ –	¡ –	37.00	¡ –	¡ –

REMARKS•1. •Undetectable
2. Emission level (dB•V/m) =Antenna Factor (dB/m) + Cable loss (dB) + Meter Reading (dB•V).
3. For Sincho SCP48-151000 Power Adapter
4. For USB mode
5. The test data marked in gray background means the EUT emission data is located in the margin uncertainty range of emission limits.

3.7 PHOTOS OF OPEN SITE

(1) For EPP mode



3.7 PHOTOS OF OPEN SITE

(1) For EPP mode

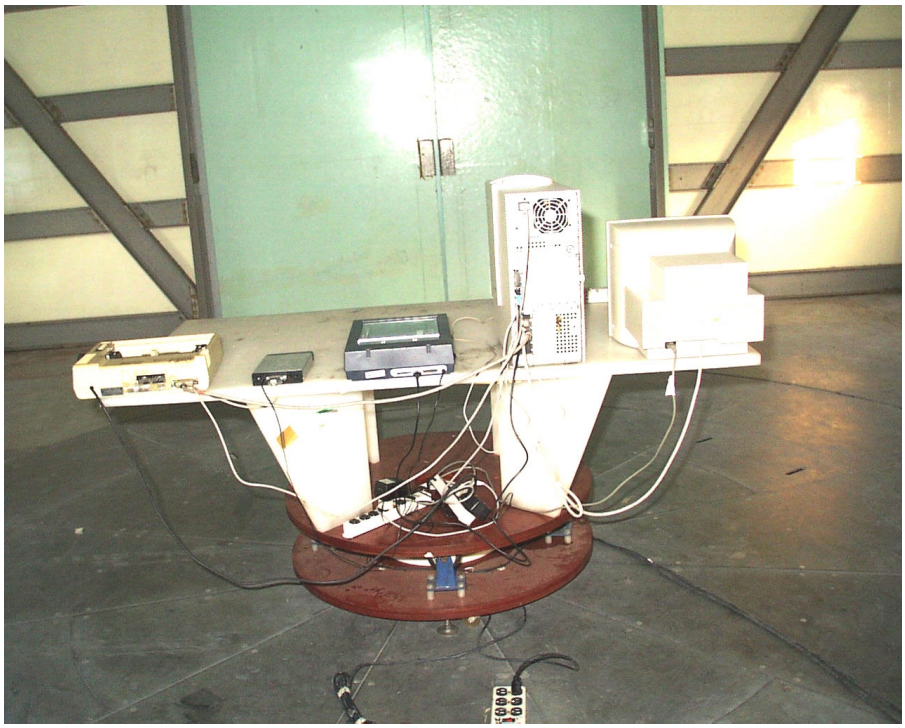
Comp.•Compeye Corporation Model•DP66V

3.7 PHOTOS OF OPEN SITE

(2) For USB mode

3.7 PHOTOS OF OPEN SITE

(2) For USB mode



Comp.•Compeye Corporation Model•DP66V