



**ELECTRO MAGNETIC COMPATIBILITY
LABORATORY**

TEST REPORT

**Report number :
961-215-31/e**

SUBJECT : EMI measurement about standard CFR 47 part 15 class B

CONTRACT :

ARCHOS SA

DATE of report :

December ,22 of 1998

CUSTOMER :

B.GONNET

EQUIPMENT :

**PCMCIA connection interface
Mini CD**

Written by : JP.AMY

Approval : JL.CANDELON

*This document must be only reproduced by a whole photographic operation.
It contents 6 pages and 9 appendixes.*

This test report is attached to the equipment under test only.

SUMMARY

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1. INFORMATIONS FOR THE TEST

NAME OF EQUIPMENT UNDER TEST :

**PCMCIA connection interface
Mini CD**

ADDRESS OF THE CUSTOMER :

**ARCHOS SA
ZA les Godets, 37 rue des petits ruisseaux
VERRIERES
91370 (Essonne)
FRANCE**

NAME OF THE CUSTOMER :

B.GONNET

DATE OF THE TEST :

December, 17 of 1998

TEST FACILITY :

**EMC Test Site in ANGERS
34, rue du Nid de Pie
49004 (Angers cedex 01)
FRANCE
FCC recognition number I6U**

ASSISTANT DURING THE TEST :

B.GONNET

TEST DRIVEN BY :

JP.AMY

TEST MANAGER :

Jean Louis CANDELON

2. INTRODUCTION

The test is done to verify the compliance of system configuration described §4 versus the limits class B of USA standard regulation CFR 47 part 15 subpart B for conducted emissions limits (§15.107 class B device) and radiated emission limits (§15.109 class B device).

This equipment is a peripheral device plugged through PCMCIA connection of personal computer.

3. DOCUMENTS OF REFERENCE

CFR 47 part 0 to 19, date of 1997
ANSI C63.4, date of 1992

4. CONFIGURATION OF THE EQUIPMENT UNDER TEST

HARDWARE :

Equipment under test:

- * Mini CD without serial number with PCMCIA board ref. FC10;
- * Power cable (mini DIN/jack) of Mini CD drive; unshielded cable; length= 70cm; shielded mini DIN male/female connector adapter
- * Ear phone Philips SBC HL100

Associated equipment for the test, measured with EUT :

- * Portable PC IBM (with PCMCIA port) ; Model ThinkPad 755Cx; type 9545; S/N: 00-00023; FCC ID: ANO9545E with AC/DC Adapter IBM P/N 49G2192 without serial number
- * Additionnal visual Zenith Data Systems model ZCM-1426-XT; S/N MYZE4104023521; FCC ID: CKLHCM-427
- * Microsoft mouse PS/2 compatible mouse; S/N 0133558; FCC ID: C3K5COMB
- * Printer Hewlett Packard Deskjet Plus 2277A FCC-ID: B948JA2277X S/N: 2906A16132 with Power Module 1, model: ETT76J2A Input: 120V/60Hz A.C 0.5A Output: 20V A.C 40VA

Interconnections :

- * AC power cable for visual, unshielded, length = 2.50m
- * Printer parallel data cable; shielded; length 2m, ref. N085675000.01C with shielded connectors

SOFTWARE : Activity during the test

Reads data between MINI CD and PC in loop mode

5. LIST OF MEASUREMENT APPARATUS

APPARATUS	MANUFACTURER	REFERENCE	SERIAL NUMBER	Date of vérification
*RECEIVERS				
Receptive chain :	Hewlett Packard	HP 8574 A	-	-
Q-P Adaptator	Hewlett Packard	HP 85650A	2811A01134	Aug-98
Spectrum analyser	Hewlett Packard	HP 8568 B	2816A116603	Aug-98
Preselector	Hewlett Packard	HP 685685A	287A00784	Aug-98
Input limiter	Hewlett Packard	11947A00	3107A00899	
EMI Software	Hewlett Packard	HP 85869A	-	
REMS Software for fieldstrength	Hewlett Packard	HP 85879A rev A.02.01	-	
*NETWORKS Adatpters				
LISN	Rohde & Schwarz	ESH2-Z5	861741/019	Aug-98
LISN	Rohde & Schwarz	ESH2-Z5	872094/037	Aug-98
*ANTENNAS				
Bicônic N°1	Schwarzbeck	BBA 9106	42456050001	Aug-98
Log.périod. N°1	Schwarzbeck	UHALP 9107	42456080001	Aug-98
Bilog	CHASE	CBL-6112	2434	Oct-98

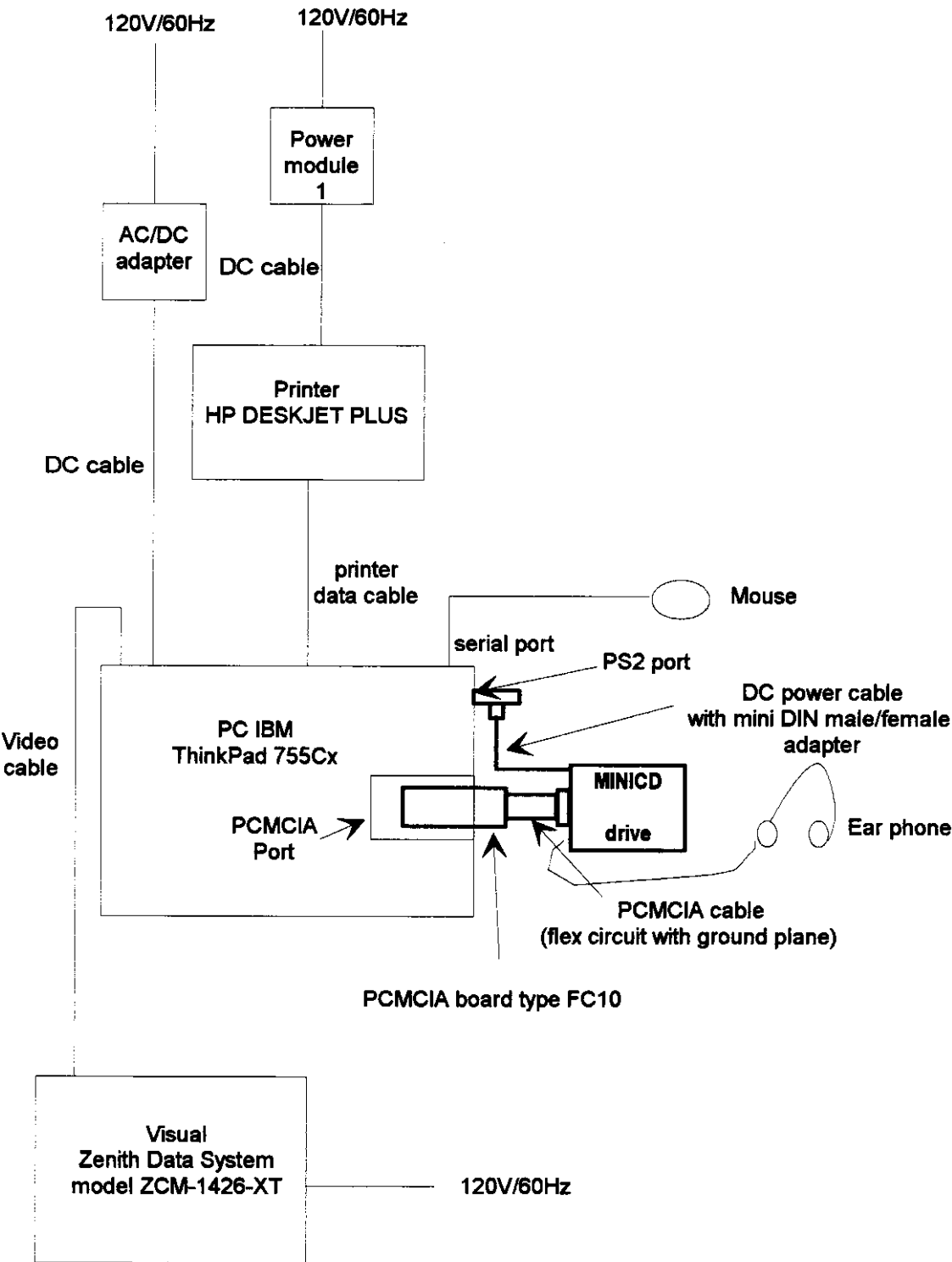
6. RESULTS

Test type	PASS the limit	FAIL the limit	Appendix
Power line interferences class B limit	X		1-1 to 1-4
Electric fieldstrength class B limit	X		2-1 and 2-2

7. CONCLUSION

The sample of equipment under test does complies with the limit class B of FCC rules.

TESTED CONFIGURATION



REPORT NUMBER : 961-215-31/e APPENDIX:1-1
 PRODUCT NAME : PC IBM MODEL THINKPAD 755 CX + MINICD on PCMCIA port
 SERIAL NUMBER : 00-00023 (PC)
 STANDARD : FCC PART 15 / 1997 CLASS B
 MEASUREMENT : AC POWER LINE CONDUCTED PHASE
 IF (Limit line#1= Quasi-Peak limit)
 CONDITIONS : 120V/60Hz -

MEASUREMENTS DONE BY : JP.AMY

16 Dec 1998 09:29:17

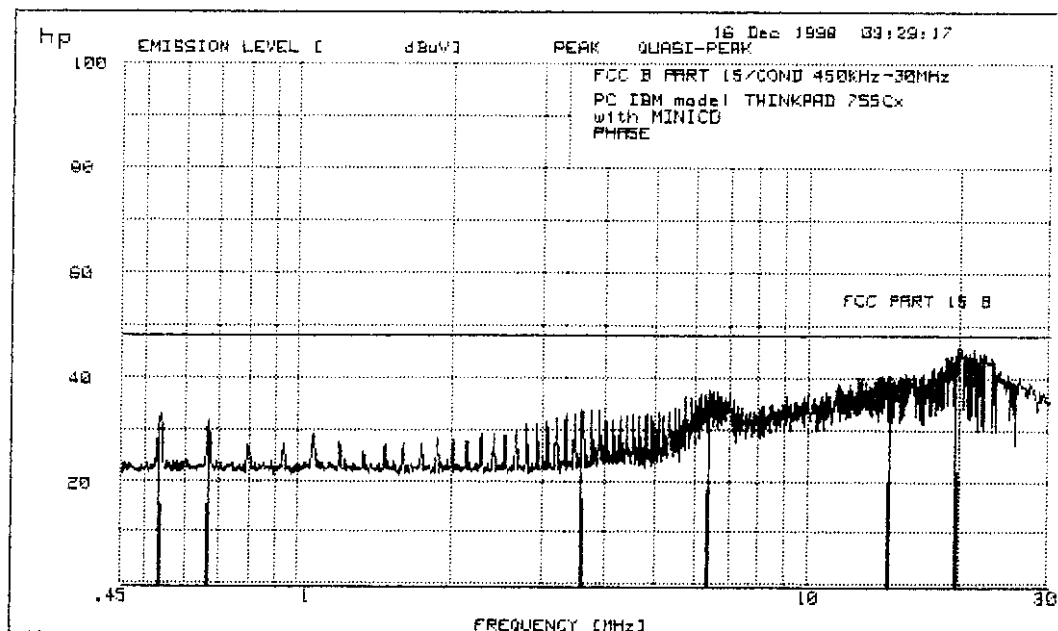
1. CONDUCTION SECTEUR

1.1 FCC B PART 15/COND 450KHz-30MHz

PC IBM model THINKPAD 755Cx
 with MINICD
 PHASE

15 highest Quasi-Peaks above -20 dB of Limit Line #1
 peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5345	31.5	-16.5
2	.6676	30.9	-17.1
3	3.59	33.6	-14.4
4	6.379	37.5	-10.5
5	14.52	39.7	-8.3
6	19.64	44.2	-3.8



REPORT NUMBER : 961-215-31/e APPENDIX:1-2
 PRODUCT NAME : PC IBM MODEL THINKPAD 755 CX + MINICD on PCMCIA port
 SERIAL NUMBER : 00-00023 (PC)
 STANDARD : FCC PART 15 / 1997 CLASS B
 MEASUREMENT : AC POWER LINE CONDUCTED NEUTRAL
 (Limit line#1= Quasi-Peak limit)
 CONDITIONS : 120V/60Hz -

MEASUREMENTS DONE BY : JP.AMY

16 Dec 1998 09:41:54

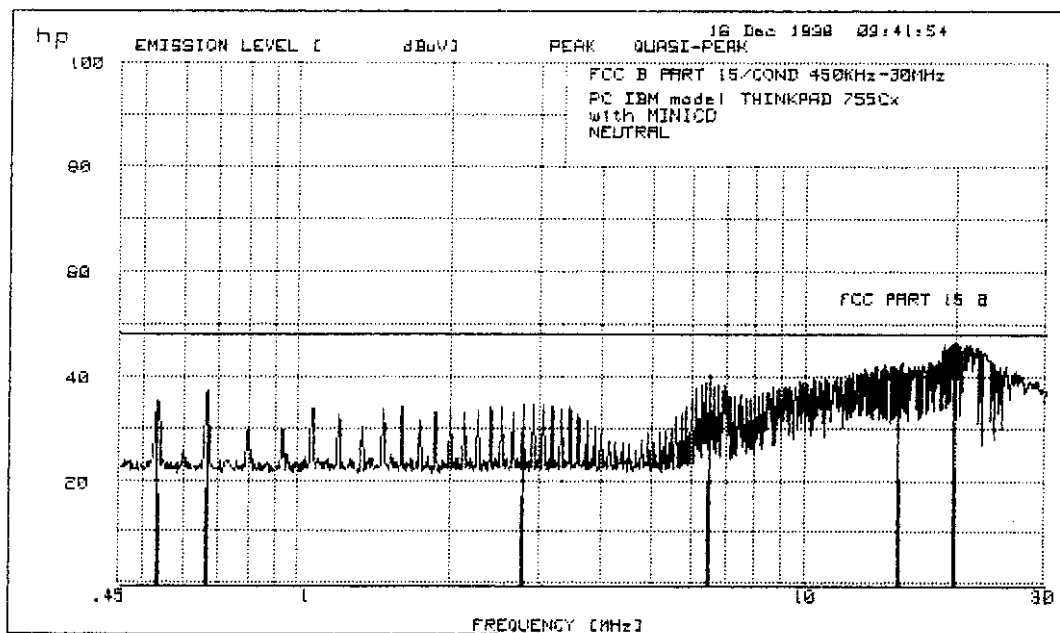
1. CONDUCTION SECTEUR

1.1 FCC B PART 15/COND 450KHz-30MHz

PC IBM model THINKPAD 755Cx
 with MINICD
 NEUTRAL

15 highest Quasi-Peaks above -20 dB of Limit Line #1
 peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5345	35	-13.0
2	.6676	37.3	-10.7
3	2.791	34.4	-13.6
4	6.515	40.1	-7.9
5	15.4	41	-7.0
6	19.89	46.1	-1.9



REPORT NUMBER : 961-215-31/e APPENDIX:1-3
 PRODUCT NAME : VISUAL ZDS MODEL ZCM-1426-XT + PRINTRE HP DESKJET PLUS
 SERIAL NUMBER : VISUAL: MYZE4104023521; PRINTER: 2906A16132
 STANDARD : FCC PART 15 / 1997 CLASS B
 MEASUREMENT : AC POWER LINE CONDUCTED PHASE
 (Limit line#1= Quasi-Peak limit)
 CONDITIONS : 120V/60Hz

MEASUREMENTS DONE BY : JP.AMY

16 Dec 1998 09:53:33

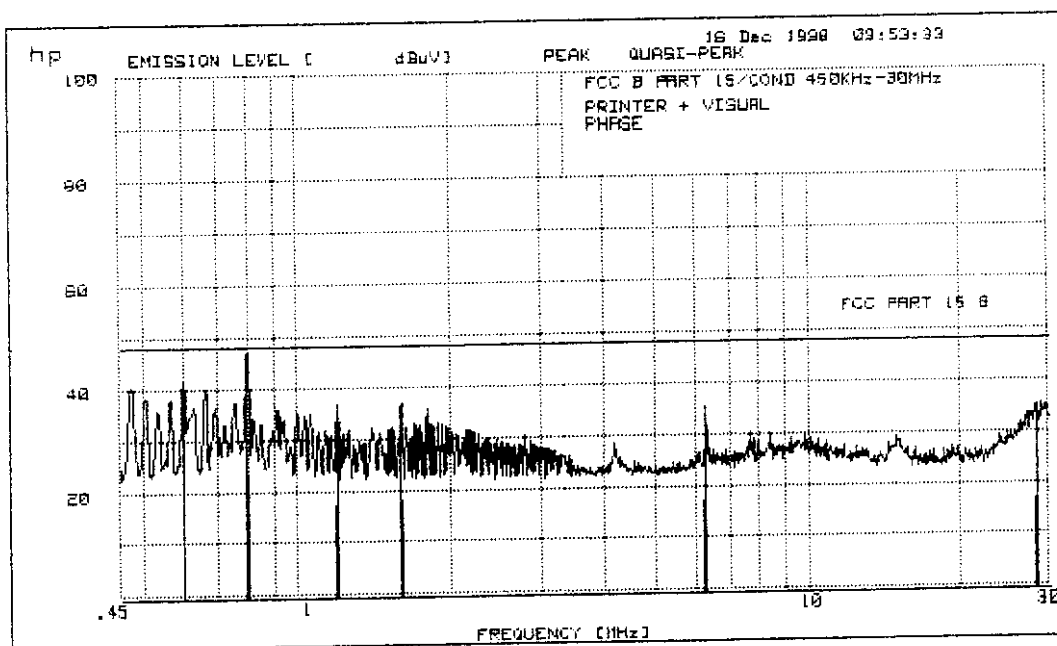
1. CONDUCTION SECTEUR

1.1 FCC B PART 15/COND 450KHz-30MHz

PRINTER + VISUAL
 PHASE

15 highest Quasi-Peaks above -20 dB of Limit Line #1
 peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.6011	41.7	-6.3
2	.7995	46.9	-1.1
3	1.196	34.9	-13.1
4	1.598	36.3	-11.7
5	6.273	34.8	-13.2
6	28.41	34	-14.0



REPORT NUMBER : 961-215-31/e
 PRODUCT NAME : VISUAL ZDS MODEL ZCM-1426-XT + PRINTRE HP DESKJET PLUS
 SERIAL NUMBER : VISUAL: MYZE4104023521; PRINTER: 2906A16132
 STANDARD : FCC PART 15 / 1997 CLASS B
 MEASUREMENT : AC POWER LINE CONDUCTED NEUTRAL
 (Limit line#1= Quasi-Peak limit)
 CONDITIONS : 120V/60Hz

MEASUREMENTS DONE BY : JP.AMY

16 Dec 1998 10:05:30

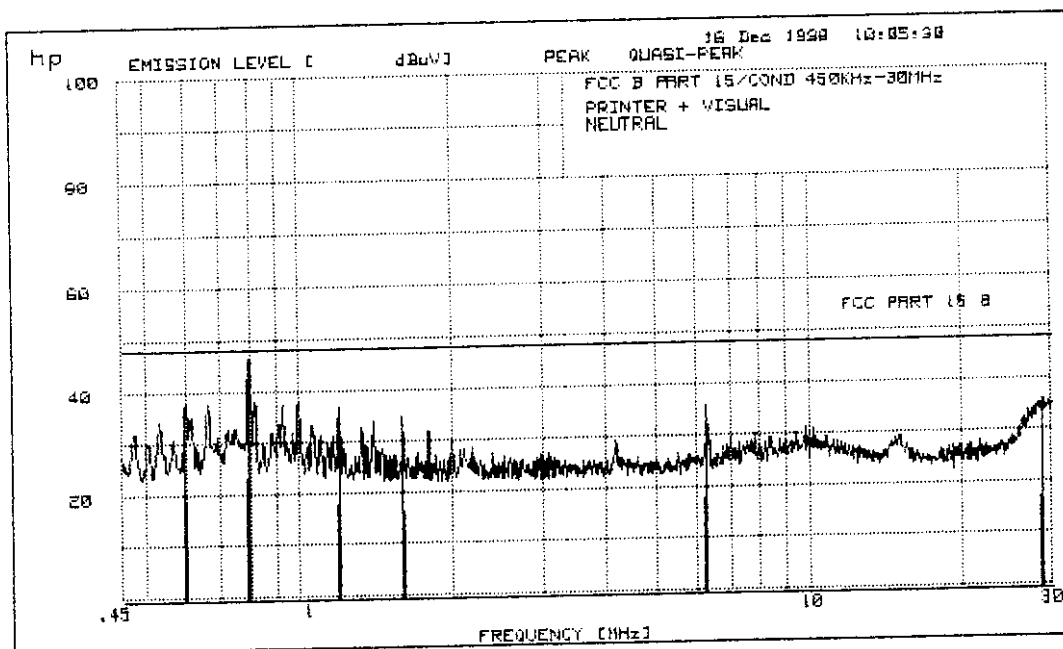
1. CONDUCTION SECTEUR

1.1 FCC B PART 15/COND 450KHz-30MHz

PRINTER + VISUAL
 NEUTRAL

15 highest Quasi-Peaks above -20 dB of Limit Line #1
 peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5961	37	-11.0
2	.7962	46.5	-1.5
3	1.196	35.7	-12.3
4	1.598	32.7	-15.3
5	6.273	35.6	-12.4
6	28.65	34.4	-13.6



REPORT : 961-215-31/e
 PRODUCT NAME : PC IBM MODEL THINKPAD 755XC with MINICD on PCMCIA port
 SERIAL NUMBER : PC: 00-00023
 STANDARD : FCC PART15 DATE OF 1997 CLASS B D=3m
 MEASUREMENT : ELECTRIC FIELD 30-1000MHz
 CONDITIONS : 120V/60Hz
 DATE : 16 Dec 1998

APPENDIX 2-1

MEASUREMENT DONE BY : JP.AMY

PRODUCT EMISSIONS

HP 85879A Rev. A.02.01

Data File: NOT STORED

17 Dec 1998 08:36:38

No	EMISSION	SPEC	MEASUREMENTS			SITE		CORR	COMMENTS
	FREQUENCY MHz	LIMIT dBuV/m	ABS	dLIM dB	MODE	POL	HGT cm	FACTOR dB	
						AZM deg			
1	34.060	40.0	32.9	-7.1	PK	V	100 95	17.9	
2	50.392	40.0	33.9	-6.1	PK	V	100 95	10.3	
3	62.267	40.0	27.4	-12.6	PK	V	160 265	7.5	
4	69.135	40.0	36.1	-3.9	QP	H	270 295	7.6	
5	76.380	40.0	26.6	-13.4	PK	H	280 270	8.9	
6	80.025	40.0	26.0	-14.0	PK	V	100 160	9.7	
7	96.010	43.5	33.3	-10.2	PK	V	120 155	12.4	
8	107.999	43.5	39.1	-4.4	QP	V	160 260	13.	
9	120.028	43.5	34.9	-8.6	PK	V	100 90	13.	
10	122.390	43.5	33.6	-9.9	PK	V	100 170	13.	
11	128.730	43.5	34.0	-9.5	PK	V	100 130	13.1	
12	131.990	43.5	33.0	-10.5	PK	H	330 170	13.1	
13	132.917	43.5	33.2	-10.3	PK	H	340 145	13.2	
14	137.099	43.5	30.0	-13.5	PK	H	340 145	13.2	
15	150.002	43.5	31.4	-12.1	PK	H	330 295	13.5	
16	156.007	43.5	31.1	-12.4	PK	H	150 120	13.3	
17	166.490	43.5	33.8	-9.7	PK	H	140 100	13.	
18	171.810	43.5	30.2	-13.3	PK	H	160 290	12.9	
19	175.431	43.5	32.5	-11.0	PK	H	160 330	12.8	
20	180.006	43.5	36.0	-7.5	PK	H	140 325	12.7	
21	191.015	43.5	35.7	-7.8	QP	H	130 160	12.4	
22	192.420	43.5	38.6	-4.9	QP	H	130 160	12.3	
23	198.090	43.5	37.8	-5.7	QP	H	160 160	12.2	
24	204.026	43.5	30.9	-12.6	PK	V	100 110	12.4	
25	224.933	46.0	39.6	-6.4	QP	H	150 40	14.	
26	229.160	46.0	31.3	-14.7	PK	H	190 35	14.3	
27	233.150	46.0	34.1	-11.9	PK	H	180 115	14.6	
28	266.390	46.0	33.9	-12.1	PK	H	160 200	16.2	
29	275.930	46.0	32.9	-13.1	PK	H	160 295	16.4	
30	280.069	46.0	36.3	-9.7	PK	H	210 95	16.4	
31	284.391	46.0	34.0	-12.0	PK	H	190 165	16.5	
32	332.656	46.0	33.4	-12.6	PK	V	160 125	17.8	
33	382.000	46.0	35.7	-10.3	QP	H	100 230	19.4	
34	407.450	46.0	35.4	-10.6	QP	H	100 225	20.1	
35	432.921	46.0	34.6	-11.4	QP	H	120 140	20.6	
36	458.394	46.0	35.0	-11.0	PK	H	120 195	21.1	
37	505.108	46.0	37.7	-8.3	PK	H	230 210	22.1	
38	513.575	46.0	30.4	-15.6	QP	H	220 195	22.2	
39	606.986	46.0	39.2	-6.8	PK	H	170 180	23.4	
40	666.404	46.0	35.4	-10.6	PK	V	160 95	23.8	
41	764.021	46.0	40.5	-5.5	PK	H	140 165	24.9	
42	814.981	46.0	38.1	-7.9	QP	H	130 15	25.4	
43	921.092	46.0	38.2	-7.8	PK	H	200 360	26.4	

APPENDIX 2-2

REPORT : 961-215-31/e
 PRODUCT NAME : PC IBM MODEL THINKPAD 755XC with MINICD on PCMCIA port
 SERIAL NUMBER : PC: 00-00023
 STANDARD : FCC PART15 DATE OF 1997 CLASS B D=3m
 MEASUREMENT : ELECTRIC FIELD 30-1000MHz
 CONDITIONS : 120V/60Hz
 DATE : 16 Dec 1998

MEASUREMENT DONE BY : JP.AMY

