



FCC CERTIFICATION TEST REPORT

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EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18,2002

Test report # : 019054DR

TEST LAB FCC ID: I6U

This report concerns : Original grant ☒ Class II change ☐

Equipment tested : Radio Frequency Identifier for CARD PRINTER

Equipment FCC ID : MX5402920001

Designed by : ZEBRA TECHNOLOGIES
ZI rue d'AMSTERDAM
44470 VARADES - FRANCE

Manufactured by : ELTRON
1001 Flynn Road
CAMARILLO - CA 93012

Deferred grant requested per 47 CFR 0.457 (d)(1)(ii)

YES ☐ NO ☒

if yes, defer until :

Company Named agrees to notify the Commission by :

of the intended date of announcement of the product so that the grant can be issued on the date

Transition rules requested per 15.37?

YES ☐ NO ☒

If no, assumed Part 15, Subpart B for intentional or
unintentional radiator

The new 47 CFR [10-1-96 edition] provision

Technical control: Olivier ROY

GYL technologies
1, rue Fleming 49066 ANGERS
Tel. : 02.41.36.22.33
Fax : 02.41.36.22.23

Quality Control: Lucien MONTIEL



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1 E.U.T TECHNICAL DESCRIPTION

1.1 PRODUCT DESCRIPTION

The 13,56 MHz Radio Frequency Identifier (RFID) is composed of :

A transceiver (emitter and receiver) placed on an electronic board (see exhibit 5)

A passive transceiver embedded in the printing ribbon frame (see exhibit 5)

This features is used in printer family range whose purpose is printing cards. Its primary function is to check if the inserted printing ribbon is the right one. Pictures given in exhibit 2. show how the RFID cards are mounted on two different printer models

1.2 LIST OF EMI CRITICAL COMPONENTS

ITEM	Reference	Frequency	Manufacturer
Oscillator	ABLS-10.000-18-R70-B-4-Y-FT	10.00 MHz	Prime Elect
Oscillator	ABLS-13.5600-18-R70-B-4-Y-FT	13.56 MHz	Prime Elect
Ferrite bead	Steward: LI0805H121R		Kent Elect.
Inductance	0805CS-681XJBC	680 nH 5%	Coilcraft
Inductance	0805CS-391XGBC	390 nH 2%	Coilcraft
Inductance	0805CS-821XGBC	820 nH 2%	Coilcraft

1.3 TESTED SYSTEMS DETAILS

The FCC IDs for all equipment, plus description of all cables used in the tested system (including inserted cards, which have grants) are:

Description Model & Serial number	FCC ID	Cable description	Cable termination	Length (m)
Radio Frequency Identifier (RFID)	Submitted for Grant	None	None	None
Printer Model 210	FCC Class B Test report 019054 DK	serial shielded cable parallel shielded cable	Plastic molded	2 m 1,8 m
DELL Portable PC	DoC	USB shielded cable	metallic	1,5 m
EOS ZVC65SG24E AC/DC adapter or PowerBox SPN-270-24 AC/DC adapter		unshielded cable	plastic molded jack	1.5m
Printer Model 310	FCC Class B Test report 019041CH	USB shielded cable parallel shielded cable	Plastic molded	2 m 1,8 m
NEC POWERMATE PC model NLX7YA06402US	DoC	USB shielded cable	metallic	1,5 m
Zenith Display ZCM1426-XT	CKLHCM-427	shielded cable	Plastic molded	1m
Mouse Microsoft	C3KKMP5	unshielded cable	Plastic molded	1.5 m



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1.4 TEST METHODOLOGY AND PROCEDURE

Both conducted and radiated testing were performed in accordance with ANSI C63.4 procedure, as revised in 1992. The specification used was the Class B limits of FCC Rules Part 15 Subpart B for conductive (§ 15-107) and radiated (§ 15-109) interference measurements and Subpart C (§ 15.201 to 15.209 and §15.225) for intentional radiator.

Final radiated measurement is performed with an antenna located at 3 meters distance from EUT (Preliminary radiated emission test (prescan) was realized at a distance of 1 meter in the underground of open area test site)

1.5 TEST SITE

The open area test site and conducted measurement facility used to collect the radiated data is located at the following address:

GYL TECHNOLOGIES
18 Rue du Nid de Pie
49008 ANGERS Cedex 01
France

This site has been fully described in a report dated September 20, 2000 submitted to your Office, and accepted in a letter dated June 18, 2001

1.6 LIST OF MEASUREMENT APPARATUS

APPARATUS	MANUFACTURER	REFERENCE	SERIAL NUMBER	VERIFICATION DATE
RECEIVERS				
CISPR Receptive chain :	Hewlett Packard	HP 8574A		28/11/2000
Quasi-Peak Detector	Hewlett Packard	HP 85650A	2811A01134	28/11/2000
Spectrum Analyzer	Hewlett Packard	HP 8568B	2816A116603	28/11/2000
Pre-selector	Hewlett Packard	HP 85685A	287A00784	28/11/2000
EMI Software (For conducted emission)	Hewlett Packard	HP 85869A		28/11/2000
REMS Software (For radiated emission)	Hewlett Packard	HP 85879A Rev A.02.01		28/11/2000
ARTIFICIAL MAINS NETWORKS				
LISN	Rohde & Schwarz	ESH2-Z5	871777/031	28/11/2000
LISN	Rohde & Schwarz	ESH2-Z5	872094/037	28/11/2000
ANTENNAS				
Bilog	Chase	CBL6112	2290	28/11/2000
H Field loop antenna	Rohde & Schwarz	HFH2-Z2	8719200/36	28/11/2000



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2 SYSTEM TEST CONFIGURATION

2.1 JUSTIFICATION

Two printers, representing the worst case applications, were selected to validate the RFID for the whole printer family range.

Different printed circuit shape but same components, circuitry and electrical schematic

Distance and positioning versus motherboard

Number of electronic cards

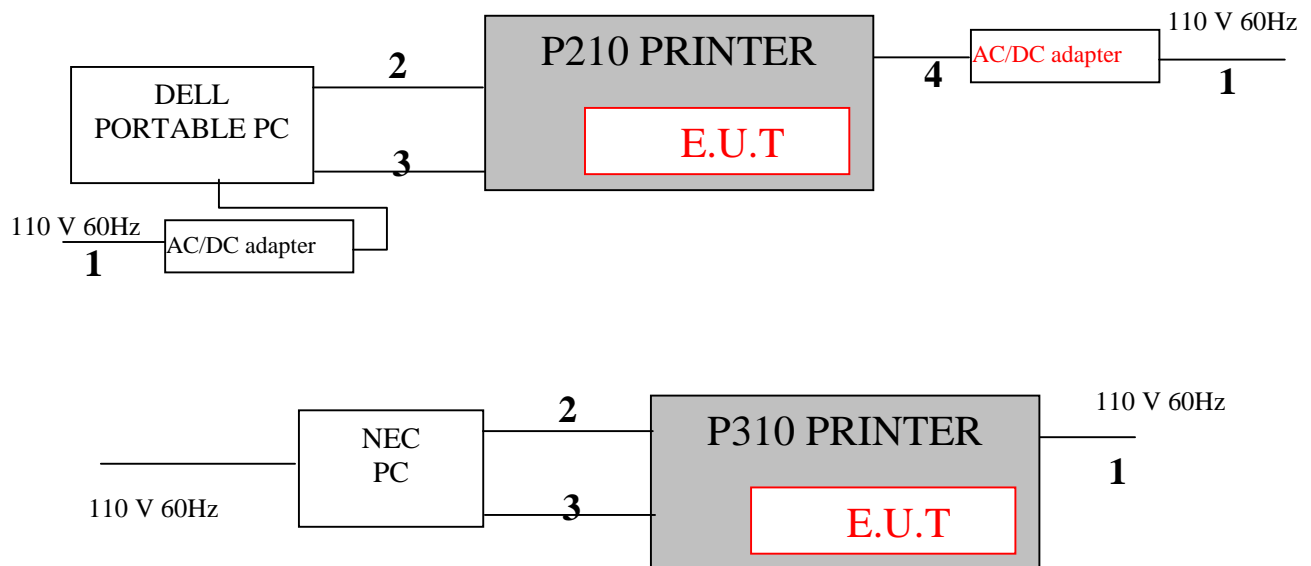
Internal wiring complexity

Plastic and metal enclosures

In both cases, the hereunder-described test configuration was chosen to place the equipment under test in the worst case conditions and having the RFID device working in a continuous mode.

For each configuration, two conducted lines perturbations measurements are performed, one on external power supply of the P.C and one on the mains cord of the E.U.T. The radiated perturbations or emissions measurements are also performed with EUT and P.C in the field measurement area.

2.2 EUT TEST CONFIGURATION DIAGRAM



- 1 Mains power cord 1.5m long (2 wires + ground)
- 2 parallel shielded cable
- 3 USB shielded cable
- 4 24 V dc cable



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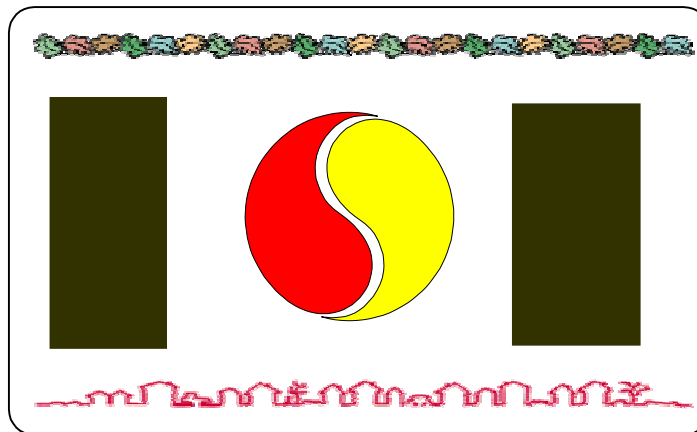
January 18,2002

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2.3 EUT EXERCISING CONDITIONS

Conducted and radiated measurement are made when printing a typical card with contrast and saturation parameters set to default values (Word 97) as shown by the hereunder figure.

In order to have the equipment running in the worst case conditions, Open area measurement are made in USB mode and parallel mode.



[illegible]



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3.3 SUMMARY OF 6 HIGHEST SIGNALS PER WIRE MEASURED ON EACH CONFIGURATION

PRODUCT P210 Printer model	Test Result	MINIMUM MARGIN				Data and Plot on following pictures
		WIRE LINE		NEUTRAL LINE		
		dBμV	MHz	dBμV	MHz	
with EOS AC/DC adapter	Pass	35.3	0.5147	33.2	0.504	Appendix P210 1-1 to 1-8
	Pass	29.4	0.6087	32.3	0.6537	
	Pass	29.9	0.7962	32.4	0.6732	
	Pass	32.6	0.888	30.3	0.8917	
	Pass	29.5	1.011	31.4	1.028	
	Pass	36.6	13.52	37	13.52	
with Power Box AC/DC adapter	Pass	35.3	0.4693	37.1	0.4732	Appendix P210 1-9 to 1-16
	Pass	38.7	3.301	36.1	2.948	
	Pass	35.6	11.53	41.1	12.54	
	Pass	46.2	13.52	46.9	13.52	
	Pass	35.2	19.72	39.7	14.95	
	Pass	37	20.74	36.9	16.33	

PRODUCT P310 Printer model	Test Result	MINIMUM MARGIN				Data and Plot on following pictures
		WIRE LINE		NEUTRAL LINE		
		dBμV	MHz	dBμV	MHz	
using Parallel interface in standby then printing mode	Pass	38.1	13.52	38.8	13.52	Appendix P310 1-1 to 1-4
	Pass	32.8	13.86	33.9	14.1	
	Pass	33.8	15.08	33.9	15.08	
	Pass	32.2	15.72	30.3	16.33	
	Pass	28.7	16.74	35.6	24.94	
	Pass	34.8	24.94	27.8	26.23	
using USB interface in standby then printing mode	Pass	13.52	36.3	13.52	36.4	Appendix P310 1-5 to 1-8
	Pass	14.4	32.8	14.4	33	
	Pass	15.99	30.4	15.14	32.3	
	Pass	17.24	28.7	15.85	30	
	Pass	24.94	38.8	24.94	38.8	
	Pass	26.23	34.8	26.9	33.6	

CISPR RECEPTIVE CHAIN H.P 8574A CONFIGURATION		
Quasi-Peak Adapter	Normal mode, Band With = 9 kHz	
Spectrum Analyzer	Resolution Band With = 100 kHz Video Band With = 300 kHz	
	Sweep min	Peak measurement : 100 ms/MHz Quasi-peak measurement : 200s/MHz
Pre-selector	Normal mode, Internal preamplifier : 20 dB	

All readings are quasi-peak unless stated otherwise.



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4 OPEN FIELD RADIATED EMISSION (§ 15.109 class B)

4.1 TEST RESULTS MEASUREMENTS

During testing no significant emission problem was observed. The minimum margin measured is around 3dB

The following data tables lists the most significant emission frequencies, measured level, correction factor (includes cable and antenna corrections), corrected reading and the limit. The highest peaks are measured in quasi-peak detection mode. Correction factors are mentioned in the appendixes giving the detailed results

4.2 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and cable loss, and subtracting the preamplifier gain (if any) from the measurements reading. The basic equation with a sample calculation is

$$FS = RA + AF + CF + PG,$$

Where: FS = Field Strength; RA = Receiver Amplitude; AF = Antenna Factor;
CF = Cable loss; PG = Preamplifier Gain (Pre-selector)

Assuming a receiver reading. The antenna factor and the cable loss are added while the internal pre-selector gain of 20 dB is subtracted, giving the field strength. REMS software performs calculation and result are given in column ABS of Measurements results table.

4.3 SUMMARY OF 6 HIGHEST SIGNALS MEASURED ON THE P210 CONFIGURATION

PRODUCT	Result	MINIMUM MARGIN		Data and Plot on following Pictures
		dBµV	MHz	
P210 Printer equipped with EOS AC/DC adapter	Pass	37.2	60.022	Appendix P210 2-1 and 2-2
	Pass	38.5	120.056	
	Pass	43.5	288.000	
	Pass	44.2	612.161	
	Pass	41.9	612.166	
	Pass	44.3	636.118	

PRODUCT	Result	MINIMUM MARGIN		Data and Plot on following Pictures
		dBµV	MHz	
P210 Printer equipped with Power Box AC/DC adapter	Pass	37.6	83.992	Appendix P210 2-3
	Pass	36.0	96.031	
	Pass	40.7	516.098	
	Pass	41.4	540.121	
	Pass	41.1	612.124	
	Pass	38.6	636.110	



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4.4 SUMMARY OF 6 HIGHEST SIGNALS MEASURED ON THE P310 CONFIGURATION

4.4.1 USB INTERFACE STANBY AND PRINTING MODE

PRODUCT	Result	MINIMUM MARGIN		Data and Plot on following Pictures
		dB μ V	MHz	
P310 Printer equipped with Tektris power supply	Pass	37.2	58.973	Appendix P310 2-1 to 2-2
	Pass	32.1	63.980	
	Pass	38.4	200.453	
	Pass	35.2	255.988	
	Pass	38.9	352.007	
	Pass	41.7	767.995	

4.4.2 PARALLEL INTERFACE STANBY AND PRINTING MODE

PRODUCT	Result	MINIMUM MARGIN		Data and Plot on following Pictures
		dB μ V	MHz	
P310 Printer equipped with Tektris power supply	Pass	33.4	44.260	Appendix P310 2-3 to 2-4
	Pass	31.4	56.710	
	Pass	37.0	58.973	
	Pass	34.1	63.989	
	Pass	38.4	200.453	
	Pass	42.2	768.002	

CISPR RECEPTIVE CHAIN H.P 8574A CONFIGURATION		
Quasi-Peak Adapter	Normal mode Band With = 120 kHz	
Spectrum Analyzer	Resolution Band With = 1 MHz Video Band With = 3 MHz	
	Sweep min	Peak measurement : 1 ms/MHz Quasi-peak measurement : 20s/MHz
Pre-selector	Normal mode Internal preamplifier : 20 dB	

All readings are quasi-peak unless stated otherwise.



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5 FIELD STRENGTH OF INTENTIONAL RADIATOR VERSUS PART 15 SUBPART C §15.225, 15.209, 15.205

5.1 MEASUREMENT OF FREQUENCY STABILITY(§15.225 (C))

Nominal value at 20 °C temperature and 5 V voltage: 13,559 MHz

Test Conditions		Frequency (MHz)				Test Results
Temperature	Voltage	Low limit	Measured	High limit	Measured	
-20 °C	4.25 V	13.5577	13.5588	13.5603	13.5588	Pass
+ 50°C	4.25 V		13.5588		13.5588	Pass
-20 °C	5.75 V		13.5589		13.5589	Pass
+ 50°C	5.75 V		13.5589		13.5589	Pass

5.2 HARMONIC LEVEL MEASUREMENT

Measurements were performed on fundamental frequency h1 until the 10th harmonic. Preliminary spectrum signature was conducted at 1 meter from EUT, final measurement being conducted at 3 meters distance from EUT according to ANSIC63.4 measurement method described in §8.

Test conditions: see § 2.1 to 2.3 of this report

Peak detection is used instead of average; the result is equal for continuous wave

RBW = 100 kHz for fundamental frequency (h1) measurement (VBW=3*RBW)

RBW = 5 kHz for harmonic greater than fundamental frequency (h1) measurement (VBW=3*RBW)

5.2.1 MEASUREMENT DONE ON PRINTER P210 MODEL

Harmonic number	Frequency (MHz)	Antenna factor dB D= 3m	Cable loss dB	Measured level dBμV/m		Limit (D=3m) dBμV/m (**)		Margin	Results
				D= 1m	D= 3m	§ 15.225	§15.209		
h1	13.5591553	20	0.9	75.2	54	80		-26	Pass
h2	27.1183106	20	0.8	24.3	15.1		40	-24.9	Pass
h3	40.6774659	13.8	1.0		29.2		40	-10.8	Pass
h4	54.2366212	9.0	1.0		17.2		40	-22.8	Pass
h5	67.7957765	7.2	1.2		24.4		40	-15.6	Pass
h6	81.3549318	8.7	1.3		27.3		40	-12.7	Pass
h7	94.9140871	11.5	1.5		31.2		40	-8.8	Pass
h8	108.473242	12.5	1.5		27.4		40	-12.6	Pass
h9	122.032398	13.2	1.6		27.1		40	-12.9	Pass
h10	135.591553	12.9	1.7		25.2		40	-14.8	Pass

(**) Unit change: 80 dBμV/m = 10 mV/m, 40dBμV/m = 0.1mV/m



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5.2.2 MEASUREMENT DONE ON PRINTER P310 MODEL USING USB INTERFACE

Harmonic number	Frequency (MHz)	Antenna factor dB D= 3m	Cable loss dB	Measured level dBμV/m		Limit (D=3m) dBμV/m ^(**)		Margin	Results
				D= 1m	D= 3m	§ 15.225	§ 15.209		
h1	13.5591553	20	0.9	62	34.5	80		-45.5	Pass
h2	27.1183106	20	0.8	23.2	23.2		40	-16.8	Pass
h3	40.6774659	13.8	1.0	20	4.8		40	-35.2	Pass
h4	54.2366212	9.0	1.0	14.9	8.2		40	-31.8	Pass
h5	67.7957765	7.2	1.2	9.56	16.5		40	-23.5	Pass
h6	81.3549318	8.7	1.3	5.5	4.1		40	-35.9	Pass
h7	94.9140871	11.5	1.5	9.2	17.2		40	-22.8	Pass
h8	108.473242	12.5	1.5	0.2	1.2		40	-38.8	Pass
h9	122.032398	13.2	1.6	10.8	5.8		40	-34.2	Pass
h10	135.591553	12.9	1.7	5.6	11.6		40	-28.4	Pass

5.2.3 MEASUREMENT DONE ON PRINTER P310 MODEL USING PARALLEL INTERFACE

Harmonic number	Frequency (MHz)	Antenna factor dB D= 3m	Cable loss dB	Measured level dBμV/m		Limit (D=3m) dBμV/m ^(**)		Margin	Results
				D= 1m	D= 3m	§ 15.225	§ 15.209		
h1	13.5591553	20	0.9	62	34.5	80		-45.5	Pass
h2	27.1183106	20	0.8	23.2	23.2		40	-16.8	Pass
h3	40.6774659	13.8	1.0	20.4	15.5		40	-24.5	Pass
h4	54.2366212	9.0	1.0	15.4	11.4		40	-28.6	Pass
h5	67.7957765	7.2	1.2	6.9	17.1		40	-22.9	Pass
h6	81.3549318	8.7	1.3	3.1	1.1		40	-38.9	Pass
h7	94.9140871	11.5	1.5	10.2	11.2		40	-28.8	Pass
h8	108.473242	12.5	1.5	1.2	1.2		40	-38.8	Pass
h9	122.032398	13.2	1.6	12.8	8.8		40	-31.2	Pass
h10	135.591553	12.9	1.7	8.6	10.6		40	-29.4	Pass



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Appendices

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P210 PRINTER MODEL DETAILED TEST RESULTS



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P210

Annex :1-1

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 16:12:18

1. SETUP

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

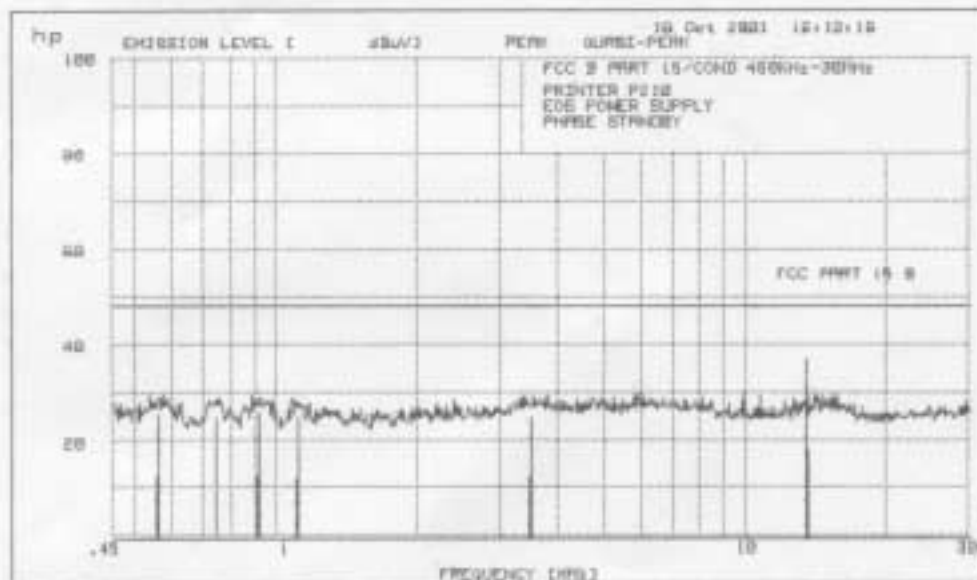
PRINTER P210

EOS POWER SUPPLY

PHASE STANDBY

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5621	25.4	-22.6
2	.7476	24.5	-23.5
3	.9183	25.6	-22.4
4	1.114	24.5	-23.5
5	3.501	24.3	-23.7
6	13.52	36.6	-11.4





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Annex :1-2

EQUIPMENT FCC ID : MX5402920001

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Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 16:28:52

1. SETUP

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

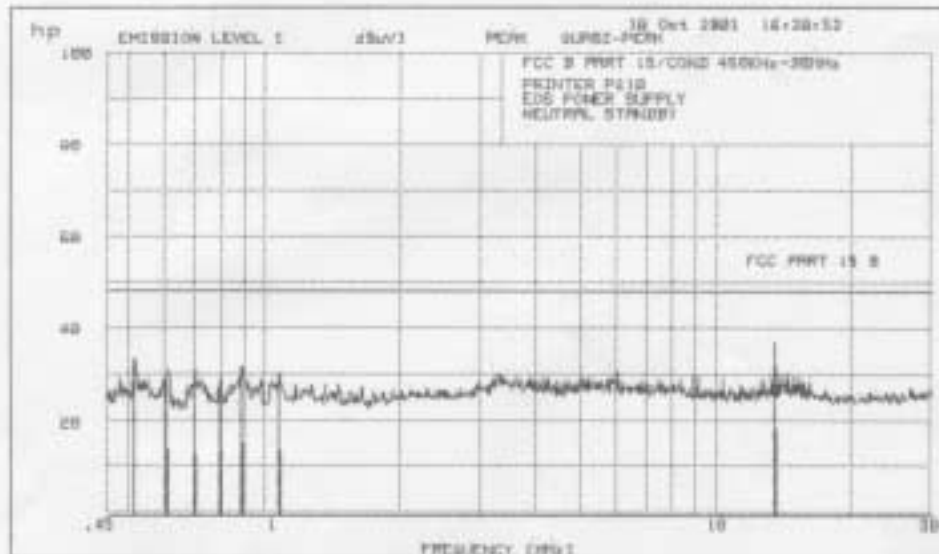
PRINTER P210

EOS POWER SUPPLY

NEUTRAL STANDBY

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5147	31.8	-16.2
2	.6087	28.3	-15.7
3	.702	25.1	-22.9
4	.7995	26.7	-21.3
5	.8917	30.3	-17.7
6	1.077	27.5	-20.5
7	13.52	36.2	-11.8





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Annex :1-3

EQUIPMENT FCC ID : MX5402920001

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Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 15:48:59

1. SETUP

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

PRINTER P210

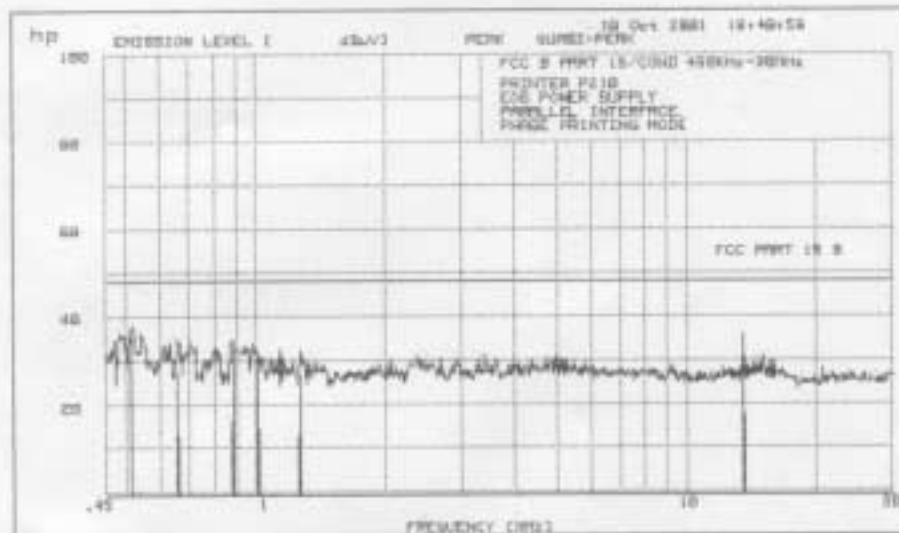
EOS POWER SUPPLY

PARALLEL INTERFACE

PHASE PRINTING MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 5 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.6147	35.3	-12.7
2	.6592	26.6	-21.4
3	.898	32.6	-16.4
4	1.011	29.5	-19.5
5	1.253	26.4	-21.6
6	13.62	35.2	-12.8





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Annex :1-4

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Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 15:57:02

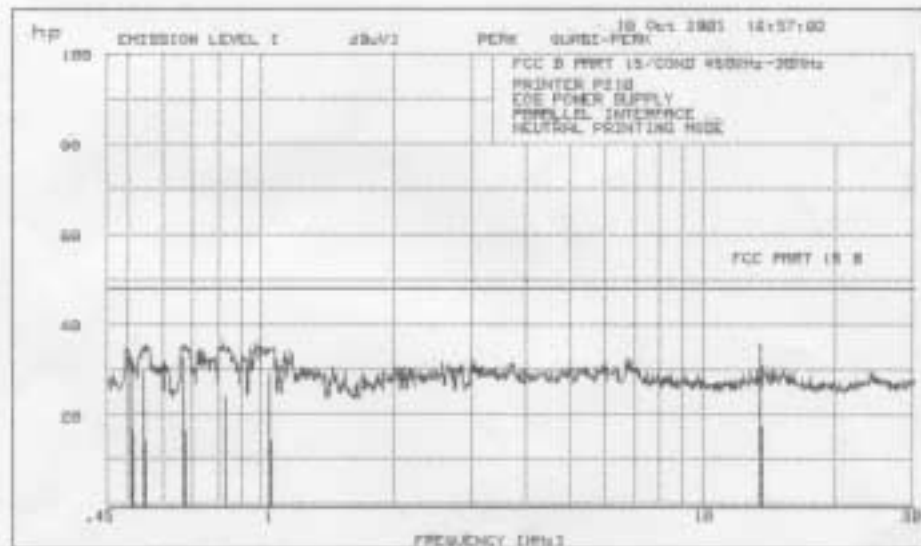
1. SETUP

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

PRINTER P210
EOS POWER SUPPLY
PARALLEL INTERFACE
NEUTRAL PRINTING MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 5 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5104	32.7	-15.3
2	.5458	29.1	-18.9
3	.6732	32.4	-15.6
4	.8338	23.8	-24.2
5	1.05	28.6	-15.4
6	13.52	34.9	-13.1





FCC CERTIFICATION TEST REPORT

P210

Annex :1-5

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 17:15:59

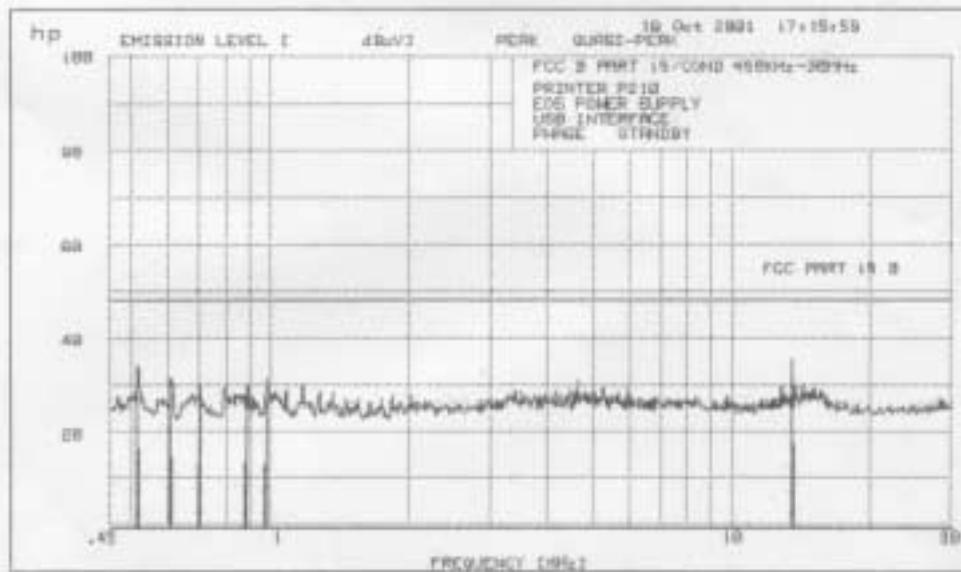
1. SETUP

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

PRINTER P210
EOS POWER SUPPLY
USB INTERFACE
PHASE STANDBY

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5168	33	-15.0
2	.6887	29.4	-18.6
3	.785	27.4	-20.6
4	.888	27.5	-20.5
5	.982	26.6	-21.4
6	13.52	35.2	-12.8





FCC CERTIFICATION TEST REPORT

P210

Annex :1-6

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 17:25:11

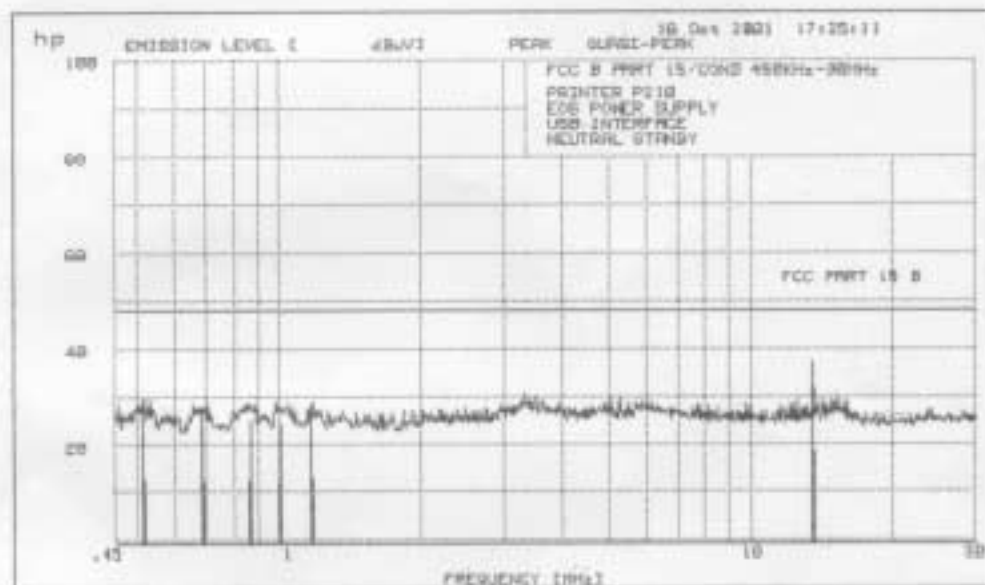
1. SETUP

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

PRINTER P210
EOS POWER SUPPLY
USB INTERFACE
NEUTRAL STANDBY

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5168	25.9	-22.1
2	.6903	24.9	-23.1
3	.8695	24.8	-23.2
4	1.007	24.2	-23.8
5	1.171	26.4	-21.6
6	13.52	37	-11.0





FCC CERTIFICATION TEST REPORT

P210
Annex :1-7

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D. RAUD

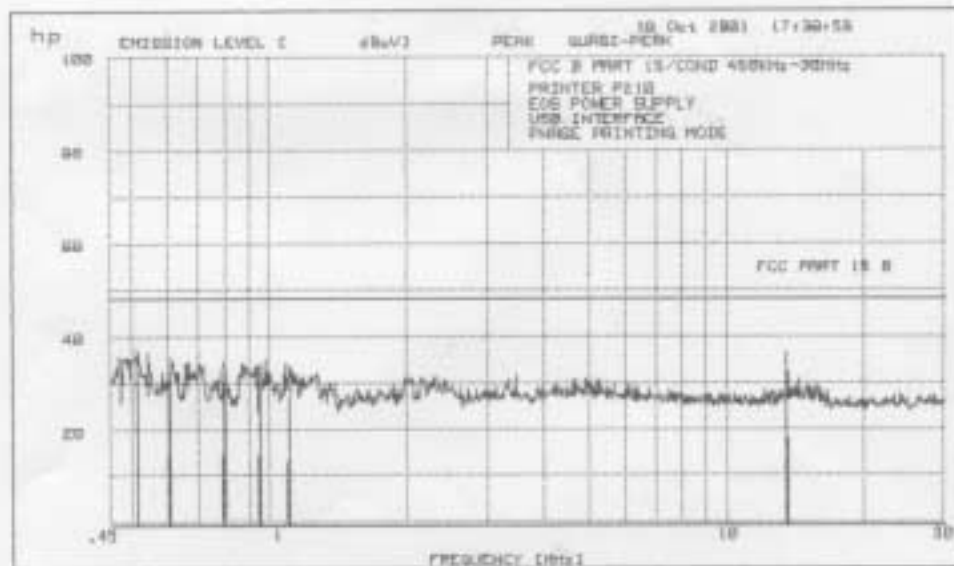
18 Oct 2001 17:38:56

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

PRINTER P210
EOS POWER SUPPLY
USB INTERFACE
PHASE PRINTING MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.5147	35.1	-12.9
2	.6062	30.1	-17.9
3	.7962	29.9	-18.1
4	.9536	29.3	-18.7
5	1.104	26.6	-21.4
6	13.52	36.6	-11.5





FCC CERTIFICATION TEST REPORT

P210

Annex :1-8

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 17:46:06

1. SETUP

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

PRINTER P210

EOS POWER SUPPLY

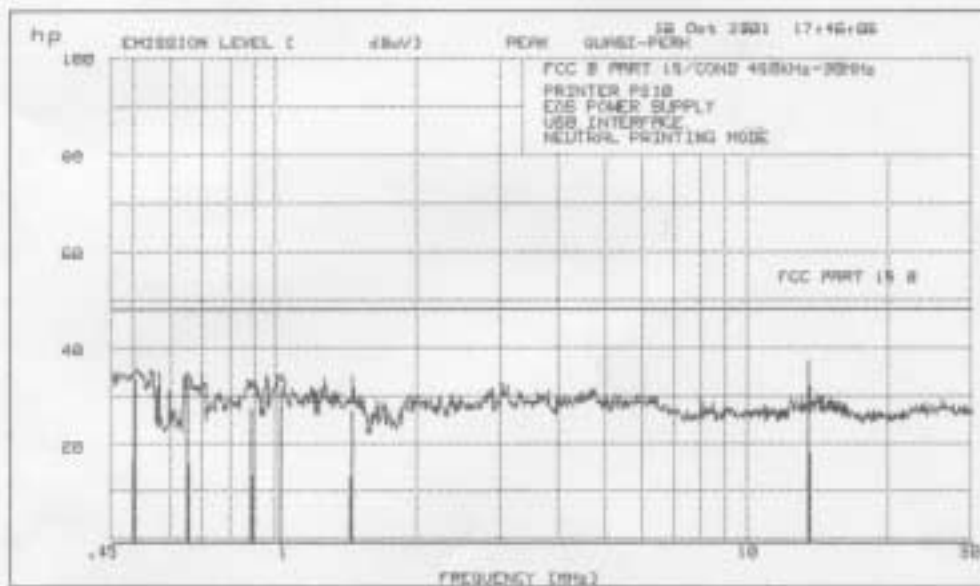
USB INTERFACE

NEUTRAL PRINTING MODE

Quasi-Peaks above -30 dB of Limit Line #1

peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.504	33.2	-14.8
2	.6537	32.3	-15.7
3	.8917	27.1	-20.9
4	1.028	31.4	-16.6
5	1.451	26.6	-21.4
6	13.52	36.7	-11.3





FCC CERTIFICATION TEST REPORT

P210

Annex :1-9

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 18:01:40

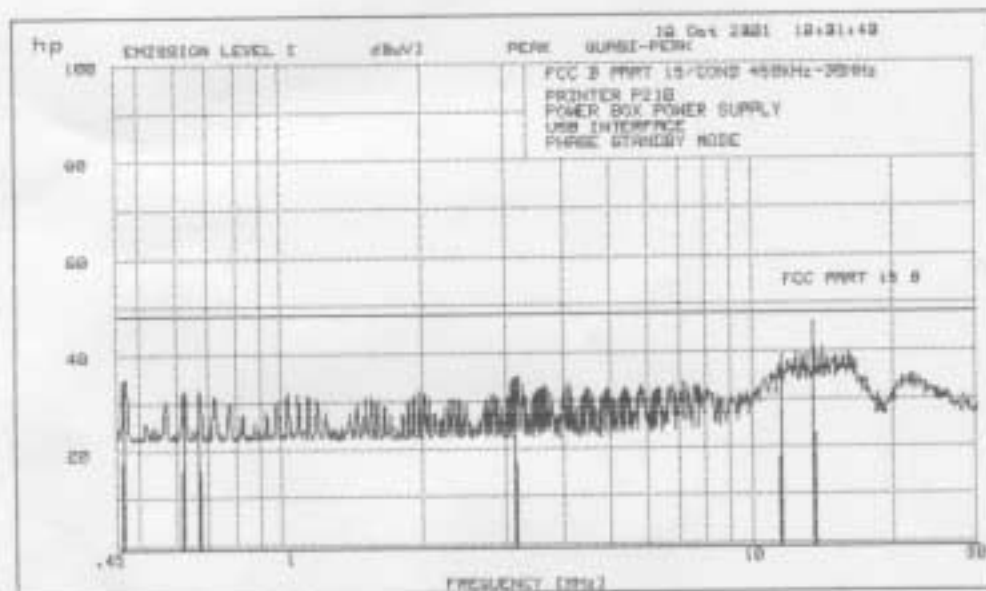
1. SETUP

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

PRINTER P210
POWER BOX POWER SUPPLY
USB INTERFACE
PHASE STANDBY MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4654	34.7	-13.3
2	.6216	31.6	-16.4
3	.6732	31.6	-16.4
4	3.153	34.1	-13.9
5	11.53	35.6	-12.4
6	13.52	46.2	-1.8





FCC CERTIFICATION TEST REPORT

P210

Annex :1-10

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D. RAUD

18 Oct 2001 18:09:33

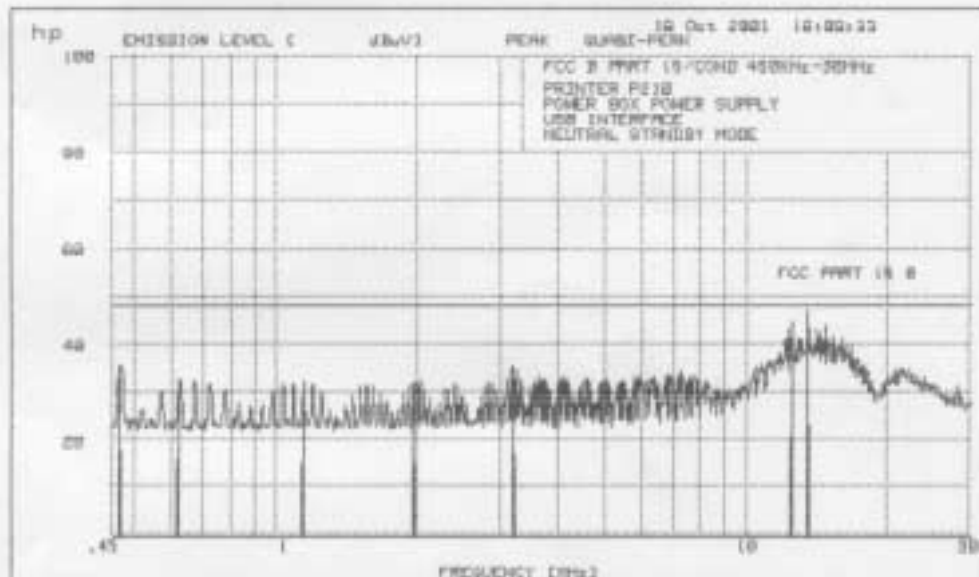
1. SETUP

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

PRINTER P210
POWER BOX POWER SUPPLY
USB INTERFACE
NEUTRAL STANDBY MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4673	34.9	-13.1
2	.6216	31.1	-16.9
3	1.142	30.6	-17.4
4	1.971	30.7	-17.3
5	3.219	34.1	-13.9
6	12.54	41.1	-6.9
7	13.52	46.7	-1.3





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P210

Annex :1-11

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 18:18:01

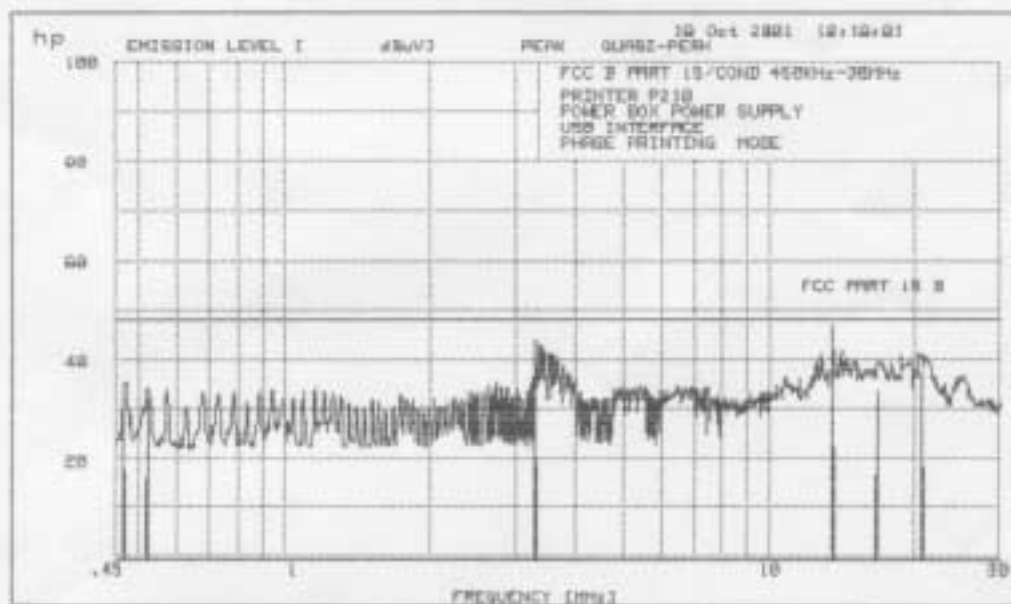
1. SETUP

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

PRINTER P210
POWER BOX POWER SUPPLY
USB INTERFACE
PHASE PRINTING MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 5 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4673	34.7	-13.3
2	.5234	31.8	-16.2
3	3.301	38.7	-9.3
4	13.52	45	-3.0
5	16.74	33.4	-14.6
6	20.74	37	-11.0





FCC CERTIFICATION TEST REPORT

P210

Annex :1-12

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

18 Oct 2001 18:28:44

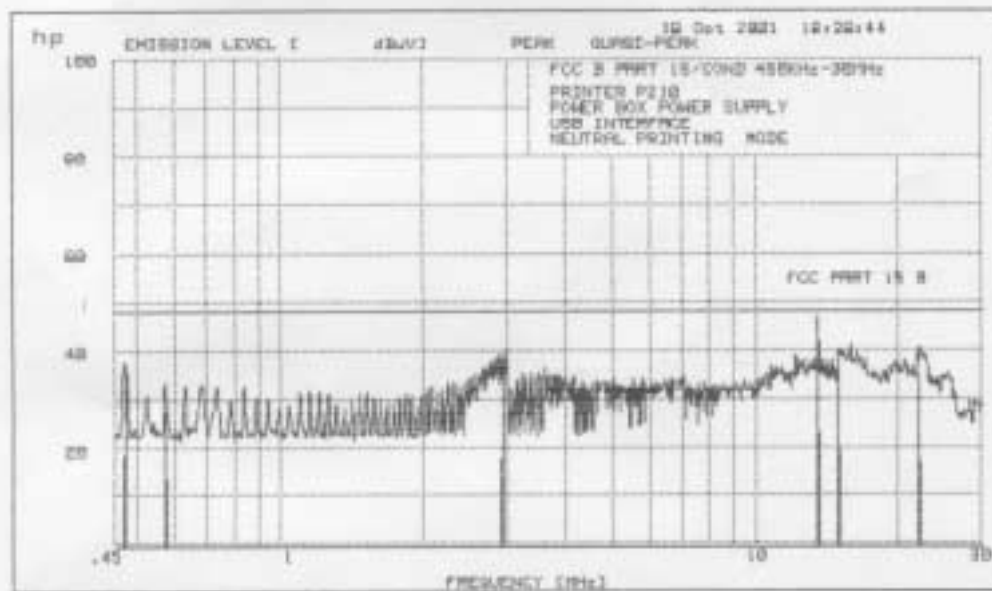
1. SETUP

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

PRINTER P210
POWER BOX POWER SUPPLY
USB INTERFACE
NEUTRAL PRINTING MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4732	37.1	-10.9
2	.5764	27.2	-20.8
3	2.948	36.1	-11.9
4	13.52	46.9	-1.1
5	14.96	39.7	-8.3
6	22.18	34.3	-13.7





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P210

Annex :1-13

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

19 Oct 2001 10:55:34

1. SETUP

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

PRINTER P210

POWER BOX POWER SUPPLY

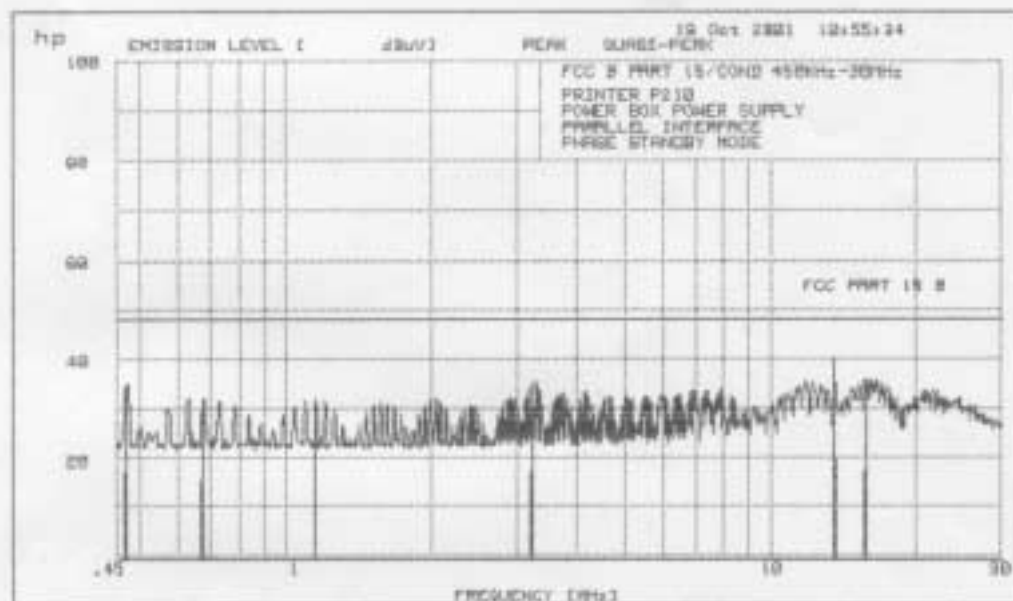
PARALLEL INTERFACE

PHASE STANDBY MODE

Quasi-Peaks above -30 dB of Limit Line #1

peak criteria = 5 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4693	34.3	-13.7
2	.676	30.8	-17.2
3	1.147	30.9	-17.1
4	3.233	34.1	-13.9
5	13.52	40	-8.0
6	15.72	34.8	-13.2





FCC CERTIFICATION TEST REPORT

P210

Annex :1-14

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

19 Oct 2001 11:02:28

1. SETUP

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

PRINTER P210

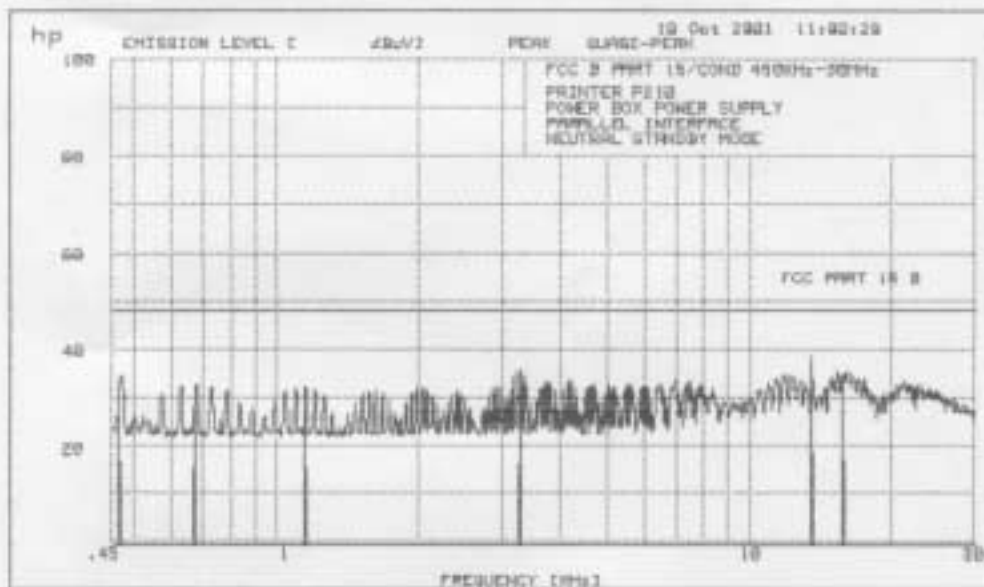
POWER BOX POWER SUPPLY

PARALLEL INTERFACE

NEUTRAL STANDBY MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4673	33.2	-14.8
2	.676	31.4	-16.6
3	1.152	31.1	-16.9
4	3.288	33.1	-14.9
5	13.52	38.3	-9.7
6	15.79	34.4	-13.6





FCC CERTIFICATION TEST REPORT

P210

Annex :1-15

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/50Hz
MEASUREMENTS DONE BY : D.RAUD

19 Oct 2001 11:18:38

1. SETUP

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

PRINTER P210

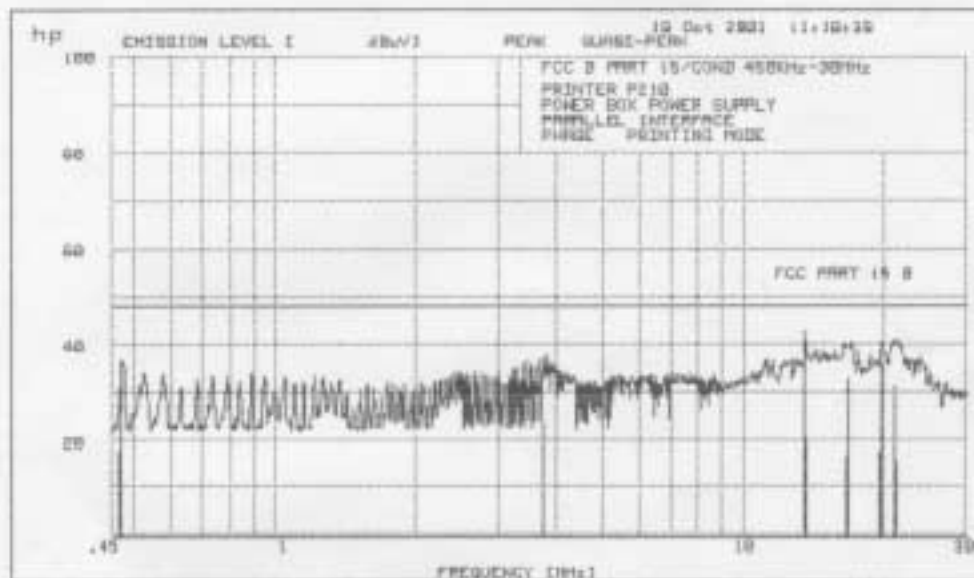
POWER BOX POWER SUPPLY

PARALLEL INTERFACE

PHASE PRINTING MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4693	35.3	-12.7
2	3.744	23.3	-24.7
3	13.52	41.5	-6.5
4	16.74	32.4	-15.6
5	19.72	35.2	-12.8
6	21.18	30.9	-17.1





FCC CERTIFICATION TEST REPORT

P210

Annex :1-16

EQUIPMENT FCC ID : MX5402920001

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

19 Oct 2001 11:29:49

1. SETUP

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

PRINTER P210

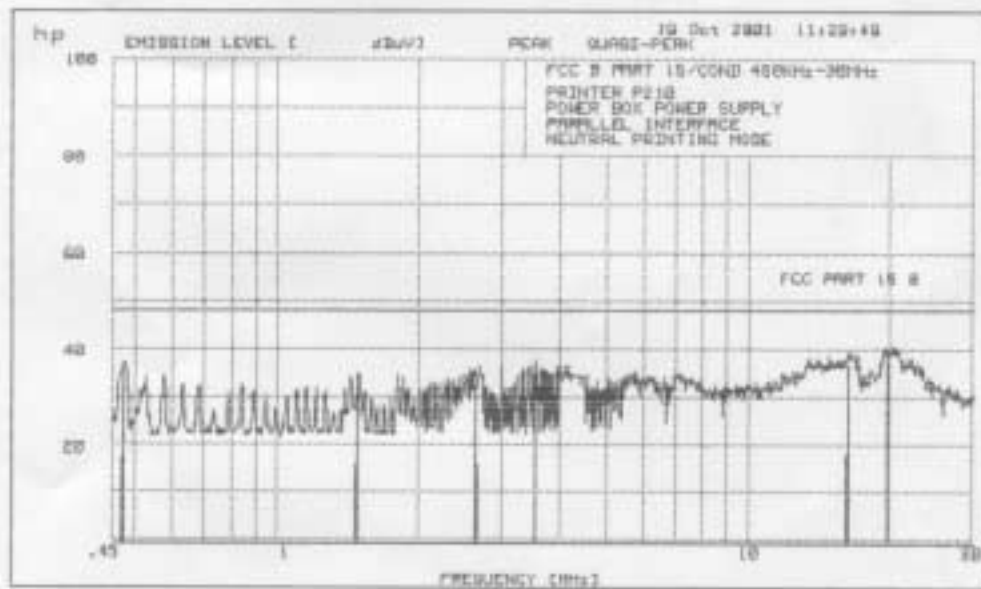
POWER BOX POWER SUPPLY

PARALLEL INTERFACE

NEUTRAL PRINTING MODE

Quasi-Peaks above -30 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.4732	35.4	-12.6
2	1.475	31.8	-16.2
3	2.654	32.2	-15.8
4	3.546	33.6	-14.2
5	16.33	36.9	-11.1
6	19.8	39.6	-8.4





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P210

Annex :2-1

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

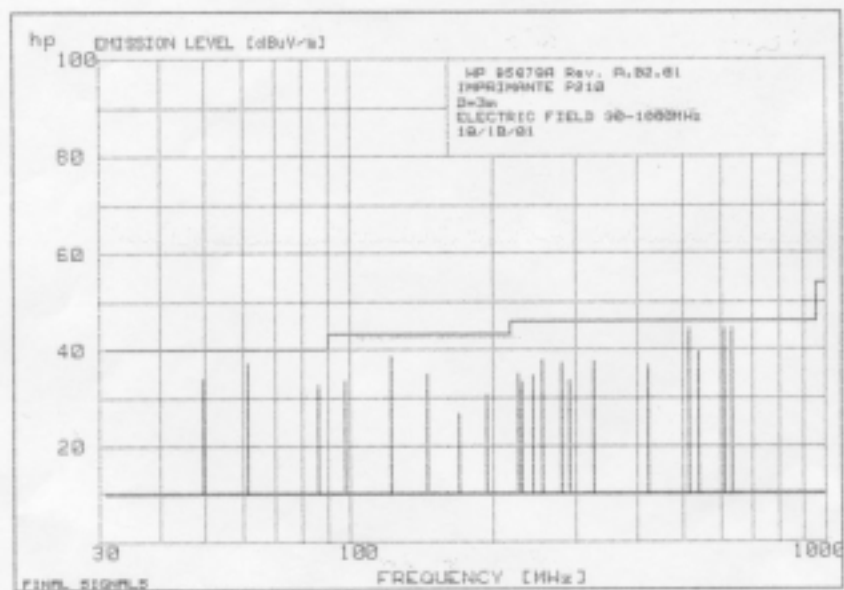
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1000 MHz (D=3m)
CONDITIONS : 120V/60Hz; With EOS power supply and parallel interface
STANDBY and PRINTING modes.
DATE : October, 18 of 2001
MEASUREMENT DONE BY : D.RAUD

PRODUCT EMISSIONS

HP 05079A Rev. A.02.01

Data File: CH.E D=3m //EOS 18 Oct 2001 13:10

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS			SITE			CORR FACTOR dB	COMMENTS
			ABS	dLIM	MODE	POL	HGT cm	AZM deg		
1	48.010	40.0	33.9	-6.1	QP	V	140	185	11.9	IMPRESSION
2	60.022	40.0	37.2	-2.8	QP	V	140	25	0.6	IMPRESSION
3	84.030	40.0	32.6	-7.4	PK	V	140	190	10.8	
4	96.031	43.5	33.5	-10.0	QP	V	140	190	13.1	CBL IMPRIMANTE
5	120.056	43.5	30.5	-5.0	QP	V	120	35	14.6	IMPRESSION
6	144.031	43.5	35.0	-8.5	QP	V	140	175	14.	IMPRESSION
7	168.017	43.5	26.6	-16.9	QP	V	130	25	13.2	
8	192.026	43.5	30.5	-13.0	QP	H	170	175	12.3	
9	224.000	46.0	34.9	-11.1	PK	H	170	125	14.4	
10	228.070	46.0	33.3	-12.7	QP	H	170	10	14.7	
11	240.033	46.0	34.4	-11.6	QP	H	180	10	15.7	
12	252.036	46.0	37.8	-8.2	QP	H	180	260	16.6	
13	276.047	46.0	37.0	-9.0	PK	H	180	255	17.1	
14	288.028	46.0	33.7	-12.3	QP	V	190	240	17.4	
15	324.046	46.0	37.6	-8.4	QP	H	190	210	18.2	
16	420.000	46.0	36.4	-9.6	QP	V	190	200	20.6	
17	516.094	46.0	44.2	-1.8	QP	V	140	225	23.1	
18	540.094	46.0	39.4	-6.6	QP	V	130	175	23.5	
19	612.161	46.0	44.2	-1.8	QP	V	120	170	24.5	
20	636.118	46.0	44.3	-1.7	QP	V	120	160	24.2	





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P210

Annex :2-2

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

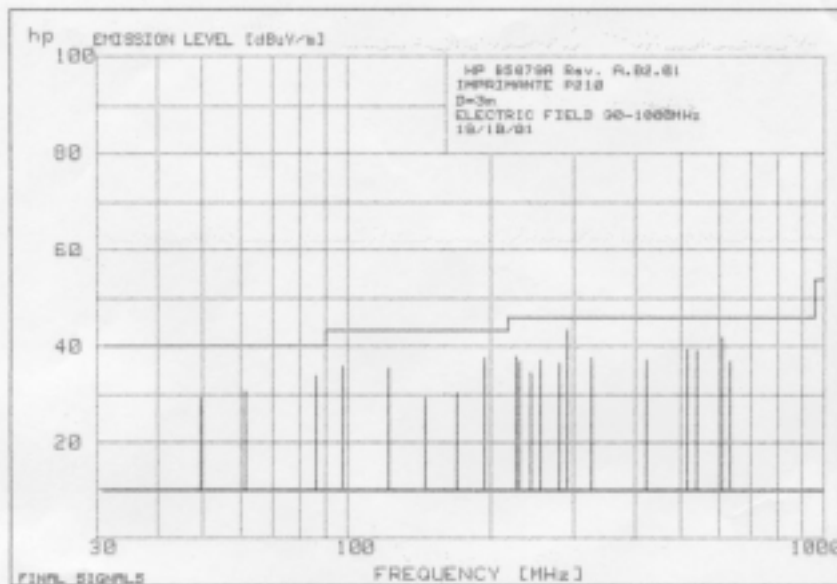
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1000 MHz (D=3m)
CONDITIONS : 120V/60Hz; With EOS power supply and USB interface
STANDBY and PRINTING modes.
DATE : October, 19 of 2001
MEASUREMENT DONE BY : D.RAUD

PRODUCT EMISSIONS

HP 85079A Rev. A.02.01

Data File: CH.E D=3m USB EOS 19 Oct 2001

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS			SITE			CORR FACTOR dB	COMMENTS
			ABS	dLIM	MODE	POL	HGT	AZM		
			dBuV/m	dB			cm	deg		
1	48.012	40.0	29.2	-10.8	QP	V	140	185	11.8	IMPRESSION
2	60.022	40.0	30.6	-9.4	QP	V	120	235	8.6	IMPRESSION
3	84.030	40.0	34.0	-6.0	QP	V	120	230	10.8	
4	96.007	43.5	36.0	-7.5	QP	V	120	95	13.1	CBL IMPRIMANTE
5	120.030	43.5	35.7	-7.8	QP	V	120	320	14.6	IMPRESSION
6	144.012	43.5	29.4	-14.1	QP	V	120	70	14.	IMPRESSION
7	168.050	43.5	30.2	-13.3	QP	V	120	50	13.2	
8	192.012	43.5	37.7	-5.8	QP	H	160	260	12.3	
9	224.033	46.0	37.7	-8.3	QP	H	160	260	14.4	
10	228.031	46.0	36.8	-9.2	QP	H	180	20	14.7	
11	240.033	46.0	34.4	-11.6	QP	H	180	20	15.7	
12	252.059	46.0	37.2	-8.8	QP	H	180	15	16.6	
13	276.047	46.0	36.4	-9.6	PK	H	160	285	17.1	
14	288.000	46.0	43.5	-2.5	QP	H	160	260	17.4	
15	324.054	46.0	37.6	-8.4	QP	V	180	175	18.2	
16	420.004	46.0	37.0	-9.0	QP	V	170	10	20.6	
17	516.009	46.0	39.4	-6.6	QP	V	140	180	23.1	
18	540.102	46.0	39.3	-6.7	QP	V	140	180	23.5	
19	612.166	46.0	41.9	-4.1	QP	H	180	345	24.5	
20	636.122	46.0	36.8	-9.2	QP	V	230	165	24.2	





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P210

Annex :2-3

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

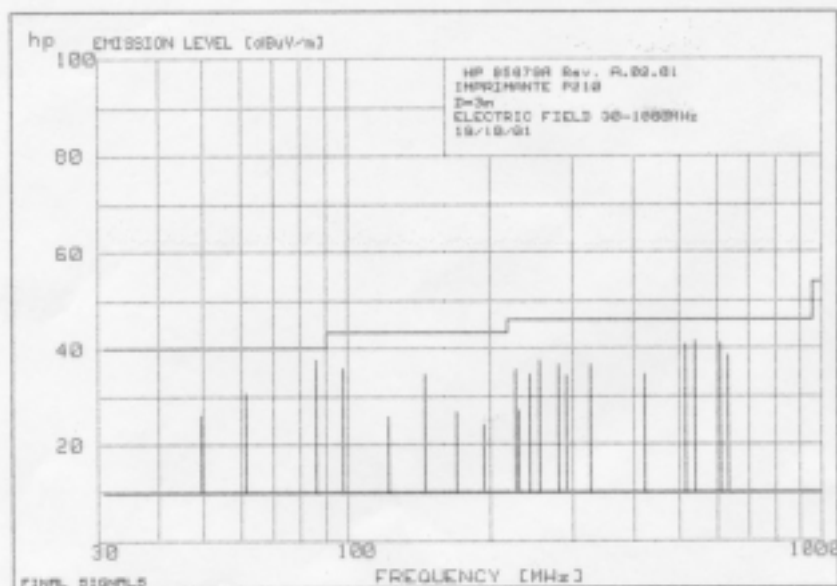
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1000 MHz (D=3m)
CONDITIONS : 120V/60Hz; With POWER BOX power supply and parallel interface
STANDBY and PRINTING modes.
DATE : October, 19 of 2001
MEASUREMENT DONE BY : D.RAUD

PRODUCT EMISSIONS

HP 65979A Rev. A.02.01

Data File: CH.E D=3m ALIM PB // 19 Oct 2001

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS			SITE		CORR FACTOR dB	COMMENTS
			ABS	dLIM	MODE	POL	HGT AZM cm deg		
1	48.014	40.0	26.1	-13.9	QP	V	150 210	11.9	IMPRESSION
2	60.022	40.0	30.6	-9.4	QP	V	130 220	8.6	IMPRESSION
3	83.992	40.0	37.6	-2.4	QP	V	130 220	10.8	
4	96.031	43.5	36.0	-7.5	QP	V	130 125	13.1	
5	120.061	43.5	25.6	-17.9	QP	V	130 310	14.6	IMPRESSION
6	144.022	43.5	34.5	-9.0	QP	V	130 65	14.	IMPRESSION
7	168.064	43.5	26.5	-17.0	QP	V	120 80	13.2	
8	192.166	43.5	23.9	-19.6	QP	H	150 110	12.3	
9	223.978	46.0	35.4	-10.6	QP	H	170 20	14.4	
10	228.040	46.0	26.9	-19.1	QP	H	400 15	14.7	
11	240.033	46.0	34.4	-11.6	QP	H	180 20	15.7	
12	252.030	46.0	37.5	-8.5	QP	V	170 115	16.6	
13	276.047	46.0	36.4	-9.6	PK	H	160 205	17.1	
14	280.033	46.0	34.3	-11.7	QP	H	150 250	17.4	
15	324.093	46.0	36.6	-9.4	QP	H	230 10	18.2	
16	420.078	46.0	34.7	-11.3	QP	V	200 75	20.6	
17	516.098	46.0	40.7	-5.3	QP	V	140 210	23.1	
18	540.121	46.0	41.4	-4.6	QP	V	150 205	23.5	
19	612.124	46.0	41.1	-4.9	QP	V	120 170	24.5	
20	636.111	46.0	38.6	-7.4	QP	V	230 210	24.2	





Written by : D. RAUD

FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

January 18, 2002

P310
Appendices

Test report # : 019054DR

P310 PRINTER MODEL DETAILED TEST RESULTS



FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P310
Annex :1-1

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D. RAUD

28 Nov 2001 16:28:36

EQUIPMENT FCC ID :
MX5402920001

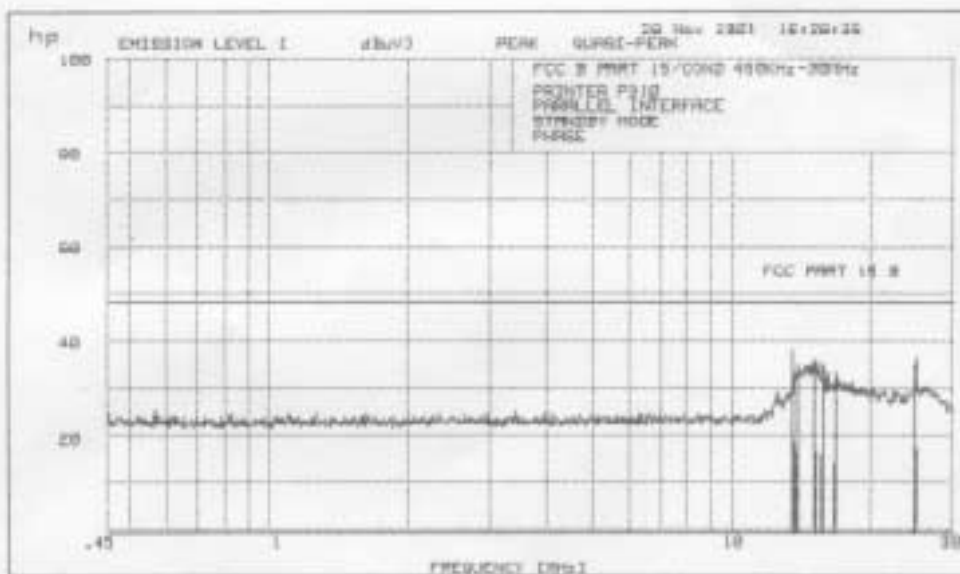
1. SETUP

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

PRINTER P310
PARALLEL INTERFACE
STANDBY MODE
PHASE

Quasi-Peaks above -26 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	13.62	38.1	-9.9
2	13.86	32.8	-16.2
3	15.08	33.8	-14.2
4	15.72	32.2	-15.8
5	16.74	28.7	-19.3
6	24.94	34.8	-13.2





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P310
Annex :1-2

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

28 Nov 2001 16:41:36

1. SETUP

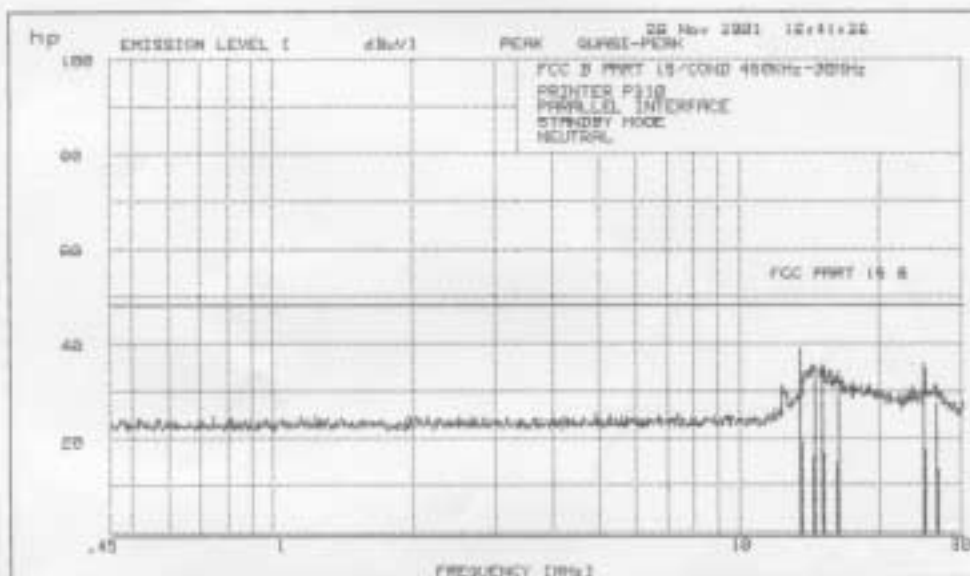
1.2 FCC B PART 15/COND 450KHz-30MHz

EQUIPMENT FCC ID :
MX5402920001

PRINTER P310
PARALLEL INTERFACE
STANDBY MODE
NEUTRAL

Quasi-Peaks above -25 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	13.52	38.8	-9.2
2	14.52	33.1	-14.9
3	15.08	34.5	-13.5
4	16.33	30.3	-17.7
5	24.94	35.6	-12.4
6	26.56	27	-21.0





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P310
Annex :1-3

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

28 Nov 2001 17:01:00

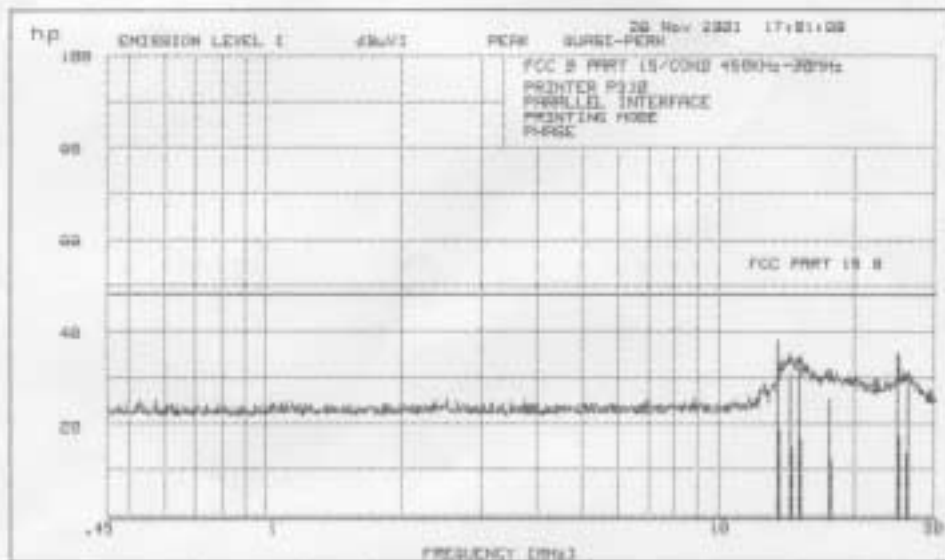
EQUIPMENT FCC ID :
MX5402920001

1. SETUP
1.2 FCC B PART 15/COND 450KHz-30MHz

PRINTER P310
PARALLEL INTERFACE
PRINTING MODE
PHASE

Quasi-Peaks above -25 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	13.52	30	-10.0
2	14.46	30.6	-17.4
3	15.08	33.5	-14.5
4	17.61	25.4	-22.6
5	24.94	35.1	-12.9
6	26.23	28.2	-19.8





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P310
Annex :1-4

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

28 Nov 2001 17:09:46

EQUIPMENT FCC ID :
MX5402920001

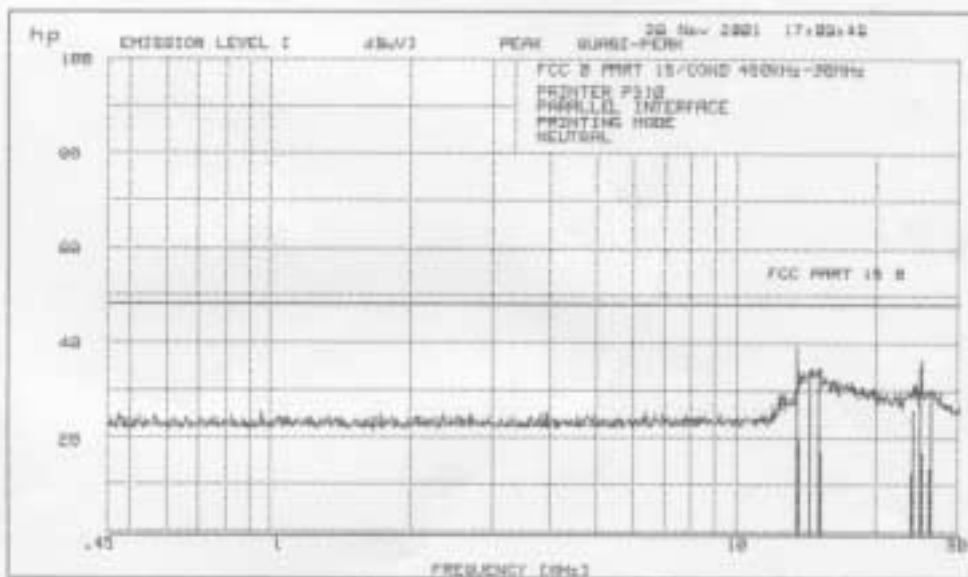
1. SETUP

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

PRINTER P310
PARALLEL INTERFACE
PRINTING MODE
NEUTRAL

Quasi-Peaks above -25 dB of Limit Line #1
peak criteria = 5 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	13.52	39	-9.8
2	14.4	33.9	-14.1
3	15.08	33.9	-14.1
4	23.92	25.5	-22.5
5	24.94	34.5	-13.5
6	25.23	27.8	-20.2





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P310
Annex :1-5

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D. RAUD

EQUIPMENT FCC ID :
MX5402920001

28 Nov 2001 17:36:51

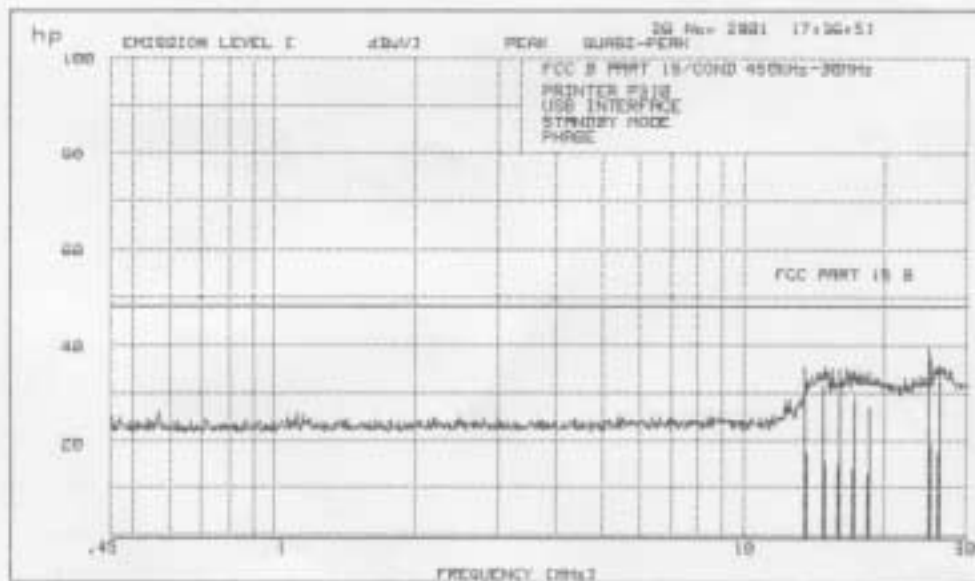
1. SETUP

1.2 FCC B PART 15/COND 450kHz-30MHz

PRINTER P310
USB INTERFACE
STANDBY MODE
PHASE

Quasi-Peaks above -25 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	13.52	35.2	-12.8
2	14.83	31.5	-16.5
3	15.89	30.4	-17.6
4	17.24	28.7	-19.3
5	18.52	26.6	-21.4
6	24.94	39.1	-8.9
7	26.23	34.8	-13.2





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P310
Annex :1-6

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

26 Nov 2001 17:51:25

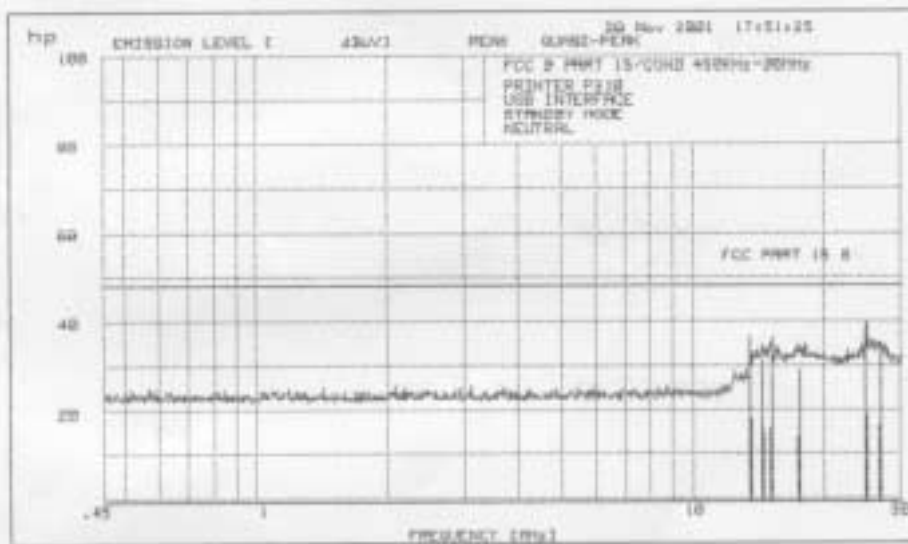
1. SETUP
1.2 FCC B PART 15/COND 450KHz-30MHz

EQUIPMENT FCC ID :
MX5402920001

PRINTER P310
USB INTERFACE
STANDBY MODE
NEUTRAL

Quasi-Peaks above -25 dB of Limit Line #1
peak criteria = 5 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	13.52	36.3	-11.7
2	14.46	31.1	-16.9
3	15.14	32.3	-15.7
4	17.53	28.7	-19.3
5	24.94	38.8	-9.2
6	26.9	33.6	-14.4





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P310
Annex :1-7

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

28 Nov 2001 18:33:19

EQUIPMENT FCC ID :
MX5402920001

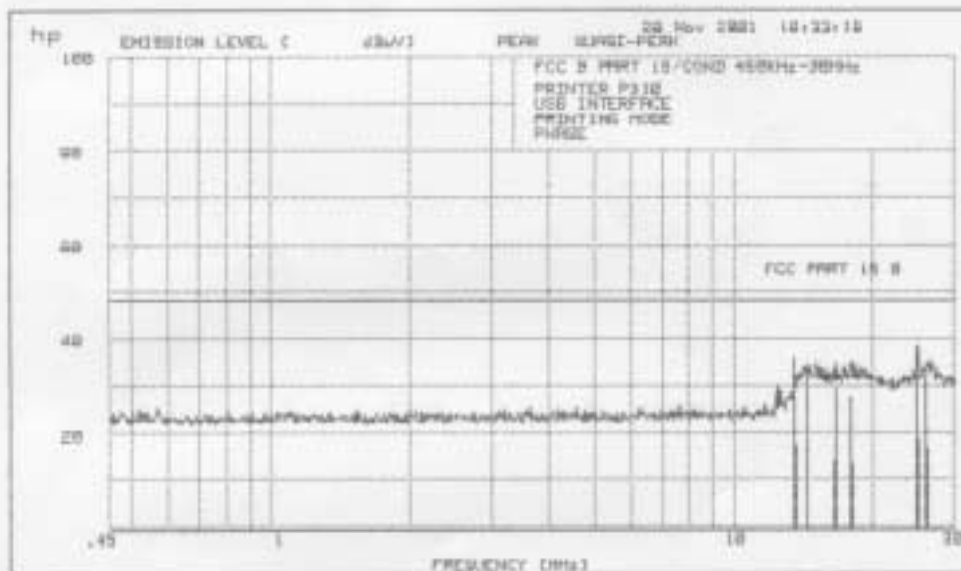
1. SETUP

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

PRINTER P310
USB INTERFACE
PRINTING MODE
PHASE

Quasi-Peaks above -25 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	13.62	35	-13.0
2	14.4	32.8	-15.2
3	16.6	28.9	-19.1
4	17.98	27.5	-20.5
5	24.94	39.5	-9.5
6	26.12	33.8	-14.2





FCC CERTIFICATION TEST REPORT

EQUIPMENT FCC ID : MX5402920001

P310
Annex :1-8

Written by : D. RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15/2000 CLASS B
MEASUREMENT : AC POWER LINE CONDUCTED
CONDITIONS : 120V/60Hz
MEASUREMENTS DONE BY : D.RAUD

28 Nov 2001 18:39:58

EQUIPMENT FCC ID :
MX5402920001

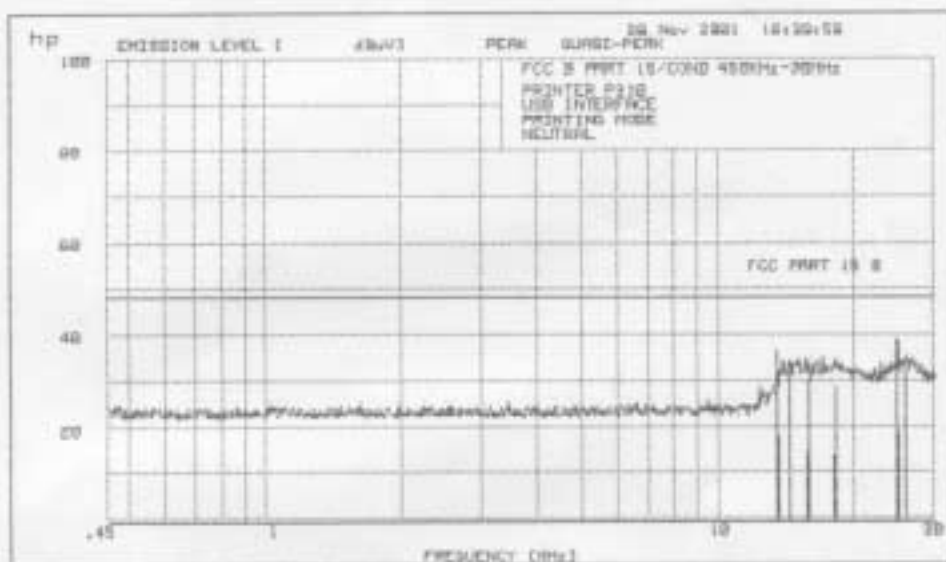
1. SETUP

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

PRINTER P310
USB INTERFACE
PRINTING MODE
NEUTRAL

Quasi-Peaks above -25 dB of Limit Line #1
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	13.52	36.4	-11.6
2	14.4	33	-15.0
3	15.85	30	-18.0
4	18.21	28.1	-19.9
5	24.94	38.6	-9.4
6	26.01	32	-16.0





FCC CERTIFICATION TEST REPORT

Annex :2-1

EQUIPMENT FCC ID : MX5402920001

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1000 MHz D=3m
CONDITIONS : 120V/60Hz STANDBY MODE
DATE : Nov. 29 of 2001
MEASUREMENT DONE BY : D.RAUD

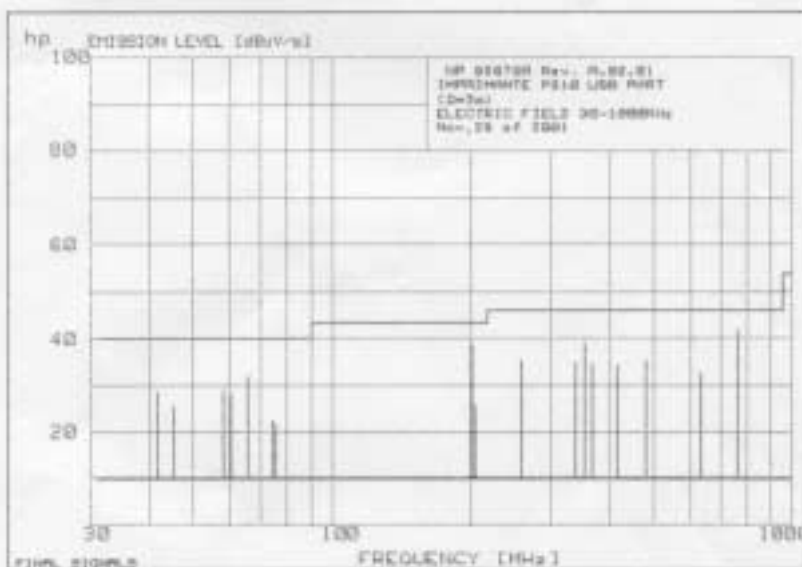
EQUIPMENT FCC ID :
MX5402920001

PRODUCT EMISSIONS

HP 05879A Rev. A.02.01

Data File: E FIELD D=3m USB STANDBY

No	EMISSION	SPEC	MEASUREMENTS			POL	SITE		CORR	COMMENTS
	FREQUENCY MHz		ABS	dLIM	MODE		HGT	AZM		
			dBuV/m	dB			m	deg	dB	
1	40.688	40.0	26.8	-11.2	QP	V	180	190	15.	
2	44.230	40.0	25.5	-14.5	PK	V	110	80	13.8	
3	56.477	40.0	26.9	-11.1	PK	V	130	0	9.7	
4	58.973	40.0	28.1	-11.9	PK	V	130	140	9.	
5	63.980	40.0	32.1	-7.9	QP	V	160	0	8.8	
6	72.590	40.0	22.6	-17.4	PK	V	160	265	8.8	
7	73.784	40.0	21.4	-18.6	PK	V	120	285	8.9	
8	200.457	43.5	36.4	-6.1	QP	H	160	95	13.7	
9	203.400	43.5	25.6	-17.9	PK	H	170	225	13.8	
10	255.988	46.0	35.2	-10.8	PK	H	160	320	16.1	
11	335.20	46.0	35.0	-11.0	PK	H	140	305	18.3	
12	352.007	46.0	39.9	-7.1	QP	V	130	180	18.9	
13	367.30	46.0	34.4	-11.6	PK	V	160	175	19.4	
14	415.990	46.0	34.3	-11.7	PK	V	170	15	20.9	
15	480.013	46.0	35.1	-10.9	QP	V	190	225	22.2	
16	637.270	46.0	32.6	-13.4	PK	V	160	325	23.4	
17	758.004	46.0	41.7	-4.3	QP	H	240	265	25.6	





FCC CERTIFICATION TEST REPORT

Annex :2-2

EQUIPMENT FCC ID : MX5402920001

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1000 MHz D=3m
CONDITIONS : 120V/60Hz : USB Interface: PRINTING MODE
DATE : Nov. 29 of 2001
MEASUREMENT DONE BY : D.RAUD

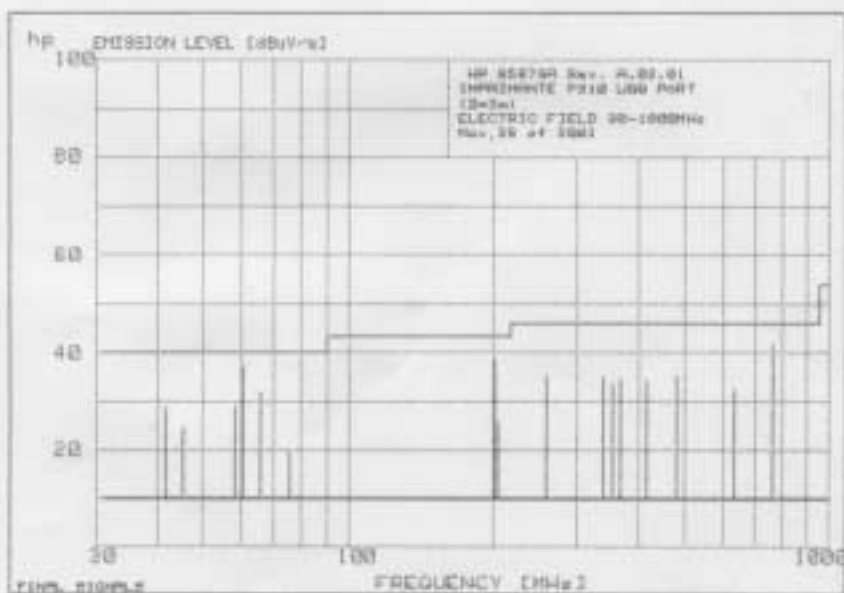
EQUIPMENT FCC ID :
MX5402920001

PRODUCT EMISSIONS

HP 85879A Rev. A.02.01

Data File: E FIELD D=3m USB PRINTING

No	EMISSION	SPEC	MEASUREMENTS		MODE	POL	SITE		CORR	COMMENTS
	FREQUENCY MHz		ABS	dLIM			HGT	AZM		
			dBuV/m	dB			cm	deg	dB	
1	40.680	40.0	28.8	-11.2	QP	V	140	195	15.	
2	44.230	40.0	24.6	-15.4	PK	V	140	195	13.8	
3	56.477	40.0	28.9	-11.1	PK	V	130	0	9.7	
4	58.973	40.0	37.2	-2.8	QP	V	140	160	9.	
5	64.000	40.0	32.1	-7.9	QP	V	140	195	9.6	
6	73.699	40.0	19.6	-20.4	QP	V	180	65	8.9	
7	200.453	43.5	38.4	-5.1	QP	V	140	195	13.7	
8	203.400	43.5	25.6	-17.9	PK	H	170	225	13.8	
9	255.988	46.0	35.2	-10.8	PK	H	150	320	16.1	
10	335.20	46.0	35.0	-11.0	PK	H	140	305	18.3	
11	352.015	46.0	33.6	-12.4	QP	V	170	255	18.9	
12	367.30	46.0	34.4	-11.6	PK	V	160	175	19.4	
13	415.990	46.0	34.3	-11.7	PK	V	170	15	20.9	
14	480.013	46.0	35.1	-10.9	QP	V	180	225	22.2	
15	637.279	46.0	32.6	-13.4	PK	V	160	325	23.4	
16	767.995	46.0	41.7	-4.3	QP	V	170	345	25.9	





FCC CERTIFICATION TEST REPORT

Annex :2-3

EQUIPMENT FCC ID : MX5402920001

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1000 MHz D=3m
CONDITIONS : 120V/60Hz : Parallel interface: STANDBY MODE
DATE : Nov. 30 of 2001
MEASUREMENT DONE BY : D.RAUD

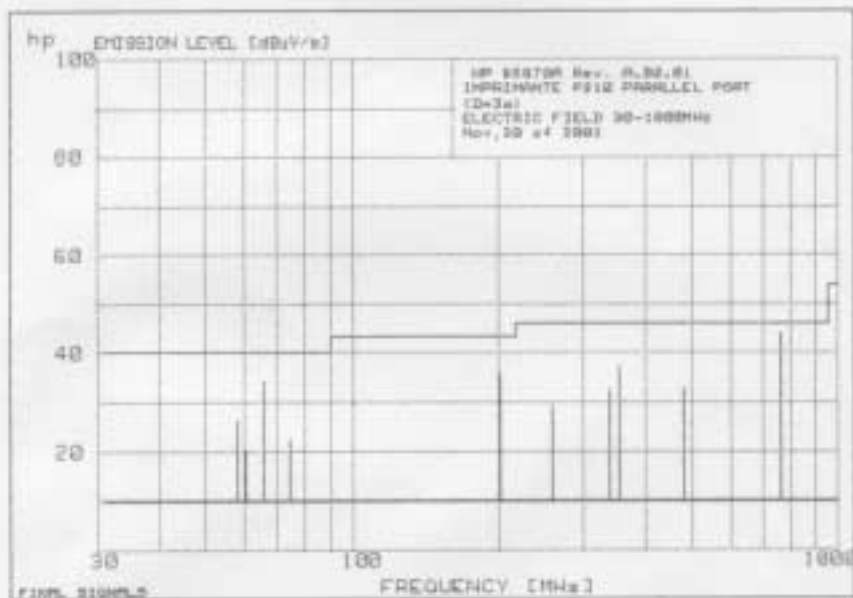
PRODUCT EMISSIONS

EQUIPMENT FCC ID :
MX5402920001

HP 95B79A Rev. A.02.01

Data File: E FIELD D=3m // STANDBY 30 Nov 01

No	EMISSION FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS			SITE		CORR FACTOR dB	COMMENTS
			ABS	dLIM	MODE	POL	HGT AZH cm deg		
1	56.572	40.0	25.9	-14.1	PK	V	190 0	9.6	
2	58.988	40.0	20.2	-19.8	PK	V	170 200	9.	
3	63.988	40.0	34.1	-5.9	QP	V	170 360	8.6	
4	72.698	40.0	22.6	-17.4	PK	V	160 265	8.8	
5	200.455	43.5	35.6	-7.9	QP	H	150 55	13.7	
6	255.988	40.0	29.2	-10.8	PK	H	150 350	16.1	
7	335.20	46.0	32.4	-13.6	PK	H	140 345	10.3	
8	352.014	46.0	37.3	-8.7	QP	H	130 295	16.8	
9	478.972	46.0	32.5	-13.5	QP	V	190 230	22.2	
10	767.983	46.0	44.1	-1.9	QP	V	170 335	25.8	





FCC CERTIFICATION TEST REPORT

Annex :2-4

EQUIPMENT FCC ID : MX5402920001

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1800 MHz D=3m
CONDITIONS : 120V/60Hz : Parallel interface: PRINTING MODE
DATE : Nov. 30 of 2001
MEASUREMENT DONE BY : D.RAUD

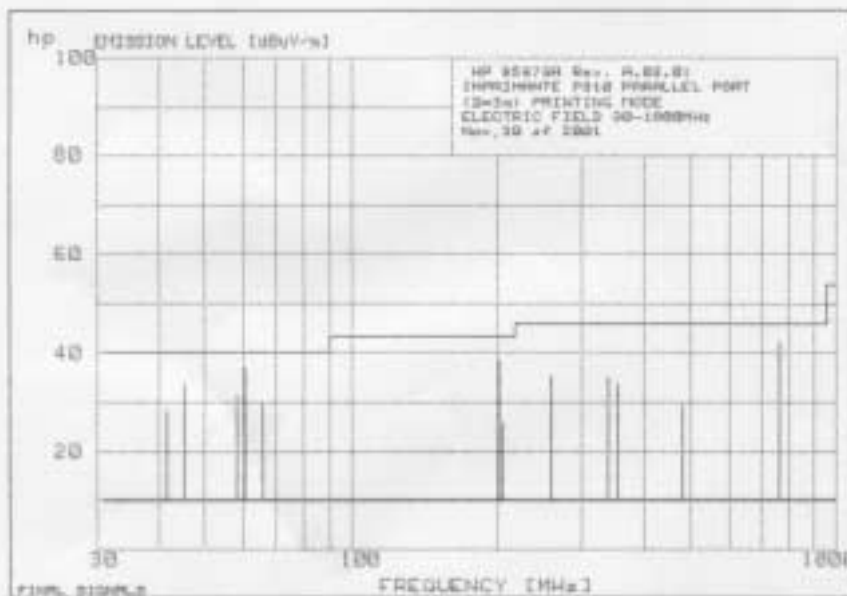
EQUIPMENT FCC ID :
MX5402920001

PRODUCT EMISSIONS

HP 85879A Rev. A.02.01

Data File: E FIELD D=3m // PRINTING 30 Nov

EMISSION No	FREQUENCY MHz	SPEC LIMIT dBuV/m	MEASUREMENTS		MODE	SITE		CORR FACTOR dB	COMMENTS
			ABS	dLIM		POL	HGT AZM		
			dBuV/m	dB			cm deg		
1	40.690	40.0	28.4	-11.6	QP	V	100 225	15.	
2	44.260	40.0	33.4	-6.6	QP	V	100 225	13.8	
3	56.710	40.0	31.4	-8.6	PK	V	100 205	9.6	
4	58.973	40.0	37.0	-3.0	QP	V	130 145	9.	
5	63.998	40.0	29.5	-10.5	QP	V	140 165	8.6	
6	200.453	43.5	38.4	-5.1	QP	V	140 195	13.7	
7	203.400	43.5	25.6	-17.9	PK	H	170 225	13.8	
8	255.908	46.0	35.2	-10.8	PK	H	160 320	16.1	
9	335.20	46.0	35.0	-11.0	PK	H	140 305	10.3	
10	352.015	46.0	33.6	-12.4	QP	V	170 265	10.9	
11	479.940	46.0	29.2	-16.8	QP	V	190 225	23.2	
12	769.002	46.0	42.2	-3.8	QP	V	170 335	25.8	





FCC CERTIFICATION TEST REPORT

Annex :2-5

EQUIPMENT FCC ID : MX5402920001

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

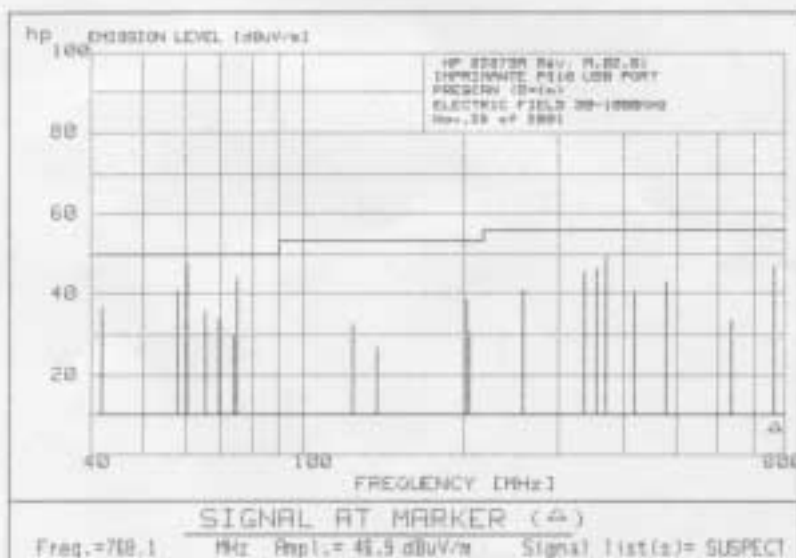
PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1000 MHz
CONDITIONS : 120V/60Hz ; USB interface ; PRINTING MODE (WORDS CASE)
DATE : Nov. 29 of 2001
MEASUREMENT DONE BY : D.RAUD
ALL SUSPECTS

EQUIPMENT FCC ID :
MX5402920001

No	FREQ MHz	BND	PEAK LIN	ANT ABS	AI F on deg	COMMENTS
1	40.64	2	-13	37.0	V100 270	
2	55.708	4	-8	40.8	V100 270	
3	59.939	4	-2	47.9	V100 270	
4	64.80	5	-14	35.9	V100 270	
5	67.80	5	-16	34.1	V100 270	
6	72.59	5	-20	30.2	H100 1	
7	73.69	5	-6	44.3	V100 270	
8	122.03	12	-21	32.9	V100 1	
9	135.989	13	-27	25.9	V100 1	
10	200.56	19	-15	30.6	H100 270	
11	203.40	19	-23	30.9	V100 270	
12	255.92	21	-15	40.9	H100 1	
13	335.2	22	-11	45.3	H100 1	
14	352.0	22	-10	45.4	V100 270	
15	367.3	22	-7	49.4	V100 270	
16	415.99	23	-15	41.0	V100 270	
17	478.8	26	-13	43.1	V100 270	
18	637.3	27	-22	33.7	V100 270	
19	759.1	28	-9	46.9	V100 270	

PRESCAN
FOR INFORMATION ONLY

* denotes a Final List signal





FCC CERTIFICATION TEST REPORT

Annex :2-6

EQUIPMENT FCC ID : MX5402920001

Written by : D.RAUD

January 18, 2002

Test report # : 019054DR

PRODUCT NAME : PRINTER P310
STANDARD : FCC CFR 47 PART 15 2000 CLASS B
MEASUREMENT : ELECTRIC FIELD 30-1000 MHz PRESCAN D=1m
CONDITIONS : 120V/60Hz ; PARALLEL interface; PRINTING MODE (WORDS CASE)
DATE : Nov. 29 of 2001
MEASUREMENT DONE BY : D.RAUD
ALL SUSPECTS

EQUIPMENT FCC ID :
MX5402920001

No	FREQ MHz	BND	PEAK LIM	ANT ASS	AZ P cm deg	COMMENTS
1	48.58	2	-14	35.4	V100 270	
2	58.401	4	0	58.2	V100 1	
3	58.947	4	5	54.6	V100 1	
4	64.80	5	-11	38.9	V100 1	
5	87.77	5	-22	28.1	V100 270	
6	200.58	18	-15	38.3	H100 270	
7	283.37	18	-22	31.2	V100 1	
8	255.82	21	-17	39.4	H100 1	
9	335.2	22	-15	41.4	H100 270	
10	352.0	22	-9	46.6	V100 1	
11	479.8	26	-15	41.2	V100 1	
12	768.1	28	-11	44.7	V100 1	

PRESCAN
FOR INFORMATION ONLY

* denotes a Final List signal

