



**ELECTRO MAGNETIC COMPATIBILITY
LABORATORY**

TEST REPORT

**Report number :
961-215-21/e**

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

CONTRACT : ARCHOS SA
DATE of report : August 25 of 1998
CUSTOMER : B.GONNET
**EQUIPMENT : PCMCIA connection interface
Mini CD Flip**

Written by : D. RAUD

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 Flip

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 :

August, 19 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 :

D.RAUD

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).

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 flip 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

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 MYZE4047008;
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

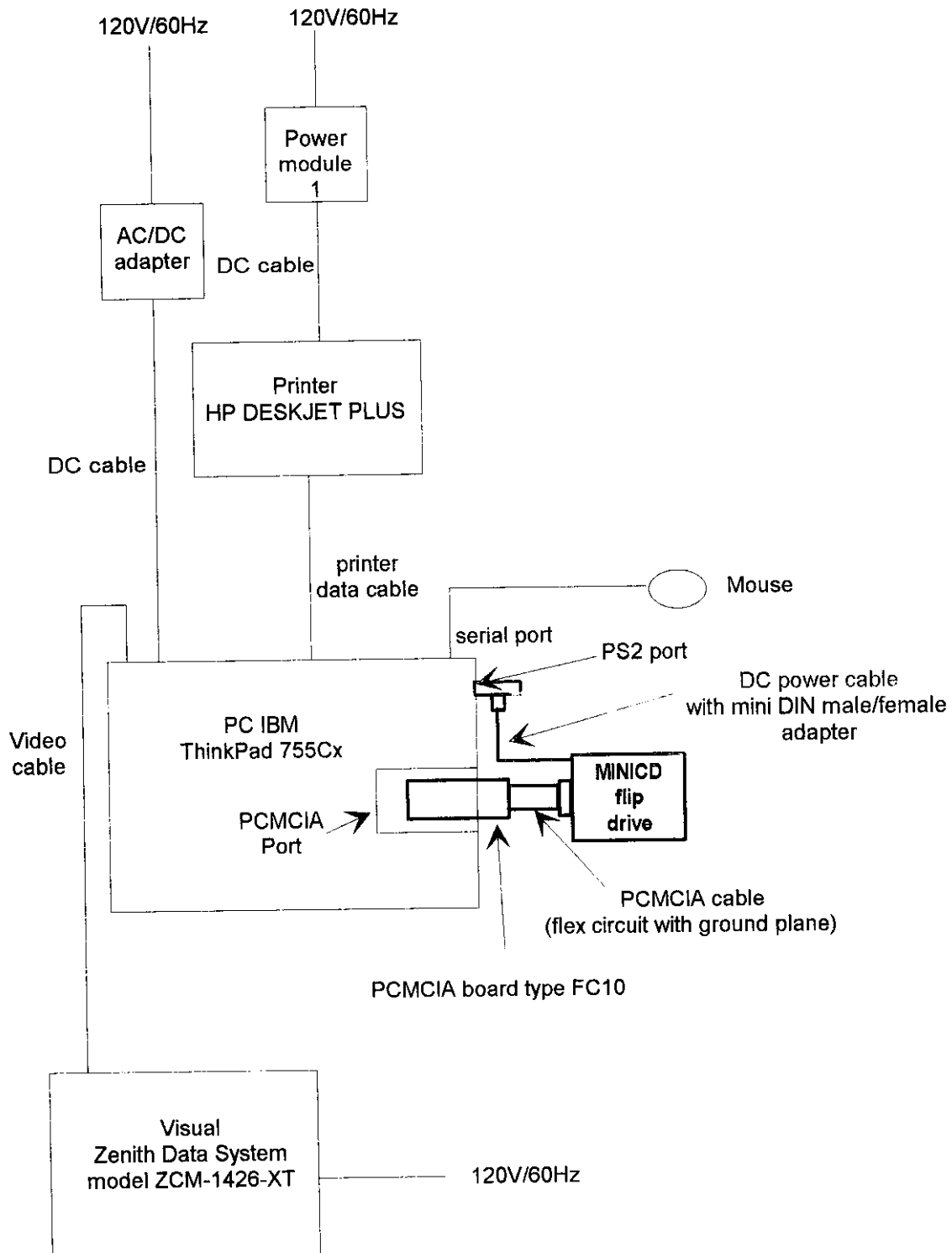
SOFTWARE : Activity during the test

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	août-98
Spectrum analyser	Hewlett Packard	HP 8568 B	2816A116603	août-98
Preselector	Hewlett Packard	HP 685685A	287A00784	août-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	août-98
LISN	Rohde & Schwarz	ESH2-Z5	872094/037	août-98
*ANTENNAS				
Biconical (30-300MHz)	Schwarzbeck	BBA 9106	42456050001	août-98
Log-periodic (300-1000MHz)	Schwarzbeck	UHALP 9107	42456080001	août-98

TESTED CONFIGURATION



APPENDIX:1-1

REPORT NUMBER : 951-215-02/e
 PRODUCT NAME : PC IBM MODEL THINKPAD 755 Cx + MINICD FLIP on PCMCIA port
 SERIAL NUMBER : PC: 00-00023
 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 : D.RAUD

19 Aug 1998 14:39:08

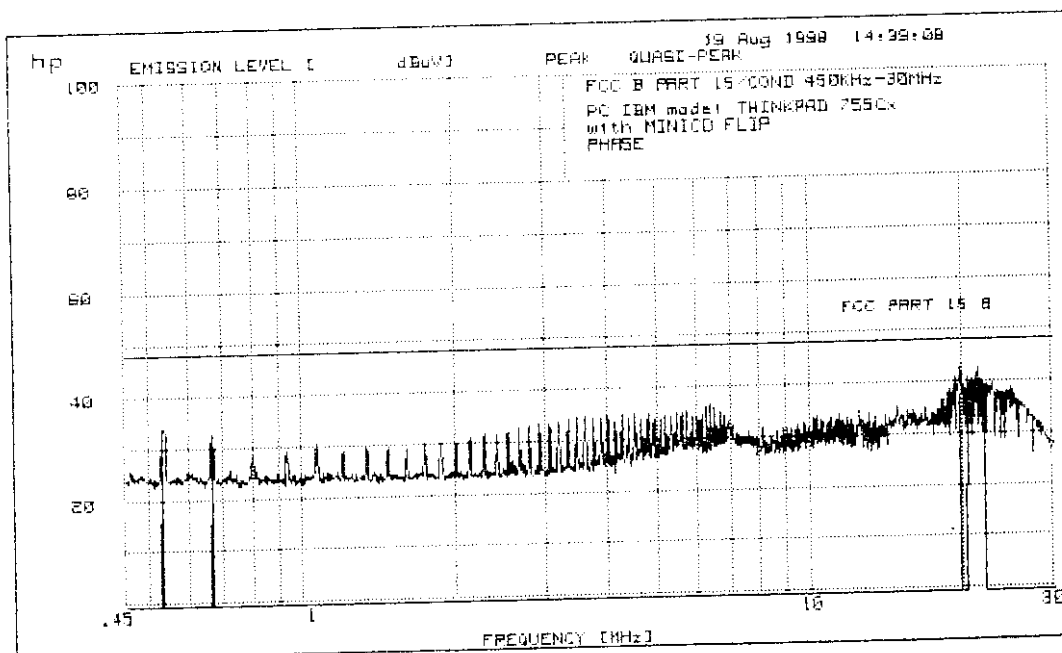
1. CONDUCTION SECTEUR

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

PC IBM model THINKPAD 755Cx
 with MINICD FLIP
 PHASE

14 highest Quasi-Peaks above -15 dB of Limit Line #1
 peak criteria = 2 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	19.8	37.1	-10.9
2	20.65	40	-8.0
3	20.83	36.8	-9.2
4	21.54	40.3	-7.7
5	21.72	39.7	-8.3
6	21.99	39.1	-8.9



REPORT NUMBER : 961-215-02/e
 PRODUCT NAME : PC IBM MODEL THINKPAD 755 Cx + MINICD FLIP on PCMCIA port
 SERIAL NUMBER : PC: 00-00023
 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 : D.RAUD

19 Aug 1998 14:54:48

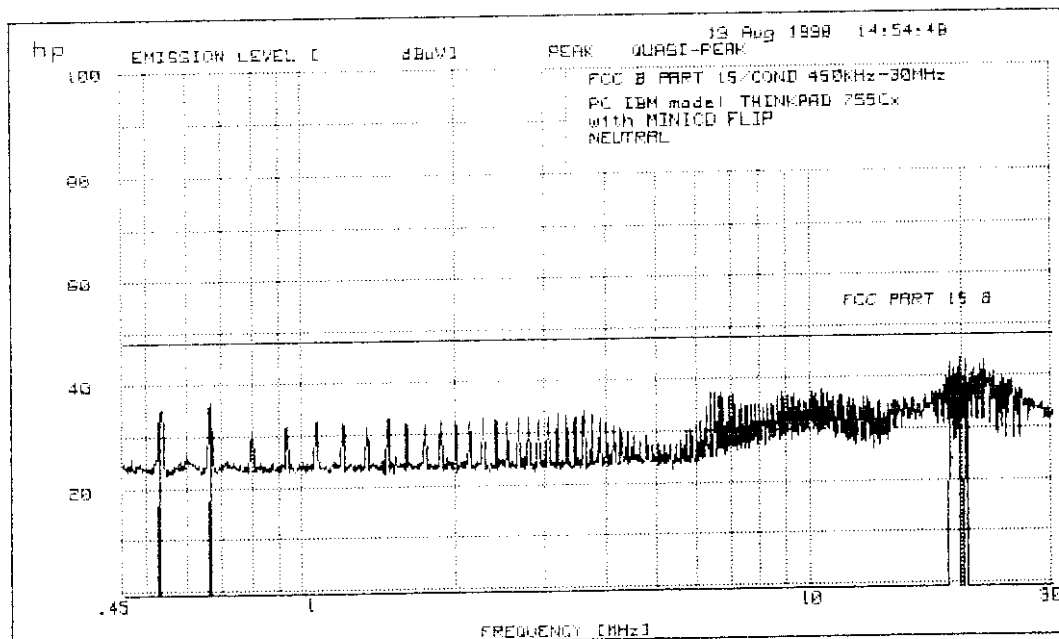
1. CONDUCTION SECTEUR

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

PC IBM model THINKPAD 755Cx
 with MINICD FLIP
 NEUTRAL

14 highest Quasi-Peaks above -15 dB of Limit Line #1
 peak criteria = 2 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5322	34	-14.0
2	.6676	35.9	-12.1
3	18.91	39.3	-8.7
4	19.15	38.7	-9.3
5	19.31	39.5	-8.5
6	19.56	39.9	-9.1
7	19.72	39.8	-8.2
8	20.31	40.3	-7.7



REPORT NUMBER : 961-215-02/e APPENDIX:1-4
 PRODUCT NAME : VISUAL ZDS MODEL ZCM-1426-XT + PRINTRE HP DESKJET PLUS
 SERIAL NUMBER : VISUAL: MYZE4047008927; 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 : D.RAUD

19 Aug 1998 15:15:19

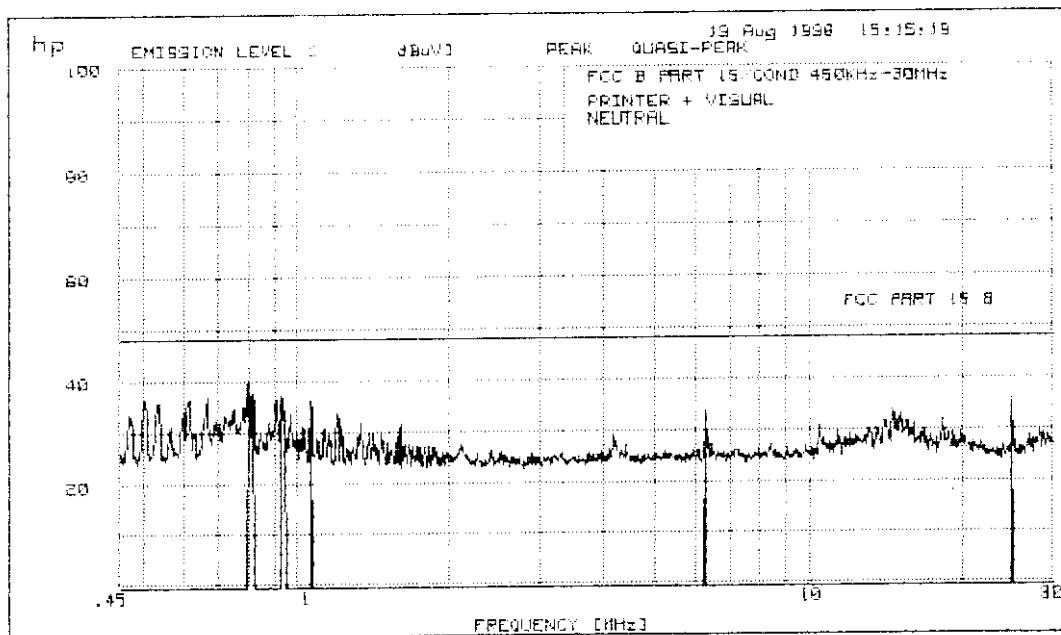
1. CONDUCTION SECTEUR

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

PRINTER + VISUAL
 NEUTRAL

14 highest Quasi-Peaks above -15 dB of Limit Line #1
 peak criteria = 2 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.8029	38.9	-9.1
2	.8199	36.3	-11.7
3	.9338	35.6	-12.4
4	1.068	34.1	-13.9
5	6.273	33.8	-14.2
6	24.94	35.6	-12.4



REPORT : 961-215-21/e APPENDIX 2-1
 PRODUCT NAME : PC IBM MODEL THINKPAD 7550x with MINICD FLIP on PCMCIA port
 SERIAL NUMBER : PC: 00-00023 CONFIGURATION ON APPENDIX A
 STANDARD : FCC CFR47 PART15 DATE OF 1997 CLASS B D=3m
 MEASUREMENT : ELECTRIC FIELD 30-1000MHz
 CONDITIONS : 120V/60Hz
 DATE : 19 August 1998

MEASUREMENT DONE BY : D.RAUD

PRODUCT EMISSIONS

HP 85879A Rev. A.02.01 Data File: ELECTRIC FIELD D=3m 19 Aug 1998

No	EMISSION	SPEC	MEASUREMENTS			SITE		CORR	COMMENTS
	FREQUENCY MHz	LIMIT dBuV/m	ABS	dLIM dB	MODE	POL	HGT cm	FACTOR dB	
							AZM deg		
1	33.150	40.0	32.1	-7.9	PK	V	140 230	17.1	
2	50.387	40.0	28.6	-11.4	PK	V	120 250	13.8	
3	66.560	40.0	26.7	-13.3	PK	V	120 165	8.3	
4	97.354	43.5	36.7	-6.8	PK	V	120 70	10.7	
5	105.820	43.5	35.5	-8.0	PK	V	100 50	11.8	
6	111.820	43.5	31.1	-12.4	PK	V	100 210	12.6	
7	130.780	43.5	33.7	-9.8	PK	H	320 0	14.8	
8	137.099	43.5	30.8	-12.7	PK	H	250 350	15.3	
9	150.002	43.5	35.7	-7.8	PK	V	270 0	16.4	
10	151.041	43.5	30.0	-13.5	PK	V	100 360	16.5	
11	153.970	43.5	36.9	-6.6	QP	H	140 165	16.7	
12	155.982	43.5	40.6	-2.9	QP	H	280 325	16.9	
13	158.050	43.5	34.3	-9.2	PK	H	240 70	17.	
14	166.536	43.5	36.8	-6.7	PK	H	250 360	17.7	
15	169.326	43.5	32.2	-11.3	PK	H	280 20	17.9	
16	179.998	43.5	35.3	-8.2	QP	V	210 120	18.4	
17	200.012	43.5	31.7	-11.8	PK	H	310 360	18.8	
18	266.334	46.0	38.3	-7.7	PK	H	180 45	20.4	
19	300.014	46.0	40.0	-6.0	QP	H	100 175	17.4	
20	332.80	46.0	36.3	-9.7	PK	H	130 360	18.5	
21	399.409	46.0	39.7	-6.3	QP	H	130 175	20.7	
22	399.987	46.0	40.2	-5.8	QP	H	210 205	20.7	
23	432.700	46.0	35.4	-10.6	PK	H	200 205	21.3	
24	499.559	46.0	38.1	-7.9	PK	H	210 215	22.6	
25	600.002	46.0	34.0	-12.0	PK	H	230 155	24.7	
26	605.32	46.0	34.7	-11.3	PK	H	200 185	24.9	
27	609.556	46.0	37.8	-8.2	PK	H	200 350	25.	
28	613.80	46.0	38.1	-7.9	PK	H	170 325	25.2	
29	618.03	46.0	36.0	-10.0	PK	H	140 105	25.3	
30	650.011	46.0	38.6	-7.4	PK	H	170 185	26.4	
31	668.837	46.0	35.7	-10.3	PK	H	170 85	27.	
32	711.203	46.0	40.3	-5.7	PK	H	140 325	28.2	
33	817.012	46.0	39.7	-6.3	PK	H	200 130	28.9	
34	867.792	46.0	38.1	-7.9	PK	H	200 115	29.	
35	918.634	46.0	39.3	-6.7	PK	H	200 125	29.6	

REPORT : 961-215-21/e APPENDIX 2-2
PRODUCT NAME : PC IBM MODEL THINKPAD 7550x with MINICD FLIP on PCMCIA port
SERIAL NUMBER : PC: 00-00023 CONFIGURATION ON APPENDIX A
STANDARD : FCC CFR47 PART15 DATE OF 1997 CLASS B D=3m
MEASUREMENT : ELECTRIC FIELD 30-1000MHz
CONDITIONS : 120V/60Hz
DATE : 19 August 1998

MEASUREMENT DONE BY : D.RAUD

