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VERIFICATION OF COMPLIANCE

Equipment Under Test: Notebook PC

Trade Name: NEC

FCC ID: EUNC2

Model Number: Amber 2.0 (c2 plus alpha) ; LaVie NX ; VersaPro NX ; Avanza NX
NB ; NEC Versa Note ; ZDS Versa Note ; Easy Note

Serial Number: N/A

Applicant: **First International Computer, Inc.**
6F., Formosa Plastics Rear Building 201-24, Tung Hwa N. Rd.,
Taipei, Taiwan, R.O.C.

Manufacturer: **First International Computer, Inc.**
122, Nan-Lin Rd., Taishan Hsiang, 243,
Taipei, Taiwan, R.O.C.

Type of Test: FCC Class B

Measurement Procedure: ANSI C63.4: 1992

File Number: 990400-F

Date of test: Aug. 28~Sep. 1 , 1999

Tested by: Kevin Wang

Deviation: None

Condition of Test Sample: Normal

The above equipment was tested by C&C Laboratory, Co., Ltd. for compliance with the requirements set forth in the FCC Rules and Regulations Part 15, Subpart B and the measurement procedure according to ANSI C63.4, 1992. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.



Charles Wang / Director

SYSTEM DESCRIPTION

EUT Test Program:

1. The CD-ROM driver was exercised to play music.
2. A communication software was loaded and executed to drive LAN, then to communicate with remote side.
3. EUT sends and receives Data from Notebook PC on remote side via an UTP Cable.
4. EMI test program (file name: EMITEST.EXE) was loaded and executed in Windows mode.
5. Data was sent to LCD Panel of EUT and CRT monitor filling the screens with upper case of "H" patterns.
6. Test program sequentially exercised all related I/O's of EUT and sent "H" patterns to all applicable output ports of EUT.
7. Repeat 3 to 6. Test program is self-repeating throughout the test.

PRODUCT INFORMATION

Housing Type:	Plastic		
EUT Power Rating:	+19Vdc, 2.64A from Power Adapter		
AC power during Test:	120Vac/60Hz (To Power Adapter)		
Power Adapter Manufacturer:	DELTA		
Power Adapter Model Number:	ADP-50MB		
Power Adapter Power Rating:	Input: 100-240Vac, 50-60Hz, 1.5A Output: 19Vdc, 2.64A		
AC Power Cord Type:	Unshielded, 1.8m (Detachable) to power adapter		
DC Power Cable Type:	Unshielded, 1.6m (Non-Detachable) At power adapter with a core		
CPU Manufacturer:	Intel	Model:	DIXON 366MHz
OSC/Clock Frequencies :	66MHz		
Hard Drive Manufacturer:	Hitachi (6.4GB)	Model:	DK239A-65
	Hitachi (6.4GB)	Model:	DK228A-65
	IBM (6.4GB)	Model:	DBCA-206480
	Toshiba (6.4GB)	Model:	MK6411MAT
	Fujitsu (6.4GB)	Model:	MHH2064AT
Floppy Drive Manufacturer:	NEC	Model:	FD-1238T
	Mitsubishi	Model:	MF355H-348MN
CD-ROM Drive Manufacture:	TEAC (24X)	Model:	CD-224E-A92
LCD Panel Manufacturer:	NEC	Model:	NL10276BC28-11A
(14.1")			
LCD Panel Manufacturer:	LG	Model:	LP141X5-A
(14.1")		Model:	LP141X5-B1NC
Battery Manufacturer: (Ni-MH)	Panasonic		
LAN Card Manufacturer:	NEC		

I/O PORT:

I/O PORT TYPES	Q'TY	TESTED WITH
1). Parallel Port	1	1
2). Serial Port	1	1
3). Video Port	1	1
4). PS/2 Keyboard Port	1	1
5). Microphone Port	1	1
6). Line-In Port	1	1
7). Earphone	1	1
8). LAN Port	1	1
9). USB Port	1	1
10). Expansion Bus Connector	1	0

SUPPORT EQUIPMENT

Equipment	Model #	Serial #	FCC ID	Trade Name	Data Cable	Power Cord
Monitor	GDM-17SE2T	7139819	AK8GDM17SE2T	SONY	Shielded, 1.8m	Unshielded, 1.8m
Modem	2400	94-364-176277	DK467GSM24	Computer Peripherals	Shielded, 1.8m	Unshielded, 2.0m
Printer	C2642A	TH86K1M14P	B94C2642X	HP	Shielded, 1.8m	AC I/P : Unshielded, 1.0m DC O/P: Unshielded, 2.0m
Keyboard	RT101	8024283	AQ6-MTN4XZ15	Digital	Shielded, 1.8m	N/A
USB Mouse	SL-A 799111	U4-1	E6QMOUSE X31	JOW DAIN	Shielded, 1.4m	N/A
Microphone	AY-125	I4	N/A	Diverse	Unshielded, 1.8m	N/A
Walkman	YX-328	W4	N/A	YING-KO	Shielded, 1.8m	N/A
Earphone	ST-8	A4	N/A	KOKA	Unshielded, 2.0m	N/A
HUB (Remote)	DE-809TC	N/A	N/A	D-Link	Shielded, 10m	N/A
Notebook PC (Remote)	D6923A	TW85000058	Doc	HP	Unshielded, 2m	N/A

Note: All the above equipment/cables were placed in worse case positions to maximize emission signals.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

MEASUREMENT PROCEDURE (PRELIMINARY LINE CONDUCTED EMISSION TEST)

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4: 1992 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per ANSI C63.4: 1992.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4: 1992.
- 4) The EUT received AC power through a Line Impedance Stabilization Network (LISN) which supplied power source of 115VAC/60Hz and was grounded to the ground plane.
- 5) All support equipment received power from a second LISN supplying power of 110VAC/60Hz.
- 6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum analyzer connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to analyzer and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the analyzer.
- 7) Analyzer scanned from 150kHz to 30MHz for emissions in each of the test modes. Analyzer settings were stated on the Measuring Instrument Settings page.
- 8) During the above scans, the emissions were maximized by cable manipulation.
- 9) The following test mode(s) were scanned during the preliminary test:

This EUT have many Device (refer page 5) to make many differ assemblies. After preliminary test for every different assembly found have four worse case, list as below.

Mode(s)

1. CPU: Intel DIXON 366 + NEC 14.1" LCD Panel (NL10276BC28-11A) + NEC FDD (FD-1238T) + CRT Display + Hitachi HDD (DK239A-65) + Power Adapter + CD-ROM + Battery + LAN
 2. CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-A) + NEC FDD (FD-1238T) + CRT Display + IBM HDD (DBCA-206480) + Power Adapter + CD-ROM + Battery
 3. CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN) + CRT Display + Toshiba HDD (MK6411MAT) + Power Adapter + CD-ROM + Battery
 4. CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN) + CRT Display + Fujitsu HDD (MHH2064AT) + Power Adapter + CD-ROM + Battery
- 10) After the preliminary scan, we found the following test mode(s) producing the highest emission level.

Mode(s): 1, 2, 3, 4

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

MEASUREMENT PROCEDURE (FINAL LINE CONDUCTED EMISSION TEST)

- 1) EUT and support equipment was set up on the test bench as per step 10 of the preliminary test.
- 2) A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in peak mode, then the emission signal was re-checked using a Quasi-Peak/A.V. detector.
- 3) The test data of the worst case condition(s) was reported on the Summary Data page.

Data Sample:

Freq. MHz	Q.P. Raw dBuV	Average Raw dBuV	Q.P. Limit dBuV	Average Limit dBuV	Q.P. Margin dB	Average Margin dB	Note
x.xx	43.95	---	56	46	-12.05	---	L 1

Freq.	= Emission frequency in MHz
Raw dBuV	= Uncorrected Analyzer/Receiver reading
Limit dBuV	= Limit stated in standard
Margin dB	= Reading in reference to limit
Note	= Current carrying line of reading
"---"	= The emission level complied with the Average limits, with at least 2 dB margin, so no further recheck.

LINE CONDUCTED EMISSION LIMIT

Frequency	Maximum RF Line Voltage	
	Q.P.	AVERAGE
150kHz-500kHz	66-56dBuV	56-46dBuV
500kHz-5MHz	56dBuV	46dBuV
5MHz-30MHz	60dBuV	50dBuV

Note: The lower limit shall apply at the transition frequency.

MEASUREMENT PROCEDURE (PRELIMINARY RADIATED EMISSION TEST)

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per ANSI C63.4: 1992 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per ANSI C63.4: 1992.
- 3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4: 1992.
- 4) The EUT received 115VAC/60Hz power source from the outlet socket under the turntable. All support equipment received 110VAC/60Hz power from another socket under the turntable.
- 5) The antenna was placed at some given distance away from the EUT as stated in ANSI C63.4: 1992. The antenna connected to the analyzer via a cable and at times a pre-amplifier would be used.
- 6) The analyzer quickly scanned from 30MHz to 1000MHz. Analyzer settings were stated on the Measuring Instrument Settings page. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 7) The following test mode(s) were scanned during the preliminary test:
This EUT have many Device (refer page 5) to make many differ assemblies. After preliminary test for every different assembly found have four worse case, list as below.

Mode(s):

1. CPU: Intel DIXON 366 + NEC 14.1" LCD Panel (NL10276BC28-11A) + NEC FDD (FD-1238T) + CRT Display + Hitachi HDD (DK239A-65) + Power Adapter + CD-ROM + Battery + LAN
2. CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-A) + NEC FDD (FD-1238T) + CRT Display + IBM HDD (DBCA-206480) + Power Adapter + CD-ROM + Battery
3. CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN) + CRT Display + Toshiba HDD (MK6411MAT) + Power Adapter + CD-ROM + Battery
4. CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN) + CRT Display + Fujitsu HDD (MHH2064AT) + Power Adapter + CD-ROM + Battery

- 8) After the preliminary scan, we found the following test mode(s) producing the highest emission level.

Mode(s): 1, 2, 3, 4

Then, the EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for reference of final testing.

MEASUREMENT PROCEDURE (FINAL RAIDATED EMISSION TEST)

- 1) EUT and support equipment were set up on the turntable as per step 8 of the preliminary test.
- 2) The analyzer scanned from 30MHz to 2000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 3) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit , and only Q.P. reading will record in this report.
- 4) The test data of the worst case condition(s) was reported on the Summary Data page.

Data Sample:

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
xx.xx	14.0	11.2	26.2	30	-3.8

Freq.

= Emission frequency in MHz

Raw Data (dB)

= Uncorrected Analyzer / Receiver reading

Corr. Factor (dBuV)

= Correction factors of antenna factor and cable loss

Emiss. Level

= Raw reading converted to dBuV and CF added

Limit dBuV/m

= Limit stated in standard

Margin dB

= Reading in reference to limit

RADIATED EMISSION LIMIT

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBu V/m)		
		Q.P.	AVERAGE	PEAK
30-230	10	30	/	/
230-1000	10	37	/	/
Above 1000	3	/	53.9	73.9

Note: The lower limit shall apply at the transition frequency.

SUMMARY DATA

(LINE CONDUCTED TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 4**Tested by:** Kevin Wang

Test Mode: CPU: Intel DIXON 366 + NEC 14.1" LCD Panel (NL10276BC28-11A) + NEC FDD (FD-1238T) + CRT Display + Hitachi HDD (DK239A-65) + Power Adapter + CD-ROM + Battery + LAN

Test Results: Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

				L1		L2	
				dBm		dBm	
				dBm		dBm	
0.195	45.2	---	63.8	53.8	-18.6	---	L1
0.260	39.7	---	61.4	51.4	-21.7	---	L1
0.330	35.4	---	59.4	49.4	-24.0	---	L1
0.460	33.4	---	56.6	46.6	-23.2	---	L1
3.135	31.6	---	56.0	46.0	-24.4	---	L1
3.985	34.1	---	56.0	46.0	-21.9	---	L1
0.195	42.9	---	63.8	53.8	-20.9	---	L2
0.260	38.7	---	61.4	51.4	-22.7	---	L2
0.325	35.2	---	59.5	49.5	-24.3	---	L2
0.460	34.3	---	56.6	46.6	-22.3	---	L2
4.375	31.9	---	56.0	46.0	-24.1	---	L2
4.885	32.0	---	56.0	46.0	-24.0	---	L2

L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

****NOTE:** "—" denotes the emission level complied with the Average limit, with at least 2dB margin, so no further re-check .

C&C Lab. Conduction Test Site 4

CISPR 22 Class B

EUT: C2 PLUS ALPHA

Manuf: FIC

Op Cond: MODE 1

Operator: KEVIN

Test Spec: LISN=L

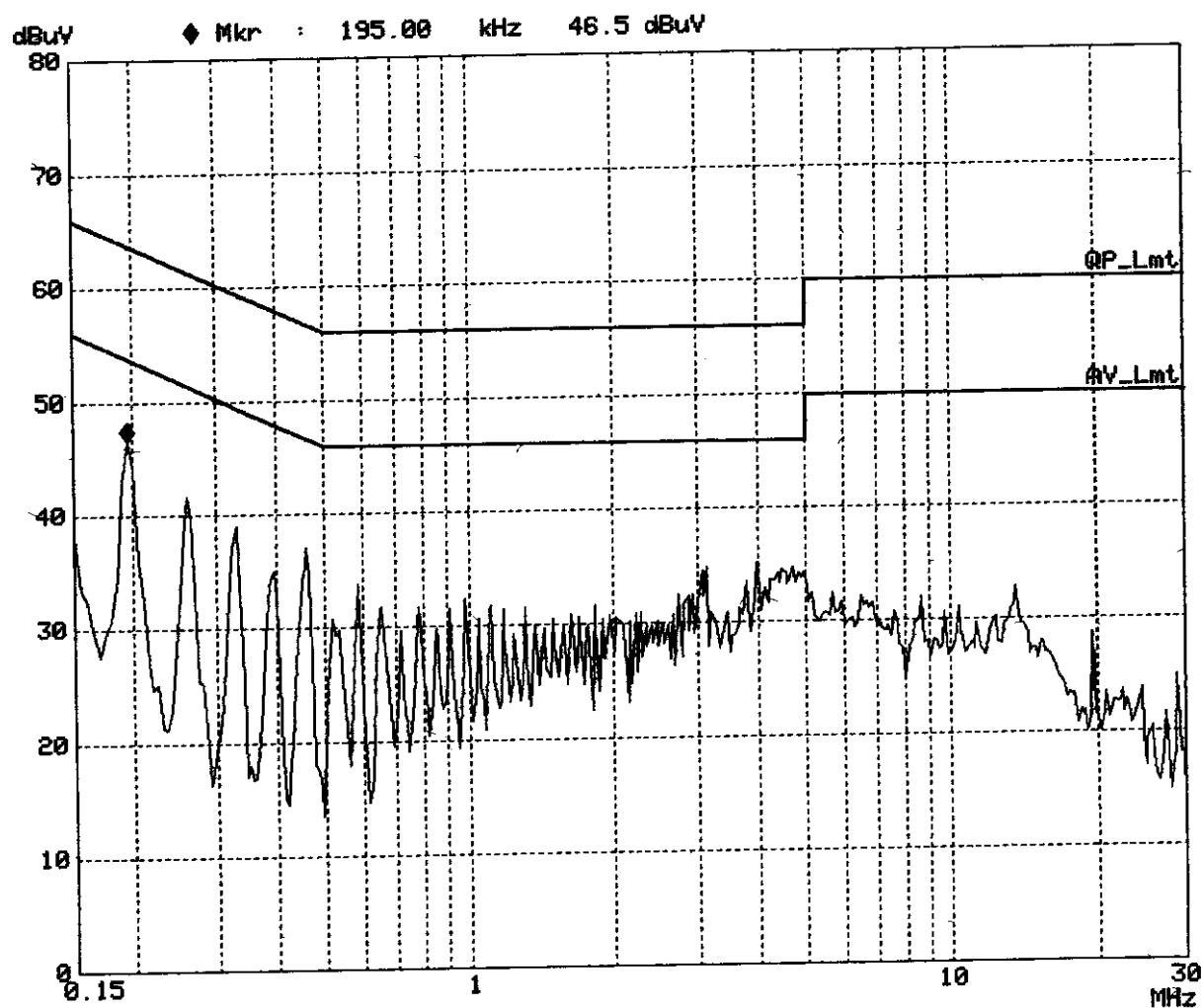
Comment: FCC

File name: CISPR22B.SPC

Date: 28. Aug 99 14:01

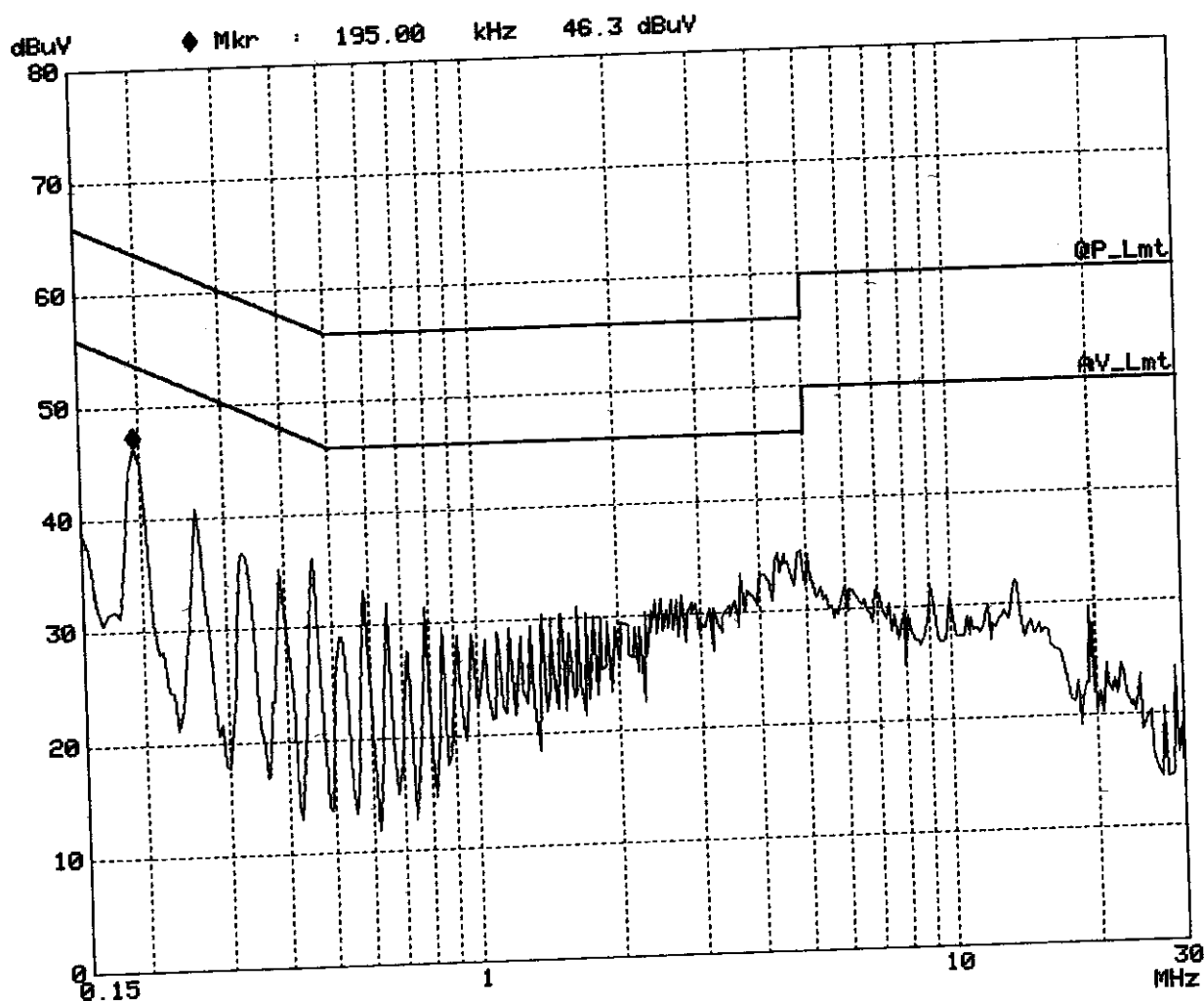
Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp	
150k	30M	5k	9k	PK	20ms	0dBLN OFF	



C&C Lab. Conduction Test Site 4
 CISPR 22 Class B
 EUT: C2 PLUS ALPHA
 Manuf: FIC
 Op Cond: MODE 1
 Operator: KEVIN
 Test Spec: LISN=N
 Comment: FCC
 File name: CISPR22B.SPC
 Date: 28. Aug 99 14:09

Scan Settings (1 Range)			Receiver Settings				
----- Frequencies -----			-----				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	0dBLN	OFF



SUMMARY DATA

(LINE CONDUCTED TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 4**Tested by:** Kevin Wang

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-A) + NEC FDD (FD-1238T)
+ CRT Display + IBM HDD (DBCA-206480) + Power Adapter + CD-ROM + Battery

Test Results: Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

						AVG	NOTE
0.195	43.9	---	63.8	53.8	-19.9	---	L1
0.260	38.7	---	61.4	51.4	-22.7	---	L1
0.330	36.2	---	59.4	49.4	-23.2	---	L1
0.455	34.9	---	56.7	46.7	-21.8	---	L1
4.245	32.8	---	56.0	46.0	-23.2	---	L1
4.510	34.5	---	56.0	46.0	-21.5	---	L1
0.195	47.8	---	63.8	53.8	-16.0	---	L2
0.260	41.0	---	61.4	51.4	-20.4	---	L2
0.325	37.8	---	59.5	49.5	-21.7	---	L2
3.065	34.1	---	56.0	46.0	-21.9	---	L2
4.445	35.8	---	56.0	46.0	-20.2	---	L2
4.705	36.7	---	56.0	46.0	-19.3	---	L2

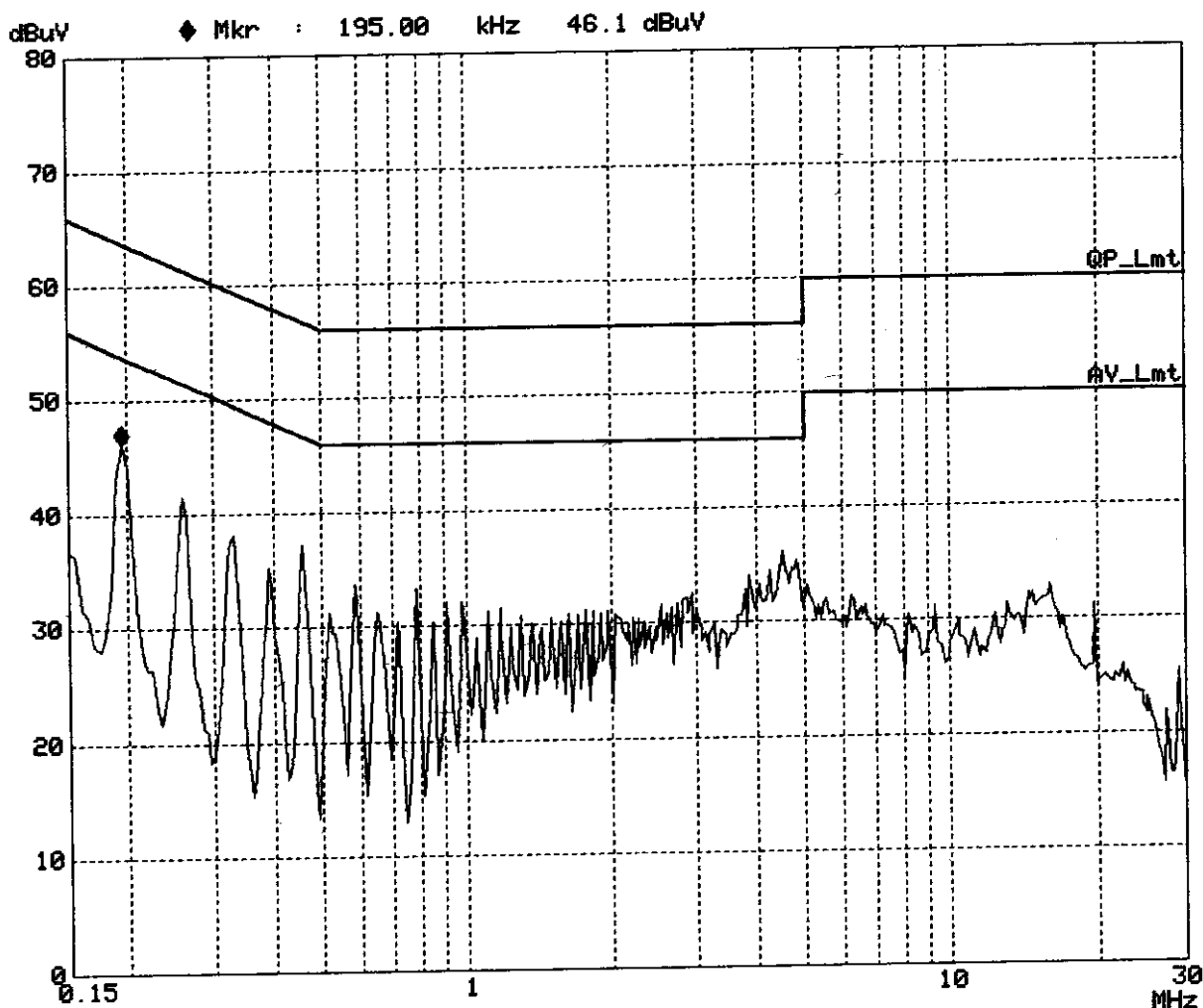
L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

****NOTE:** "—" denotes the emission level complied with the Average limit, with at least 2dB margin, so no further re-check .

C&C Lab. Conduction Test Site 4
CISPR 22 Class B
EUT: C2 PLUS ALPHA
Manuf: FIC
Op Cond: MODE 2
Operator: KEVIN
Test Spec: LISN=L
Comment: FCC
File name: CISPR22B.SPC
Date: 28. Aug 99 14:16

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	0dBLN	OFF

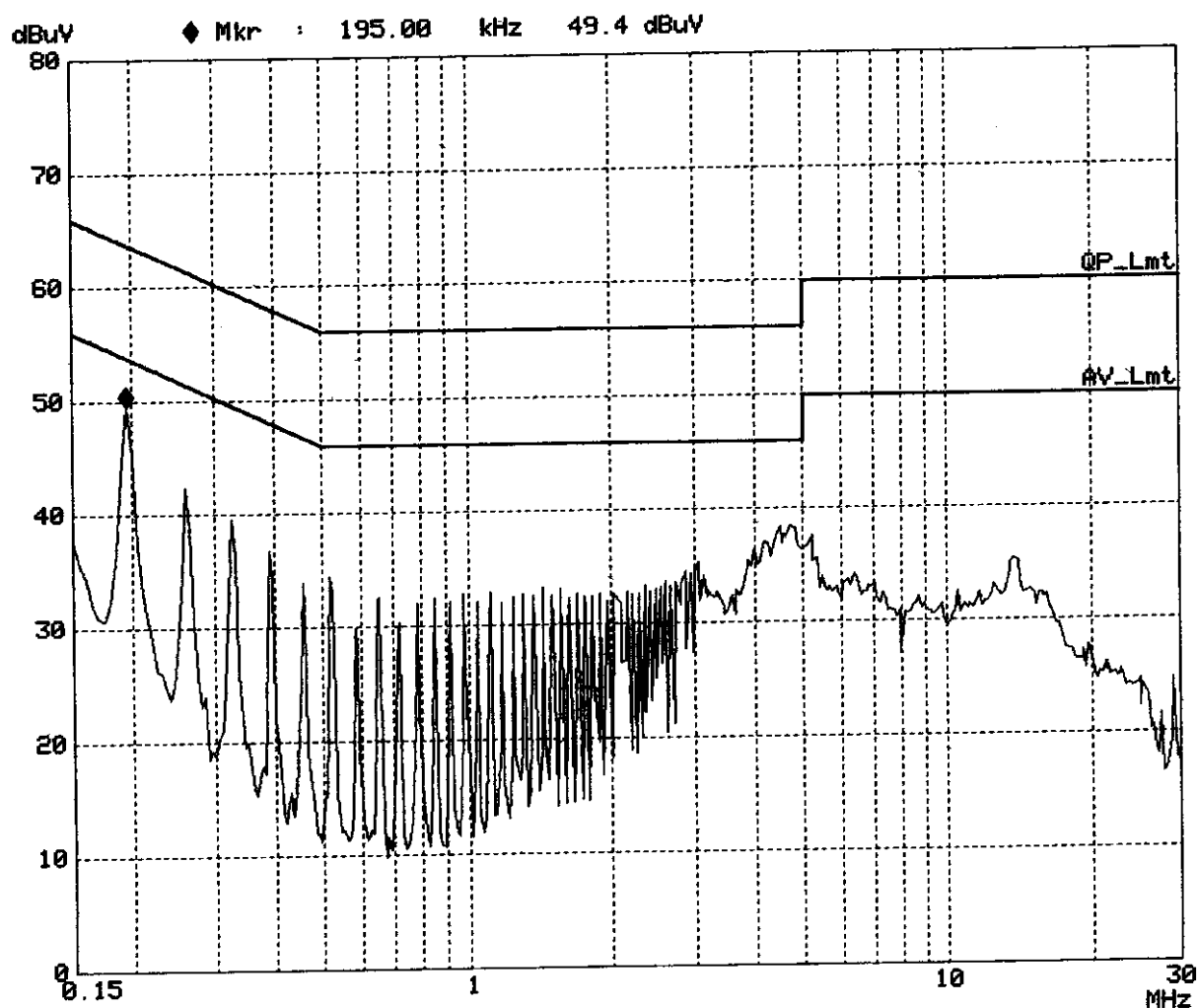


C&C Lab. Conduction Test Site 4
CISPR 22 Class B

EUT: C2 PLUS ALPHA
Manuf: FIC
Op Cond: MODE 2
Operator: KEVIN
Test Spec: LISN=N
Comment: FCC
File name: CISPR22B.SPC
Date: 28. Aug 99 14:25

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	0dBLN	OFF



SUMMARY DATA

(LINE CONDUCTED TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 4**Tested by:** Kevin Wang

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC)+ Mitsubishi FDD (MF355H-348MN) + CRT Display +Toshiba HDD (MK6411MAT) + Power Adapter + CD-ROM + Battery

Test Results: Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

0.195	43.2	---	63.8	53.8	-20.6	---	L1
0.260	38.1	---	61.4	51.4	-23.3	---	L1
0.330	36.2	---	59.4	49.4	-23.2	---	L1
0.650	33.2	---	56.0	46.0	-22.8	---	L1
4.415	32.9	---	56.0	46.0	-23.1	---	L1
4.685	32.7	---	56.0	46.0	-23.3	---	L1
0.195	43.1	---	63.8	53.8	-20.7	---	L2
0.260	38.2	---	61.4	51.4	-23.2	---	L2
0.330	35.2	---	59.4	49.4	-24.2	---	L2
0.460	34.4	---	56.6	46.6	-22.2	---	L2
4.440	33.9	---	56.0	46.0	-22.1	---	L2
4.670	33.8	---	56.0	46.0	-22.2	---	L2

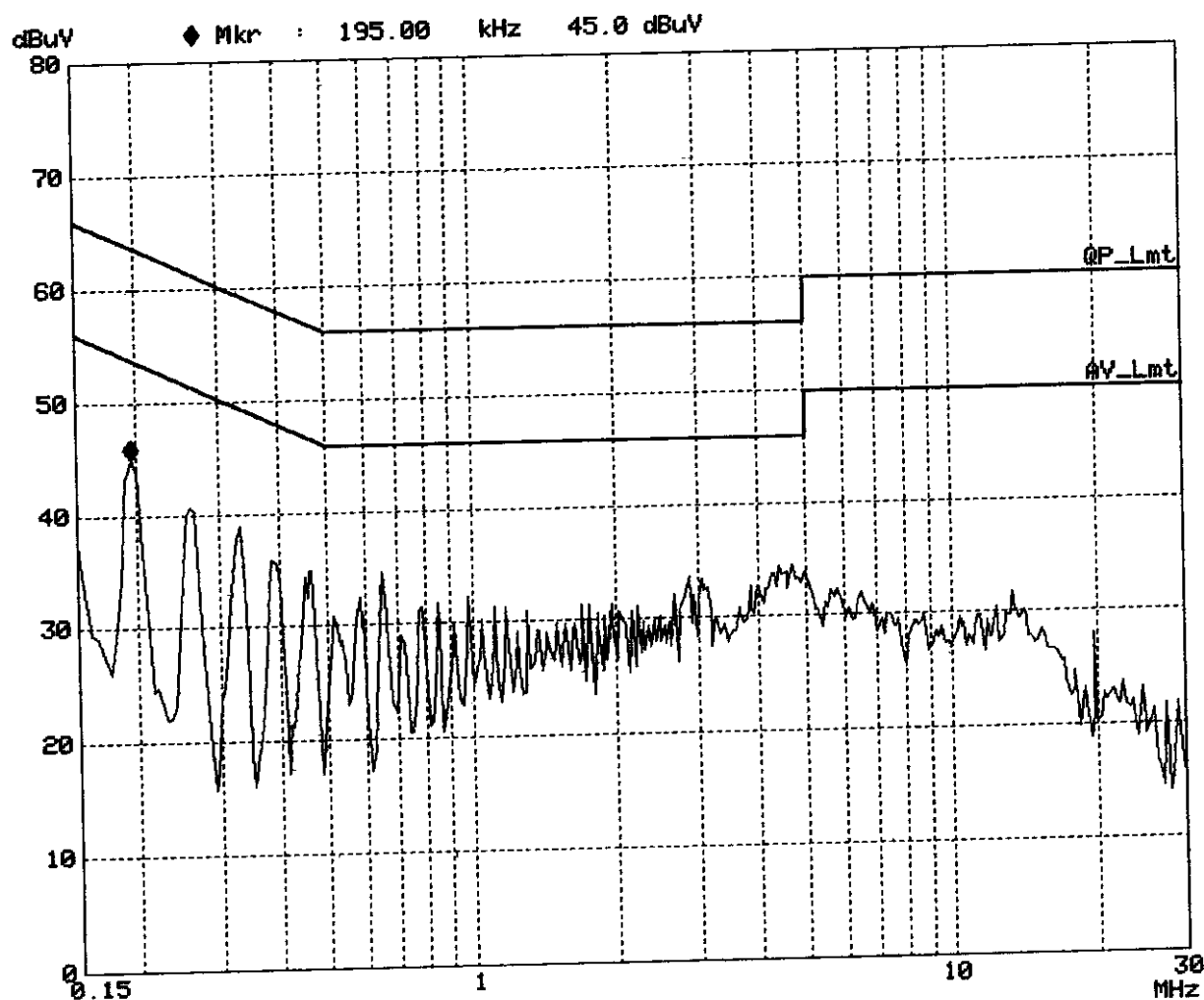
L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

****NOTE:** "—" denotes the emission level complied with the Average limit, with at least 2dB margin, so no further re-check .

C&C Lab. Conduction Test Site 4
CISPR 22 Class B
EUT: C2 PLUS ALPHA
Manuf: FIC
Op Cond: MODE 3
Operator: KEVIN
Test Spec: LISN=L
Comment: FCC
File name: CISPR22B.SPC
Date: 28. Aug 99 14:32

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	0dBLN	OFF



C&C Lab. Conduction Test Site 4

CISPR 22 Class B

EUT: C2 PLUS ALPHA

Manuf: FIC

Op Cond: MODE 3

Operator: KEVIN

Test Spec: LISN=N

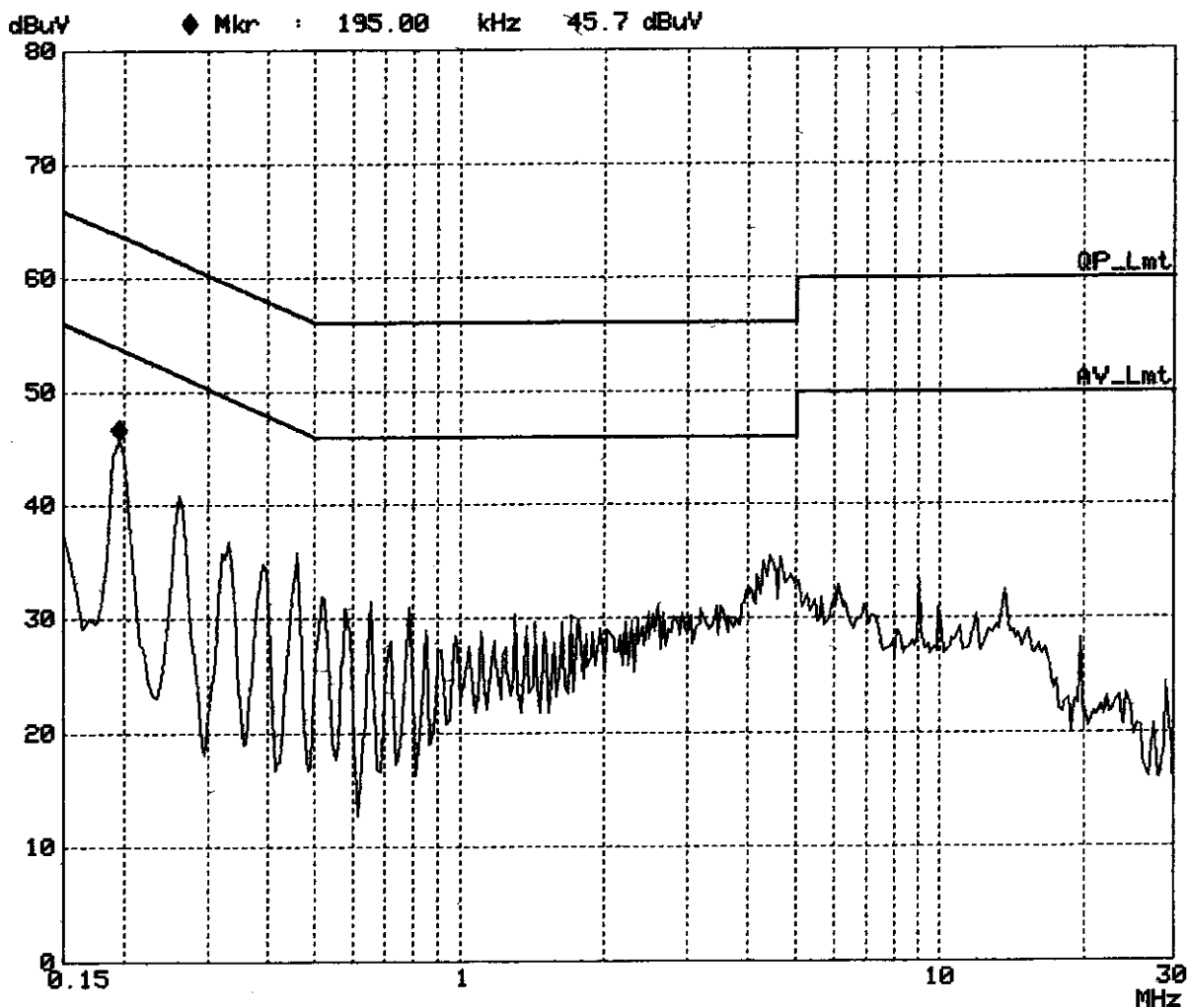
Comment: FCC

File name: CISPR22B.SPC

Date: 28. Aug 99 14:40

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	0dBLN	OFF



SUMMARY DATA

(LINE CONDUCTED TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 4**Tested by:** Kevin Wang

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN)+ CRT Display + Fujitsu HDD (MHH2064AT) + Power Adapter + CD-ROM + Battery

Test Results: Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Frequency (MHz)	Field Strength (V/m)	Power Density (mW/cm²)	Electric Field (V/m)	Magnetic Field (A/m)	Power Density (mW/cm²)	Electric Field (V/m)	Notes
0.195	43.2	---	63.8	53.8	-20.6	---	L1
0.260	39.2	---	61.4	51.4	-22.2	---	L1
0.330	35.8	---	59.4	49.4	-23.6	---	L1
0.460	34.7	---	56.6	46.6	-21.9	---	L1
4.305	35.1	---	56.0	46.0	-20.9	---	L1
4.945	33.9	---	56.0	46.0	-22.1	---	L1
0.195	43.4	---	63.8	53.8	-20.4	---	L2
0.260	37.9	---	61.4	51.4	-23.5	---	L2
0.330	35.4	---	59.4	49.4	-24.0	---	L2
0.460	33.1	---	56.6	46.6	-23.5	---	L2
4.240	33.4	---	56.0	46.0	-22.6	---	L2
4.615	34.9	---	56.0	46.0	-21.1	---	L2

L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

****NOTE:** "—" denotes the emission level complied with the Average limit, with at least 2dB margin, so no further re-check.

C&C Lab. Conduction Test Site 4

CISPR 22 Class B

EUT: C2 PLUS ALPHA

Manuf: FIC

Op Cond: MODE 4

Operator: KEVIN

Test Spec: LISN=L

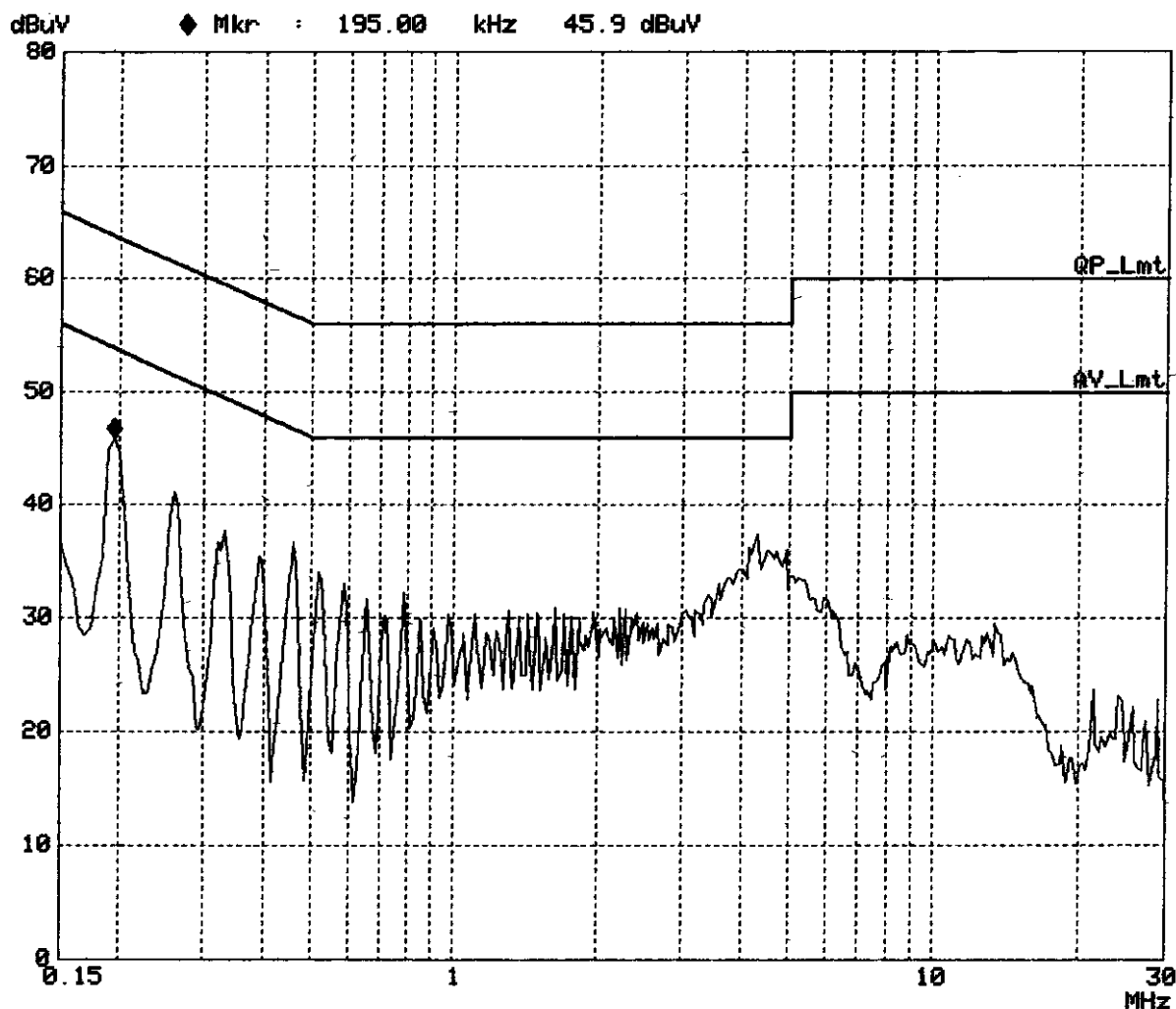
Comment: FCC

File name: CISPR22B.SPC

Date: 28. Aug 99 14:47

Scan Settings (1 Range)

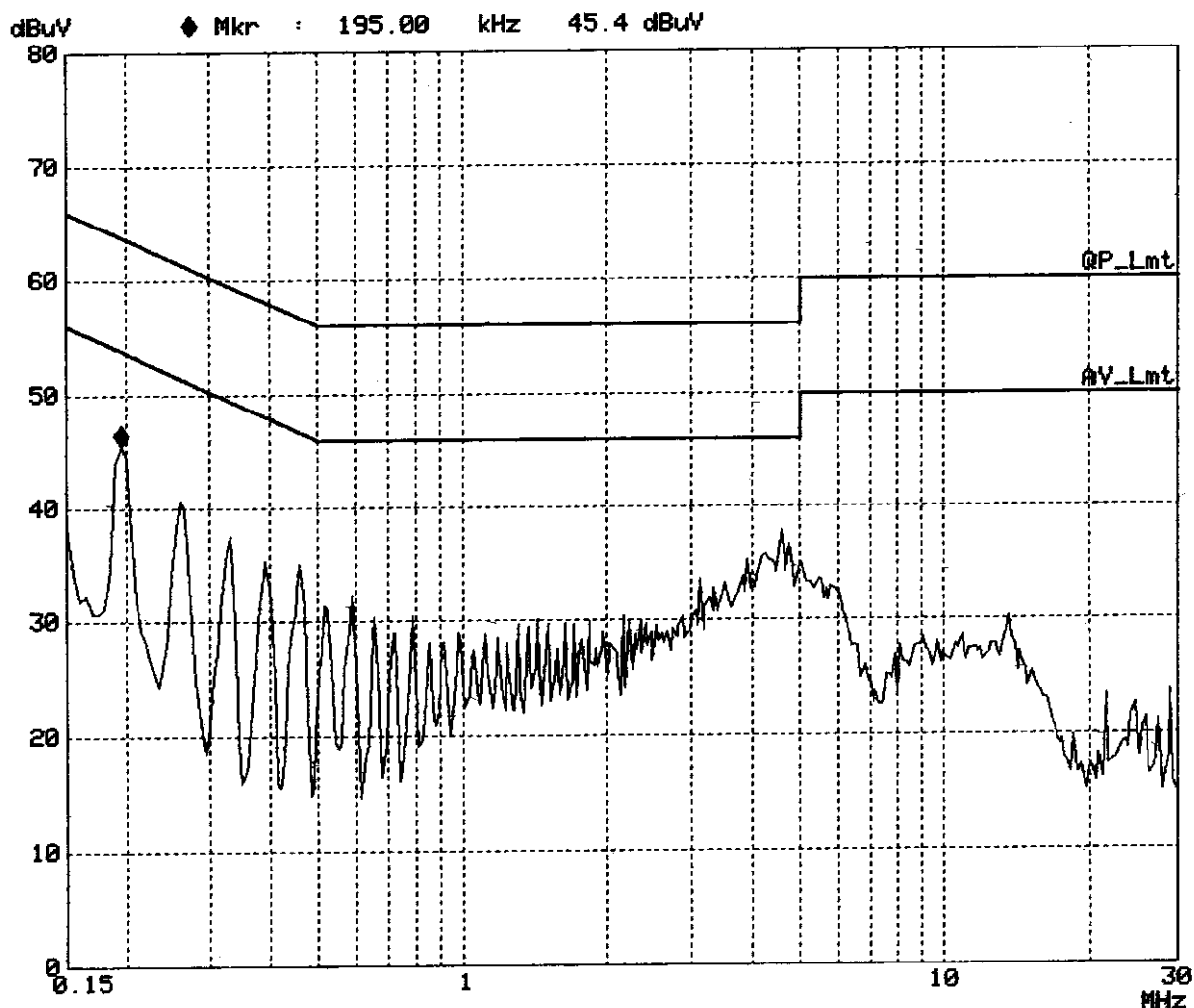
Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	0dBLN	OFF



C&C Lab. Conduction Test Site 4
CISPR 22 Class B
EUT: C2 PLUS ALPHA
Manuf: FIC
Op Cond: MODE 4
Operator: KEVIN
Test Spec: LISN=N
Comment: FCC
File name: CISPR22B.SPC
Date: 28. Aug 99 14:52

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	30M	5k	9k	PK	20ms	0dBLN	OFF



SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 3**Tested by:** Kevin Wang**Polar:** Vertical -- 10m

Test Mode: CPU: Intel DIXON 366 + NEC 14.1" LCD Panel (NL10276BC28-11A) + NEC FDD (FD-1238T) + CRT Display + Hitachi HDD (DK239A-65) + Power Adapter + CD-ROM + Battery + LAN

Detector Function: Quasi-Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
118.49	12.9	14.1	27.0	30.0	-3.0
140.23	11.9	14.8	26.7	30.0	-3.3
165.85	13.8	13.4	27.2	30.0	-2.8
183.23	13.5	13.0	26.5	30.0	-3.5
335.10	13.9	19.8	33.7	37.0	-3.3
403.30	11.6	22.0	33.6	37.0	-3.4

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 3**Tested by:** Kevin Wang**Polar:** Horizontal -- 10m

Test Mode: CPU: Intel DIXON 366 + NEC 14.1" LCD Panel (NL10276BC28-11A) + NEC FDD (FD-1238T) + CRT Display + Hitachi HDD (DK239A-65) + Power Adapter + CD-ROM + Battery + LAN

Detector Function: Quasi-Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
38.20	10.6	15.8	26.4	30.0	-3.6
134.52	11.9	14.7	26.6	30.0	-3.4
140.25	11.9	14.6	26.5	30.0	-3.5
179.62	12.9	12.9	25.8	30.0	-4.2
332.30	14.9	19.4	34.3	37.0	-2.7
399.50	11.5	21.8	33.3	37.0	-3.7

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** 3 meter chamber**Tested by:** Kevin Wang**Polar:** Vertical ---3m

Test Mode: CPU: Intel DIXON 366 + NEC 14.1" LCD Panel (NL10276BC28-11A) + NEC FDD (FD-1238T) + CRT Display + Hitachi HDD (DK239A-65) + Power Adapter + CD-ROM + Battery + LAN

Detector Function: Average/Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
1000.00	14.4	25.9	40.3 (Av)	53.9	-13.6
1450.00	12.2	28.0	40.2 (Pk)	73.9	-33.7
1551.00	12.6	28.5	41.1 (Pk)	73.9	-32.8

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** 3 meter chamber**Tested by:** Kevin Wang**Polar:** Horizontal ---3m

Test Mode: CPU: Intel DIXON 366 + NEC 14.1" LCD Panel (NL10276BC28-11A) + NEC FDD (FD-1238T) + CRT Display + Hitachi HDD (DK239A-65) + Power Adapter + CD-ROM + Battery + LAN

Detector Function: Average/Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
1063.00	12.7	26.2	38.9 (Pk)	73.9	-35.0
1124.00	13.9	26.5	40.4 (Pk)	73.9	-33.5
1229.00	11.9	27.0	38.9 (Pk)	73.9	-35.0

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 3**Tested by:** Kevin Wang**Polar:** Vertical -- 10m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-A) + NEC FDD (FD-1238T)
+ CRT Display + IBM HDD (DBCA-206480) + Power Adapter + CD-ROM + Battery

Detector Function: Quasi-Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
133.53	12.0	14.6	26.6	30.0	-3.4
183.26	12.7	12.9	25.6	30.0	-4.4
216.36	13.5	13.7	27.2	30.0	-2.8
226.85	10.9	14.5	25.4	30.0	-4.6
332.56	14.0	19.7	33.7	37.0	-3.3
904.20	4.5	28.9	33.4	37.0	-3.6

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 3**Tested by:** Kevin Wang**Polar:** Horizontal -- 10m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-A) + NEC FDD (FD-1238T)
+ CRT Display + IBM HDD (DBCA-206480) + Power Adapter + CD-ROM + Battery

Detector Function: Quasi-Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
148.26	10.8	13.9	24.7	30.0	-5.3
172.42	12.5	12.9	25.4	30.0	-4.6
179.82	13.3	12.9	26.2	30.0	-3.8
215.13	10.9	13.6	24.5	30.0	-5.5
240.29	16.6	15.7	32.3	37.0	-4.7
333.15	13.5	19.4	32.9	37.0	-4.1

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** 3 meter chamber**Tested by:** Kevin Wang**Polar:** Vertical ---3m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-A) + NEC FDD (FD-1238T) + CRT Display + IBM HDD (DBCA-206480) + Power Adapter + CD-ROM + Battery

Detector Function: Average/Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
1000.00	14.1	25.9	40.0 (Av)	53.9	-13.9
1459.00	12.3	28.1	40.4 (Pk)	73.9	-33.5
1551.00	11.9	28.5	40.4 (Pk)	73.9	-33.5

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** 3 meter chamber**Tested by:** Kevin Wang**Polar:** Horizontal ---3m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-A) + NEC FDD (FD-1238T) + CRT Display + IBM HDD (DBCA-206480) + Power Adapter + CD-ROM + Battery

Detector Function: Average/Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
1061.00	12.4	26.2	38.6 (Pk)	73.9	-35.3
1124.00	12.4	26.5	38.9 (Pk)	73.9	-35.0
1321.00	14.9	27.4	42.3 (Pk)	73.9	-31.6

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 3**Tested by:** Kevin Wang**Polar:** Vertical -- 10m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC)+ Mitsubishi FDD (MF355H-348MN) + CRT Display +Toshiba HDD (MK6411MAT) + Power Adapter + CD-ROM + Battery

Detector Function: Quasi-Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
113.54	13.2	13.6	26.8	30.0	-3.2
132.57	13.0	14.6	27.6	30.0	-2.4
166.54	13.9	13.4	27.3	30.0	-2.7
183.26	14.5	12.9	27.4	30.0	-2.6
466.28	11.5	22.3	33.8	37.0	-3.2
665.40	8.4	26.0	34.4	37.0	-2.6

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 3**Tested by:** Kevin Wang**Polar:** Horizontal -- 10m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC)+ Mitsubishi FDD (MF355H-348MN) + CRT Display +Toshiba HDD (MK6411MAT) + Power Adapter + CD-ROM + Battery

Detector Function: Quasi-Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
113.50	13.4	14.1	27.5	30.0	-2.5
183.42	14.8	12.6	27.4	30.0	-2.6
194.53	14.8	11.9	26.7	30.0	-3.3
204.25	13.9	12.1	26.0	30.0	-4.0
329.00	15.0	19.3	34.3	37.0	-2.7
517.50	9.8	24.0	33.8	37.0	-3.2

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** 3 meter chamber**Tested by:** Kevin Wang**Polar:** Vertical ---3m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC)+ Mitsubishi FDD (MF355H-348MN) + CRT Display +Toshiba HDD (MK6411MAT) + Power Adapter + CD-ROM + Battery

Detector Function: Average/Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
1000.00	14.0	25.9	39.9 (Av)	53.9	-14.0
1459.00	12.9	28.1	41.0 (Pk)	73.9	-32.9
1551.00	10.9	28.5	39.4 (Pk)	73.9	-34.5

SUMMARY DATA**(RADIATED EMISSION TEST)****Model Number:** C2 PLUS ALPHA**Location:** 3 meter chamber**Tested by:** Kevin Wang**Polar:** Horizontal ---3m**Test Mode:** CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC)+ Mitsubishi FDD (MF355H-348MN) + CRT Display +Toshiba HDD (MK6411MAT) + Power Adapter + CD-ROM + Battery**Detector Function:** Average/Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
1130.00	12.8	26.5	39.3 (Pk)	73.9	-34.6
1193.00	11.9	26.8	38.7 (Pk)	73.9	-35.2
1229.00	12.1	27.0	39.1 (Pk)	73.9	-34.8

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** Site # 3**Tested by:** Kevin Wang**Polar:** Vertical -- 10m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN)+ CRT Display + Fujitsu HDD (MHH2064AT) + Power Adapter + CD-ROM + Battery

Detector Function: Quasi-Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
113.59	13.1	13.6	26.7	30.0	-3.3
183.67	14.5	12.9	27.4	30.0	-2.6
194.53	14.2	12.5	26.7	30.0	-3.3
204.36	13.8	12.6	26.4	30.0	-3.6
331.41	13.2	19.7	32.9	37.0	-4.1
540.10	8.4	24.5	32.9	37.0	-4.1

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA

Location: Site # 3

Tested by: Kevin Wang

Polar: Horizontal -- 10m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN)+ CRT Display + Fujitsu HDD (MHH2064AT) + Power Adapter + CD-ROM + Battery

Detector Function: Quasi-Peak

Test Results: Passed

Temperature: 26°C

Humidity: 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
113.40	12.9	14.1	27.0	30.0	-3.0
183.36	14.2	12.6	26.8	30.0	-3.2
194.25	14.6	11.9	26.5	30.0	-3.5
204.68	13.1	12.2	25.3	30.0	-4.7
332.20	13.4	19.4	32.8	37.0	-4.2
540.30	8.1	24.7	32.8	37.0	-4.2

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** 3 meter chamber**Tested by:** Kevin Wang**Polar:** Vertical ---3m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN)+ CRT Display + Fujitsu HDD (MHH2064AT) + Power Adapter + CD-ROM + Battery

Detector Function: Average/Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
1000.00	13.4	25.9	39.3 (Av)	53.9	-14.6
1459.00	11.8	28.1	39.9 (Pk)	73.9	-34.0
1551.00	12.6	28.5	41.1 (Pk)	73.9	-32.8

SUMMARY DATA

(RADIATED EMISSION TEST)

Model Number: C2 PLUS ALPHA**Location:** 3 meter chamber**Tested by:** Kevin Wang**Polar:** Horizontal ---3m

Test Mode: CPU: Intel DIXON 366 + LG 14.1" LCD Panel (LP141X5-BINC) + Mitsubishi FDD (MF355H-348MN)+ CRT Display + Fujitsu HDD (MHH2064AT) + Power Adapter + CD-ROM + Battery

Detector Function: Average/Peak**Test Results:** Passed**Temperature:** 26°C**Humidity:** 55%RH

(The chart below shows the highest readings taken from the final data)

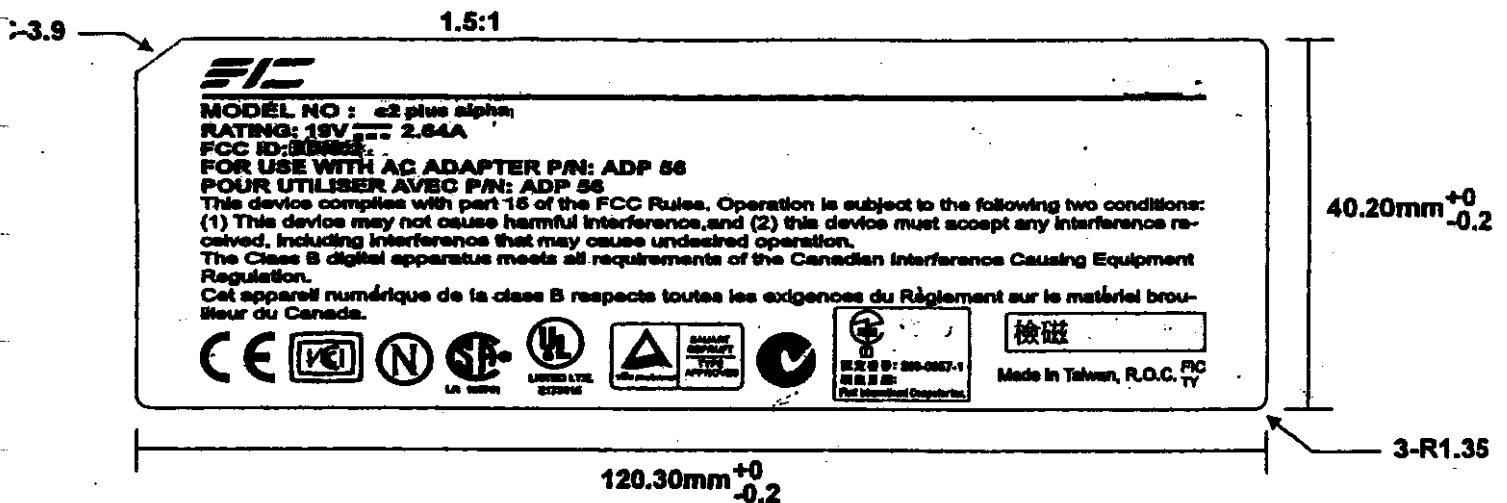
Freq. (MHz)	Raw Data (dB)	Corr. Factor (dBuV)	Emiss. Level (dBuV/m)	Limits	Margin (dB)
1070.00	14.9	26.2	41.1 (Pk)	73.9	-32.8
1129.00	12.8	26.5	39.3 (Pk)	73.9	-34.6
1200.00	11.7	26.9	38.6 (Pk)	73.9	-35.3

APPENDIX 1

LETTER OF AGENT AUTHORIZATION

FCC ID LABEL & FCC ID LOCATION

FCC ID: EUNC2



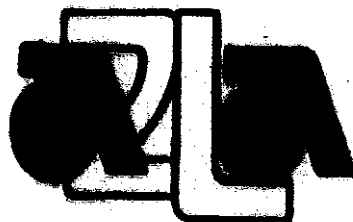
1. LOCATION: BACK SIDE OF EUT.
2. MATERIAL: POLYESTER FILM SILVER MATT LABEL.
COATED: POLYESTER FILM TRANSPARENT LABEL
3. COLOR: BACKGROUND-IVORY, CHARACTER-BLACK
4. SIZE: 12.03cm x 4.02cm

APPENDIX 6

TEST FACILITY

TEST FACILITY

- Location:** No. 15, 14 Line, Chin Twu Chi, Lu Chu Hsiang, Taoyuan, Taiwan, R.O.C.
- Description:** There are two 3/10m open area test sites and two line conducted labs for final test, and one 3/10m open area test site for engineering lab. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 1992 and CISPR 22/EN 55022 requirements.
- Site Filing:** A site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
- Registration also was made with Voluntary Control Council for Interference (VCCI).
- Site Accreditation:** Accredited by NEMKO (Authorization #: ELA 124) for EMC & A2LA (Certificate #: 824.01) for Emission
- Instrument Tolerance:** All measuring equipment is in accord with ANSI C63.4 and CISPR22 requirement that meet industry regulatory agency and accreditation agency requirement.
- Ground Plane:** Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.
- Site #1 and # 3 Line Conducted Test Site:** Vertical ground plane (2.2m x 2.2m)
Horizontal ground plane (2.5m x 2.5m)
- Site #4 Line Conducted Test Site:** At Shielding Room



**THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION**

ACCREDITED LABORATORY

A2LA has accredited

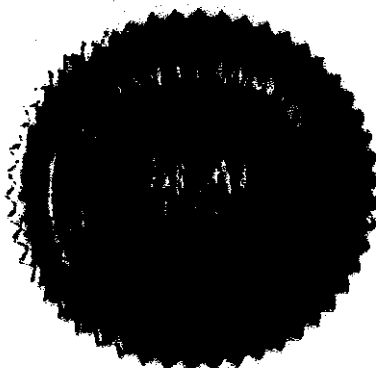
C & C LABORATORY CO., LTD
Taoyuan, Taiwan, R.O.C

for technical competence in the field of

Electrical (EMC) Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC Guide 25-1990 "General Requirements for the Competence of Calibration and Testing Laboratories" (equivalent to relevant requirements of the ISO 9000 series of standards) and any additional program requirements in the identified field of testing.

Presented this 7th day of November, 1997.





President
For the Accreditation Council
Certificate Number 824.01
Valid to January 31, 2000

For tests or types of tests to which this accreditation applies, please refer to the
laboratory's Electrical (EMC) Scope of Accreditation
(REVISED)



American Association for Laboratory Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC GUIDE 25-1990 and EN 45001-1989

C & C LABORATORY CO., LTD
No. 15, 14 Lin, Chin Twu Chi
Lu Chu Hsiang, Taoyuan, TAIWAN, R.O.C.
Charles Wang Phone: 002 886 3 324 5966
Fax: 002 886 3 324 5235

ELECTRICAL (EMC)

Valid to: January 31, 2000

Certificate Number: 0824-01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests:

Electrical Emissions - Enclosure - 3 & 10 Meters; to 6.5 GHz (Sites 1, 3 and 4)
Electrical Emissions - AC Power - 0 - 300 V; 50 - 400 Hz (Sites 1, 3 and 4)
Electrical Immunity - Enclosure - 27 - 80 MHz / 3V/m; 80 MHz - 1 GHz / 10V/m
Electrical Immunity - AC Power, DC Power, Signal & Control
Electrical Fast Transient (EFT)
Electrostatic Discharge (ESD) to 16 kV
Electrical Power Surge
Power Magnetic Field Immunity
Voltage Dips, Shots, Variations

On the following products/equipment:

Computer Components and Peripherals; Networking Components; Wireless Communications Components; Electronic Components; Televisions; Home Appliances

Using the following test methods/specifications/standards:

Code of Federal Regulations (CFR) 47, FCC Part 15 using ANSI C63.4
AS/NZS 3548
BSMI CNS: 13438, 13439, 13783, 13803
CISPR: 11, 14, 22
EN: 50081-1, 50082-1, 55011, 55022, 55014, 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5, 61000-4-6, 61000-4-8, 61000-4-11
VCCI V3
IEC: 801-2, 801-3, 801-4


Revised 03/05/99



**EMC Laboratory
Authorization****Aut. No. : ELA 124**

EMC Laboratory: **C&C Laboratory Taiwan**
No. 28 Wen-Hwa Street, 330 Taoyuan
TAIWAN R.O.C.

Scope of Authorization: The authorization covers the following standards:

EN 50081-1	EN 50082-1
EN 55022	IEC 801-2
EN 60555-2,-3	IEC 801-3
EN 61000-3-2	IEC 801-4
EN 61000-3-3	EN 61000-4-2
EN 61000-4-3	EN 61000-4-4

This is to confirm that the abovementioned EMC Laboratory has been authorized according to the conditions described in Nemko Document ELA 10.

During Nemko's visit to the laboratory on the 08. October. 1997 an assessment was made of your facilities, qualifications and testing practices, and the relevant part of your organization. It was found that the EMC Laboratory is capable of performing tests within the scope mentioned above, accordingly, Nemko will accept your test results as a basis for attesting conformity with these EMC Standards for the products in question.

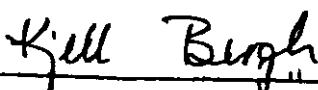
In case of product certification, your test report may be used by the applicant manufacturer, enclosed to his application.

In order to maintain the authorization, the information given in the enclosed ELA-INFOs has to be carefully followed. Nemko is to be promptly notified about any changes in the situation at your laboratory which may affect the basis for this authorization. The authorization may at any time be withdrawn if the conditions are no longer considered to be fulfilled.

The authorization is issued on the conditions that you have signed the "Statement by Authorization", ELA 3A-Form. The Statement of 08 October. 1997 is binding.

Oslo, 20. October. 1997

For Nemko as



Kjell Bergh, Head of EMC Section



中華民國經濟部標準檢驗局

臺北市濟南路一段四號

BUREAU OF STANDARDS, METROLOGY AND INSPECTION

MINISTRY OF ECONOMIC AFFAIRS, REPUBLIC OF CHINA

4, SEC. 1, CHINAN ROAD, TAIPEI, TAIWAN, R. O. C.

Tel: 886-2-23431700 FAX: 886-2-23932324

To: C&C Laboratory Co., Ltd

1 Fl.No.344, Fu Ching St., Taipei, Taiwan,
R.O.C.

IN REPLY REFER TO
87-2-01386

This Designation Document confirms that your subject measurement facility has been validated according to the **ISO/IEC Guide 25-1990** and found to be in compliance with the requirements of "Operation Guidelines of the Approval and Management of Designated EMC Laboratories."

The description of your facility has, therefore, been placed on file and the name of your organization added to the Bureau's list of facilities whose measurement data and test reports will be accepted as a basis for attesting conformity to **CNS13438-1994/ CISPR22-1993**, **CNS13439-1994/ CISPR24-1993** for Information Technology Equipment products and household appliances / etc.

It is located at: <http://www.bsmi.gov.tw>

Please reference the file numbers below in the body of all test reports containing measurements made on the corresponding facility.

For your **EMI Testing Lab**, use reference "**SL2-A1-E-0014**"

Note that this filing must be updated for any changes made to the documentation and / or facility and whenever major modifications to your documentation or major construction or repairs to your facility are completed, re-submission of the related information or the site attenuation characteristics will be required within 2 weeks.

The Designation is valid through January 16, 2001.

Taipei, July 26, 1999

For BSMI, MOEA

Chen Tso-Chen
Director General

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1585 (ext-218)
Facsimile: 301-344-2050

March 13, 1998

IN REPLY REFER TO
31040/SIT
1300F2

C & C Laboratory Co., Ltd.
1st Fl., No. 344, Fu Ching Street
Taipei, Taiwan

Attention: Ceres Lin

Re: Measurement facility located at Taoyuan
(3 and 10 meter site)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is updated monthly and is available on the Laboratory's Public Access Link (PAL) at 301-725-1072, and also on the Internet at the FCC Website www.fcc.gov/oet/info/database/testsite/.

Sincerely,



Thomas W. Phillips
Electronics Engineer
Customer Service Branch

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1585 (ext-218)
Facsimile: 301-344-2050

April 20, 1998

IN REPLY REFER TO
31040/SIT
1300F2

C&C Laboratory Co., Ltd.
1st Fl., No. 344, Fu Ching Street
Taipei, Taiwan

Attention: Charles Wang

Re: Measurement facility located at Taoyuan, Site No. 3
(3 and 10 meter site)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is updated monthly and is available on the Laboratory's Public Access Link (PAL) at 301-725-1072, and also on the Internet at the FCC Website www.fcc.gov/oet/info/database/testsite/.

Sincerely,



Thomas W. Phillips
Electronics Engineer
Customer Service Branch

FEDERAL COMMUNICATIONS COMMISSION
Equipment Authorization Division
7435 Oakland Mills Road
Columbia, MD. 21046

February 01, 1999

Registration Number: 93105

C & C Laboratory Co., Ltd.
1st Fl., No. 344, Fu Ching Street
Taipei
Taiwan, R.O.C.

Attention: Charles Wang

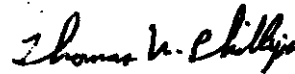
Re: Measurement facility located at Taoyuan, Site No. 4
3 & 10 meters
Date of Listing: February 01, 1999

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that this filing must be updated for any changes made to the facility, and at least every three years from the date of listing the data on file must be certified as current.

If requested, the above mentioned facility has been added to our list of those who perform these measurement services for the public on a fee basis. An up-to-date list of such public test facilities is available on the Internet on the FCC Website at WWW.FCC.GOV, Electronic Filing, OET Equipment Authorization Electronic Filing.

Sincerely,



Thomas W Phillips
Electronics Engineer



MINISTRY OF COMMERCE
Te Manatū Tauhokohoko

ENG 3/9
AJD

22 January 1998

C & C Laboratory Co Ltd
1st Fl
No. 344
Fu Ching Street
Taipei
TAIWAN ROC

Attention: Mr Tony Houng

Dear Sir

LABORATORY APPROVAL

Thank you for your submission of 21 January regarding the approval of your testing laboratory to the Ministry of Commerce's laboratory approval criteria. Thank you for your interest in this matter.

I am pleased to advise that your submission has been successful and your laboratory has been added to the list of Ministry-approved laboratories. Your approved status is valid until 31 December 1998. At this time, the Approved Laboratory scheme will cease operation with the implementation of the new radiocommunications regulations. Test reports from your laboratory will be accepted under the new framework. Please find enclosed a copy of the Ministry's discussion paper, DP10, outlining the proposed compliance process from 1 January 1999.

If you have any further questions on this matter please do not hesitate to contact me.

Yours faithfully

Andrew Dyke
Senior Technical Officer(Regulatory)



CERTIFICATE

Company : C&C Laboratory Co., Ltd.

Facility : C&C Open Area Test Site No.1

(Radiation 3 and 10 meter site)

Address : No.15, 14 Lin, Chin Twu Chi,

Lu Chu Hsiang Taoyuan Shien, Taiwan

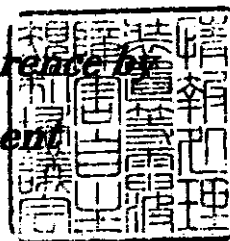
***This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures***

Registration No. : R-393

Date of Registration : July 1, 1999

This Certificate is valid until September 30, 2002

***Voluntary Control Council for Interference by
Information Technology Equipment***





CERTIFICATE

Company : C&C Laboratory Co., Ltd.

Facility : C&C Open Area Test Site No.1

(Conducted Interference Measurement)

Address : No.15, 14 Lin, Chin Twu Chi,

Lu Chu Hsiang Taoyuan Shien, Taiwan

***This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures***

Registration No. : C-402

Date of Registration : July 1, 1999

This Certificate is valid until September 30, 2002

Voluntary Control Council for Interference by

Information Technology Equipment





CERTIFICATE

Facility : C&C Open Area Test Site No.3

(Radiation 3 and 10 meter site)

Company : C&C Laboratory Co., Ltd.

Address : No.15, 14lin, Chin Twu Chi, La Chu Hsiang Taoyuan Shien

***This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures.***

Registration No. : R-725

Date of Registration : May 1, 1998

This Certificate is valid until June 30, 2001

***Voluntary Control Council for Interference
Information Technology Equipment***





CERTIFICATE

Facility: C&C Conducted Interference Test Site No.3
(Conducted Interference Measurement)

Company : C&C Laboratory Co., Ltd.

Address : No.15, 14Lin, Chia Twu Chi, Lu Chu Hsiang Taoyuan Shien

*This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures.*

Registration No. : C-747

Date of Registration : May 1, 1998

This Certificate is valid until June 30, 2001

Voluntary Control Council for Interference

Information Technology Equipment





CERTIFICATE

Company : C&C Laboratory Co., Ltd.

Facility : C&C Open Area Test Site No.4

(Radiation 3 and 10 meter site)

Address : No.15, 14 Lin, Chin Twu Chi, Lu Chu Hsiang Taoyuan Shien, Taiwan

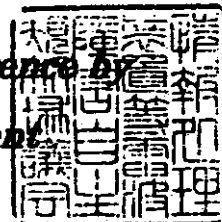
***This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures***

Registration No. : R-879

Date of Registration : March 26, 1999

This Certificate is valid until March 31, 2002

***Voluntary Control Council for Interference by
Information Technology Equipment***





CERTIFICATE

Company : C&C Laboratory Co., Ltd.

**Facility : C&C Conducted Interference Test Site No.4
(Conducted Interference Measurement)**

Address : No.15, 14 Lin, Chin Twu Chi, Lu Chu Hsiang Taoyuan Shien, Taiwan

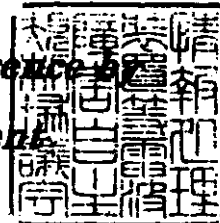
***This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures***

Registration No. : C-912

Date of Registration : March 26, 1999

This Certificate is valid until March 31, 2002

***Voluntary Control Council for Interference by
Information Technology Equipment***



中華民國實驗室認證體系認可證書

Chinese National Laboratory Accreditation Certificate ROC

No.CNLA-ZL98078

Page 1 of 4

茲以 程智科技股份有限公司程智科技電磁相容實驗室之電性測試領域經評鑑認可

十項發給本證書有效期至九十年十一月十四日 此證

This is to certify that C & C Laboratory Co., Ltd. has been recognized by the Council of Chinese National Laboratory Accreditation as an accreditation laboratory. The laboratory has been registered for ten specific tests within the field of Electrical Testing. The details of the scope of accreditation is described in the following pages and this Certificate is valid until Nov. 14, 2001.

中華民國實驗室認證委員會
主任 委

Chen, Ming-Bang

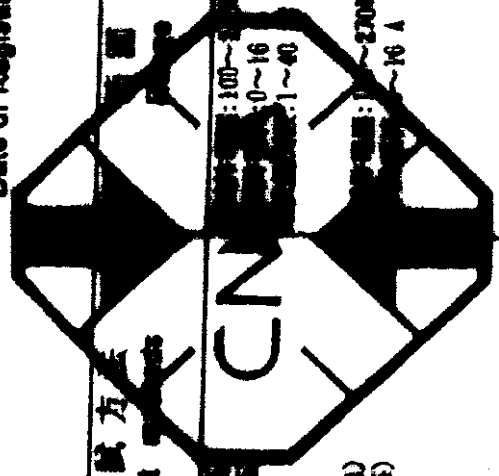
The Chairman of Chinese National Laboratory Accreditation Council

中 華 民 國 八十七 年 十一 月 十五 日

(本證書共 4 頁分發使用為效 This document is invalid unless accompanied by all 4 pages.)

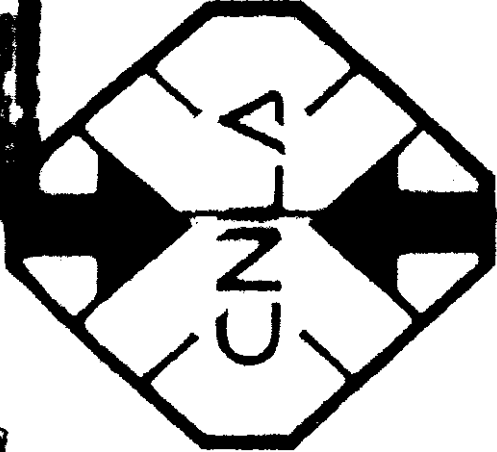
機構名稱 : 臺灣科學儀器股份有限公司
 認可編號 : 0363
 負責人 : 王國雄
 測試範圍 : 電性測試
 發證日期 : 1998.11.15

Organization : C & C Laboratory Co., Ltd.
 Laboratory : C & C Laboratory Co., Ltd.
 Registration : 0363
 Laboratory Head : WANG, Chinshen
 Testing Field : Electrical Testing
 Date of Registration: 1998.11.15



認可項目 Registration items	測試件 Test items	測試方法 Test methods	認可之最佳測試能力 Best test capability recognized	備註 Remarks
EJ0102 谐波電流干擾 Harmonic current emissions	資訊產品及其週邊產品 ITE and peripheral Products	IEC 1000-3-2(1996) EN 61010-3-2(1996)	電壓範圍: 100~250VAC(單相) 電流範圍: 0~16 A	
EJ0103 電壓波動與閃爍干擾 Voltage fluctuations and flicker	資訊產品及其週邊產品 ITE and peripheral Products	IEC 1000-3-2(1996) EN 61010-3-2(1996)	電壓範圍: 100~250VAC(單相) 電流範圍: 0~16 A	
EJ0122 電信及資訊技術系統及儀器 Systems and apparatus of the telecommunication and	資訊產品及其週邊產品 ITE and peripheral Products	CISPR 11(1996) EN 55022(1995) CISPR 11A(1997) AS/NZS 3548(1995) IEC 1000-3-2(1996) IEC Part 15(1996)	電壓干擾: 150 kHz~30 MHz 電流干擾: 30 MHz~1.0 GHz 電壓干擾: 450 kHz~30 MHz 電流干擾: 30 MHz~2.0 GHz	

認可項目 Registration items	測試件 Test items	測試方法 Test methods	範圍 Range	認可之測試能力 Test capability recognized	備註 Remarks
information technology EJ0202 靜電放電測試 Electrostatic discharge tests	資訊產品及其周邊產品 ITE and peripheral Products	IEC 60060-4-2(1995) EN 60070-4-2(1995) CISR 15002-4(1992)	電壓範圍: 0.2 kV~16.5 kV(+/-) 電流範圍: 0.2 kA~0.0 kA(+/-)		
EJ0203 輻射耐受測試 Radiated susceptibility tests	資訊產品及其周邊產品 ITE and peripheral Products	IEC 60060-4-2(1995) IEC 60070-4-2(1995) EN 60070-4-2(1995) EN 50145(1995)	電壓範圍: 30V~1.0 GHz 電流範圍: 10 V/m, 100V/m 電壓範圍: 0.2 kV~0.0 kV(+/-)		
EJ0204 電性快速突波測試 Electrical fast transient/burst tests	資訊產品及其周邊產品 ITE and peripheral Products	IEC 60060-4-2(1995) IEC 60070-4-2(1995) EN 60070-4-2(1995) CISR 15002-4(1992)	電壓範圍: 100~200 V 電流範圍: 0.2~10 kA 電壓範圍: 0.2 kV~0.0 kV(+/-)		
EJ0205 突波/雷擊測試 Surge/lightening tests	資訊產品及其周邊產品 ITE and peripheral Products	IEC 60060-4-5(1995) EN 50145(1995) CISR 15002-4(1992)	電壓範圍: 100~200 V 電流範圍: 100V 電壓範圍: 0~1.2 kV 電流範圍: 0~1.2 kA		
EJ0206 傳導耐受測試 Conducted susceptibility tests	資訊產品及其周邊產品 ITE and peripheral Products	IEC 60060-4-6(1995) EN 50145(1995)	電壓範圍: 150 kHz~300 kHz 電流範圍: 10 V, 100V/m		
EJ0208 電磁輻射磁場耐受	資訊產品及其周邊產品 ITE and peripheral Products	IEC 60060-4-6(1995) EN 50145(1995)	電壓範圍: 150 kHz~300 kHz 電流範圍: 10 V, 100V/m		

認可項目 Registration Items	測試條件 Test Items	測試方法 Test methods	範圍 Range	認可之測試能力 Test Capabilities Recognized	備註 Remarks
測試 Power frequency magnetic field immunity test E10211 電壓下陷・瞬時停電 瞬時電壓變動 Voltage dips, short interruptions and voltage variations immunity tests (以 N 變白)	Products 電力及電訊設備 ITE and periphery Products	IEC 60800-4-11(EMC) EN 60800-4-11(EMC)	範圍: 200V 50/60Hz 電壓下陷・瞬時停電 瞬時電壓變動 		

APPENDIX 7

TEST EQUIPMENT

MEASURING INSTRUMENT SETTING

TEST TYPE	DETECTOR	FREQUENCY RANGE	RESOLUTION BANDWIDTH	VIDEO BANDWIDTH
Conducted	Peak/QP/Avg	150kHz-30MHz	9kHz	9kHz
Radiated	Peak	30MHz-1GHz	100kHz	100kHz
Radiated	QP	30MHz-1GHz	120kHz	120kHz
Radiated	Peak/Avg	Above 1GHz	1MHz	1MHz

Note: All readings on data pages are taken with the detector in peak mode unless otherwise stated.

UNITS OF MEASUREMENT

Measurements of radiated interference are reported in terms of dBuV/m, at a specified distance. The indicated readings on the spectrum analyzer are converted to dBuV/m by use of appropriate conversion factors. Measurements of conducted interference are reported in terms of dBuV.

TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at C & C Laboratory, Co., Ltd. for testing. The equipment conforms to the American National Standard Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10kHz to 2GHz.

Equipment used during the tests:

Open Area Test Site: ☐ # 1; ☒ # 3; ☐ # 4

EQUIPMENT TYPE	* MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL. DUE
Spectrum Analyzer	HP	8568B	3001A05004	04/16/1999	04/15/2000
S.P.A Display	HP	85662A	3104A18846	04/16/1999	04/15/2000
RF Pre-selector	HP	85685A	2947A01064	04/16/1999	04/15/2000
Q.P Adaptor	HP	85650A	2811A01399	04/16/1999	04/15/2000
Precision Dipole	R&S	HZ-12	846932/0004	06/16/1999	06/16/2000
Precision Dipole	R&S	HZ-13	846556/0008	06/16/1999	06/16/2000
Horn Antenna	EMCO	3115	9602-4659	04/04/1999	04/04/2000
Bilog Antenna	CHASE	CBL6112A	2309	03/14/1999	03/14/2000
Turn Table	EMCO	2081-1.21	N/A	N/A	N/A
Antenna Tower	EMCO	2075-2	9707-2604	N/A	N/A
Controller	EMCO	2090	N/A	N/A	N/A
RF Switch	ANRITSU	MP59B	N/A	N/A	N/A
Site Information	C&C	N/A	N/A	01/23/1999	01/23/2000

EQUIPMENT TYPE	* MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL. DUE
Spectrum Analyzer	ADVANTEST	R3261C	71720533	10/27/1998	10/26/1999
Pre-Amplifier	HP	8447D	2944A09173	01/28/1999	01/27/2000
EMI Test Receiver	R&S	ESVS20	838804/004	12/12/1998	12/11/1999
Precision Dipole	R&S	HZ-12	846932/0004	06/06/1999	06/06/2000
Precision Dipole	R&S	HZ-13	846556/0008	06/16/1999	06/16/2000
Horn Antenna	EMCO	3115	9602-4659	04/04/1999	04/04/2000
Bilog Antenna	CHASE	CBL6112A	2179	11/14/1998	11/14/1999
Turn Table	EMCO	2081-1.21	9709-1885	N/A	N/A
Antenna Tower	EMCO	2075-2	9707-2060	N/A	N/A
Controller	EMCO	2090	9709-1256	N/A	N/A
RF Switch	ANRITSU	MP59B	N/A	N/A	N/A
Site Information	C&C	N/A	N/A	01/31/1999	01/31/2000

EQUIPMENT TYPE	* MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL. DUE
Spectrum Analyzer	ADVANTEST	R3261C	81720301	AUG/19/1999	AUG/18/2000
Pre-Amplifier	HP	8447F	2944A03748	OCT/22/1998	OCT/21/1999
EMI Test Receiver	R&S	ESVS10	846285/016	DEC/19/1998	DEC/18/1999
Turn Table	Chance most	N/A	N/A	N/A	N/A
Antenna Tower	Chance most	N/A	N/A	N/A	N/A
Controller	Chance most	N/A	N/A	N/A	N/A
Bilog Antenna	Chase	CBL 6112B	2462	JAN/01/1999	JAN/01/2000
Site NSA	C&C Lab.	N/A	N/A	DEC/27/1998	DEC/27/1999

Conducted Emission Test Site: ☐ # 1 ; ☐ # 3 ; ☒ # 4

EQUIPMENT TYPE	* MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL. DUE
Spectrum Analyzer	HP	8568B	3001A05004	04/16/1999	04/15/2000
S.P.A Display	HP	85662A	3104A18846	04/16/1999	04/15/2000
RF Pre-selector	HP	85685A	2947A01064	04/16/1999	04/15/2000
Q.P Adaptor	HP	85650A	2811A01399	04/16/1999	04/15/2000
LISN	EMCO	3825/2	9106-1809	08/14/1999	08/14/2000
LISN	EMCO	3825/2	9106-1810	08/14/1999	08/14/2000

EQUIPMENT TYPE	* MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL. DUE
Spectrum Analyzer	ADVANTEST	R3261A	91720031	03/25/1999	03/24/2000
EMI Test Receiver	R&S	ESHS10	843743/015	12/09/1998	12/08/1999
LISN	R&S	ESH3-Z5	848773/014	10/22/1998	10/21/1999
LISN	EMCO	3825/2	9003-1628	04/29/1999	04/28/2000

EQUIPMENT TYPE	* MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL. DUE
EMI Test Receiver	R&S	ESCS30	847793/012	12/19/1998	12/18/1999
LISN	R&S	ESH2-Z5	848773/014	12/04/1998	12/03/1999
LISN	EMCO	3825/2	9003-1628	01/09/1999	01/08/2000

The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

APPENDIX 8

BLOCK DIAGRAM OF TEST SETUP

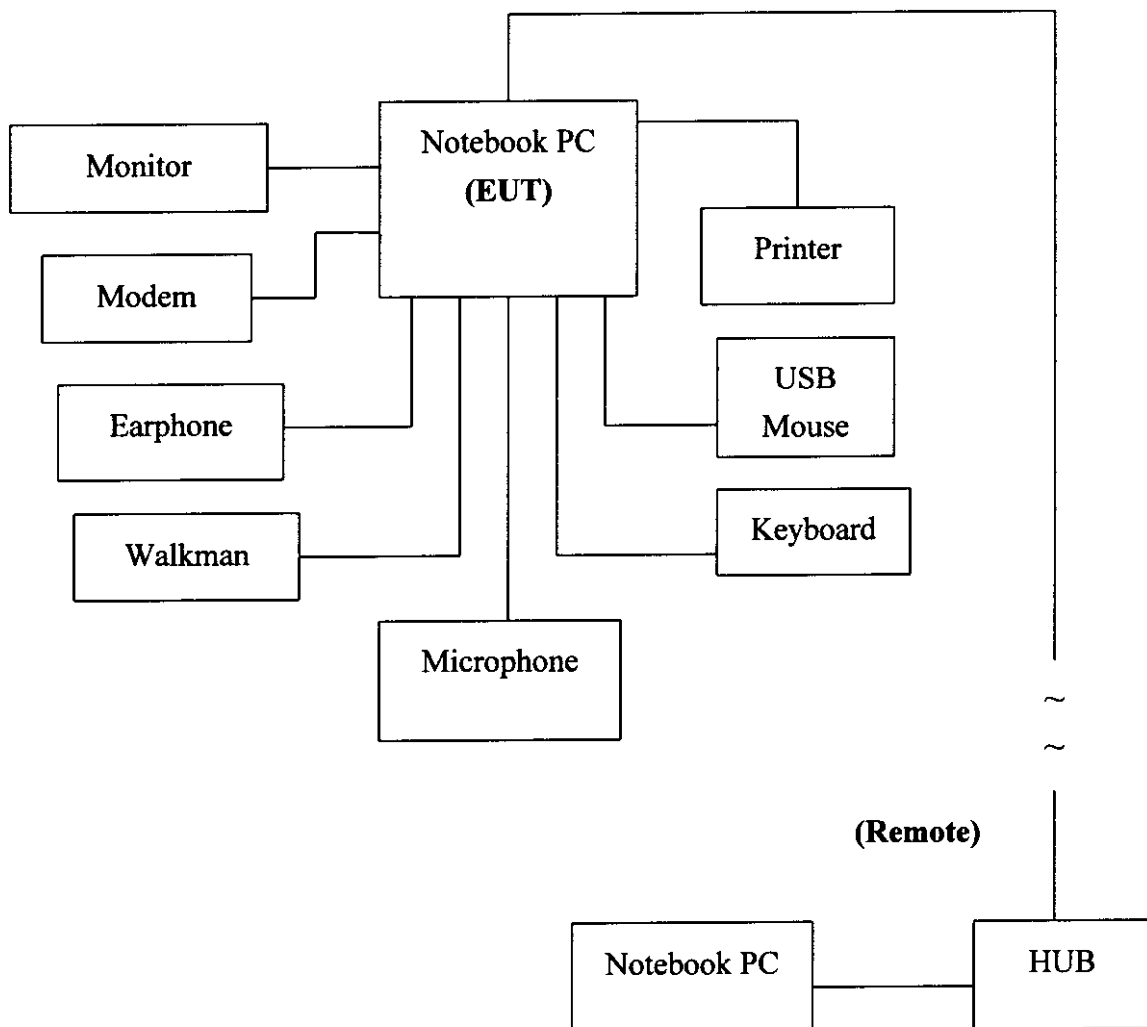
System Diagram of Connections between EUT and Simulators

EUT: Notebook PC

Trade Name: FIC

Model Number: C2 PLUS ALPHA

Power Cord: Unshielded, 1.8m



APPENDIX 9

PHOTOGRAPHS