MEASUREMENT / TECHNICAL REPORT

OLIVETTI PRINTER

FCC ID: DYK98JP2

July 30th, 1998

This report concerns (check one): Original grant __X__ Class II change____

Equipment type: PRINTER (ex.: computer, printer, modem, etc.)

Deferred grant request per 47 CFR 0.457(d)(1)(ii)? yes _____ no __X__

If yes, defer until: _____ date

Company Name agrees to notify the Commission by _____ date

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

Report prepared by: P.Antonio VELO Corrado GARBASSO

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1.3 Tested System Details

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

Model & Serial No.	FCC ID	Description	Cable Descriptions
ART JET 20 (1) s/n EMC-98-0061	**DYK98JP2**	**Printer, parallel I/F**	**Shielded parallel cable Unshielded power cord**
ECHOS PRO 150S s/n EMI-98-0328	GXLGP900T	Personal Computer	Unshielded power cord
ILAN model F1670 s/n 050961	none	AC adapter	Unshielded power cords
HP 7440A s/n 2539A94878	BSD8537440	Plotter, serial I/F	Shielded serial cable Unshielded power cord

(1) EUT submitted for grant.

1.4 Test Methodology

Both conducted and radiated testing were performed according to the ANSI C63.4-1992 test procedures . Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

Olivetti test site No. 2

The open area test site and conducted measurement facility used to collect the radiated data are located at Via Montalenghe 8, Scarmagno and Via Jervis 11, Ivrea, Italy. This site has been fully described in a report dated March 25, 1997 submitted to your office, and accepted in a letter dated June 13, 1997 (31040/SIT-1300F2).

1.6 Test equipment used:

Test receiver	Rohde & Schwarz ESH3	s/n 881364/012
LISN	Schwarzbeck NNLA8120	s/n 8120399
Test receiver	Rohde & Schwarz ESVP	s/n 879783/029
Biconical antenna	EMCO 3110	s/n 1735
Log-periodic antenna	EMCO 3146	s/n 3678

3 SYSTEM TEST CONFIGURATION

3.1 Justification

The printer was configured for testing in a typical fashion (as a customer would normally use it).

It was connected to the parallel port of a personal computer and operated in standard mode.

3.2 EUT Exercise Software

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software, (EMI_DIA) contained on a 3-1/2 inch disc, was inserted into drive A and is auto-starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is: an H is printed on the monitor, speaker beep, mass storage devices exercised, plotter and printer print an "H" pattern. The complete cycle takes about 2 seconds and is repeated continously.

3.3 Special Accessories

Line Filter on the Power Supply Unit:

Capacitors:

C6 (X2 class)	0.1μF-250 V	Matsushita ECQ-UV or ..... Arcotronics 1.47 or 1.40 or ..... Roederstein F1772
C15; C17; **C18; C20** (Y class)	2.2μF or 2.5μF - 250 V	Murata KY series or ..... Draloric WYO

Inductors:

L2	Filter coil 2 x 40 μH - 0.8A	Moelettra 209428/G
L3 / L4	Filter coil 47 μH - 0.8A.....	Elettronica Rossoni WD-2225
L6	Filter coil 2 x 100 μH -1A	Radiohm 42V15 - 1000

Metal shieldings:

Sheet steel housing of the Power Supply Unit (upper and lower sections), fixed by screws to the metal frame of the EUT (see picture attached as Figure 8.4);

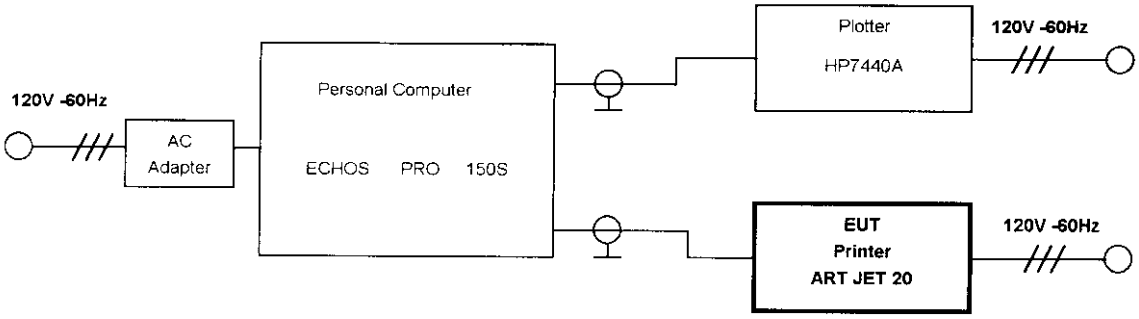
As shown in Figure 3.1 all interface cables used for compliance testing are shielded as normally supplied by Olivetti Company. These cable model and part numbers are marketed with the Olivetti Company peripherals to the end user, and appear on the related product price list supplied to our customers. All cable connectors feature integral metal hoods for shielding.

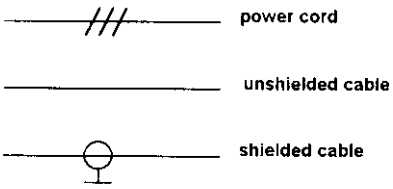
3.4 Equipment Modifications

To achieve compliance to Class B levels, no changes were made during compliance testing.

3.5 Configuration of the Tested System

Figure 3.1 Configuration of the Tested System





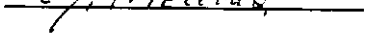
6 CONDUCTED EMISSION DATA

6.1 The conducted tests are performed with a receiver in quasi-peak mode.

	Frequency (MHz)	Measured* (dBμV)	Limit (dBμV)
neutral	0.49	45.1	48
	0.59	44.9	
	0.69	45.2	
	0.78	43	
	0.88	41.2	
	0.99	41.3	
line	0.49	45.7	48
	0.59	46	
	0.69	45.8	
	0.78	44.3	
	0.88	44.5	
	0.99	42.4	

* All readings are quasi-peak

Test Personnel:

Tester Signature  Date July 29, 1998

Typed/Printed Name Giuseppe MECCHIA .

7 RADIATED EMISSION DATA

7.1 The following data list the significant emission frequencies, measured levels, correction factors (including cable and antenna corrections), the corrected reading, plus the limit. Field strenght calculation is given in paragraph 7.2.

Judgement: Passed by 6.9 dB

Frequency (MHz)	Polarity (V/H)	Receiver* Reading (dBμV)	Correction Factor (dB/m)	Corrected Reading (dBμV/m)	3 Meter Limit (dBμV/m)
120.3	V	21.2	13.9	35.1	43.5
180.4	H	15.8	16.7	32.5	43.5
280.7	H	21.6	17.0	38.6	46
300.7	H	16.7	18.3	35.0	46
360.9	H	19.3	19.8	39.1	46
481.2	H	14.6	23.5	38.1	46

* All readings are quasi-peak, with an IF bandwith of 120 kHz.

Test Personnel:

Tester Signature _____ Date July 27, 1998

Typed/Printed Name Giuseppe MECCHIA

7.2 Field Strength Calculation

7.2.1 The field strength is calculated by adding the Antenna and Cable Factor to the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF

where

FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

Assume a receiver reading of 15.8 dBμV is obtained. The Antenna and Cable Factor of 16.7 is added, giving a field strength of 32.5 dBμV/m. The 32.5 dBμV/m value was mathematically converted to its corresponding level in μV/m.

FS = 15.8 + 16.7 = 32.5 dBμV/m

Level in μV/m = Common Antilogarithm [(32.5 dBμV/m)/20]= 42.2 μV/m