



ENGINEERING STATEMENT

F² Engineering Testing Laboratory

This report has been prepared on behalf of Dunn/IDP Computer Corporation to support the attached Application for Equipment Authorization. The test and application are submitted for a Class B Computing Device under Part 15 of the FCC Rules and Regulations. The test results found in this test report relate only to the items tested.

EQUIPMENT UNDER TEST: *Mid Tower Computer*

FCC ID: ITR-IDP760SPMT

APPLICABLE RULES: 2.1033; 15.101-109

MEASUREMENT LOCATION: F² Engineering in Damascus, MD. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

MEASUREMENT PROCEDURE: All measurements were performed according to the 1992 version of ANSI C63.4. A list of the measurement equipment can be found in Exhibit D.

A2LA STATEMENT: This laboratory is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with the laboratory's terms of accreditation unless stated otherwise in the report.

A2LA CERTIFICATE NUMBER: 793.01



Engineering Statement, continued

F2 Engineering Testing Laboratory

UNCERTAINTY BUDGET:

- Radiated Emission
Combined Uncertainty (+ or -) 2.24 dB
Expanded Uncertainty (+ or -) 4.48 dB
- Conducted Emission
Combined Uncertainty (+ or -) 1.13 dB
Expanded Uncertainty (+ or -) 2.26 dB

ENGINEERING STATEMENT:

I hereby state that: The measurements shown in this application were made in accordance with the procedures indicated and the energy emitted by this equipment was found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements.

I further state that: On the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Part 15 of the FCC Rules under normal use and maintenance.

Certified by:

Wendy E. Fuster
Wendy Fuster, President

Equipment Under Test Information and Data

DESCRIPTION OF EUT: The Dunn/IDP Computer Corporation's Mid Tower Computer was configured internally with a power supply, motherboard, PCI, video card, CD-ROM Drive, hard-drive and floppy disk. The motherboard used a single, Pentium II microprocessor to controll 3 DIMM slots, 1 16-bit slot, 3 PCI slots, 1 16-bit/PCI shared slot, 2 serial ports, 1 parallel port, 2 USB ports, 1 joystick port and 1 AGP port. The motherboard also had built in controllers for speakers, microphone, PS/2 keyboard, PS/2 mouse, 2 IDE ports and a floppy-drive.

TEST ITEM CONDITION: The equipment to be tested was received in good condition.

TEST CONFIGURATION: The system was configured externally with components that are also Class B compliant. The test was performed with the monitor powered by the AC wall outlet. The motherboard was configured with an Intel Pentium II-400 (100 MHz).

TESTING ALGORITHM: A basic program was written to continuously send a stream of H's to the parallel port, comports and monitor. The system was tested in all modes of operation and clock speeds. Worst case emissions are recorded in the data tables.

CONDUCTED EMISSION TESTING: The EUT was placed on a .8 meter high, 1 X 1.5 meter non-conductive table. Power was provided to the EUT through a LISN bonded to a 3 X 2 meter ground plane. The LISN and peripherals were supplied power through a filtered AC power source. The output of the LISN was connected to the input of the receiver and emissions in the range 450kHz to 30 MHz were measured. The measurements were recorded using the quasi-peak values, and the resolution bandwidth during testing was 9kHz. All data for conducted emissions are found in Exhibit H.

RADIATED EMISSION TESTING: The EUT was tested at a distance of 3 meters. The emissions were maximized by rotating the table and raising/lowering the antenna mounted on a 4-meter mast. Cable and peripheral positions were also varied to produce maximum emissions. Both horizontal and vertical field components were measured. The output of the antenna was connected, through a pre-amplifier, to the input of the receiver and emissions were measured in the range 30MHz to 1 GHz.. Measurements were recorded in quasi-peak with the measurement bandwidth set to 120kHz. All data for radiated emissions are found in Exhibit I.

Equipment Under Test Information, continued

CALCULATION OF DATA: RADIATED EMISSIONS - The antenna factors(including cable losses) of the biconical antennas used, and the pre-amplifier gain, are input into the memory of the receiver. The receiver then corrects the reading for amplitude automatically. The field strength reading can then be taken directly from the receiver and compared to the FCC limits in dBuV/m. The following equation is used to convert to uV/m:

$$E_{uV/m} = \text{antilog}(E_{dBuV/m} / 20)$$

SAMPLE OF FIELD STRENGTH CALCULATION:

$$E_a = V_a + A_F + A_e + (-A_G)$$

Where E_a = Field Strength(uV/m)
 V_a = $20 \times \log_{10}$ (Measure RF voltage, uV)
 A_e = Cable Loss Factor, dB
 A_G = Amplifier Gain, dB
 A_F = Antenna Factor dB(m-1)

i.e. If the reading is 57.0 dBuV, the antenna factor 8.0 dB, cable loss factor 1.0 dB and Amplifier gain is 25.0 dB, so the field strength will be:

$$\begin{aligned} E_a(\text{dBuV/m}) &= 57 + 8 + 1 + (-25) \\ &= 41 \text{ dBuV/m} \end{aligned}$$

or

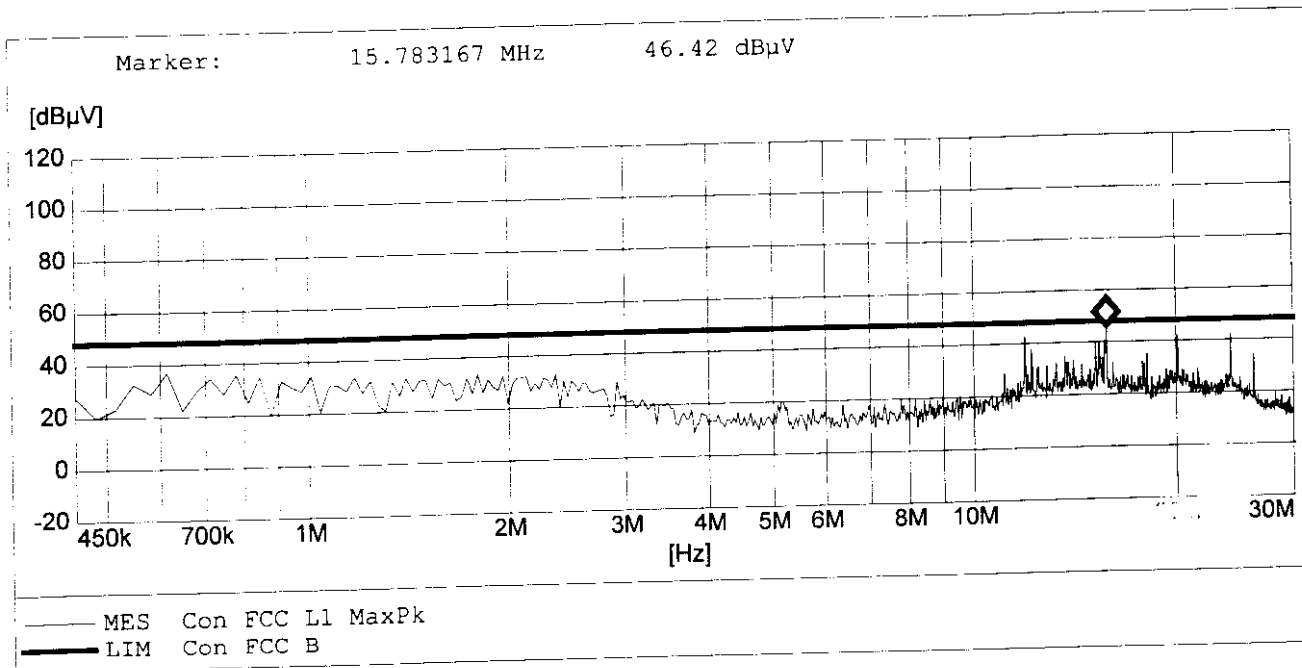
$$\begin{aligned} E_a(\text{uV/m}) &= 10^{(41/20)} \\ &= 112.20 \text{ uV/m} \end{aligned}$$

CONDUCTED DATA

FCC ID: ITR-IDP760SPMT

Model: Mid Tower Computer

PHASE SIDE



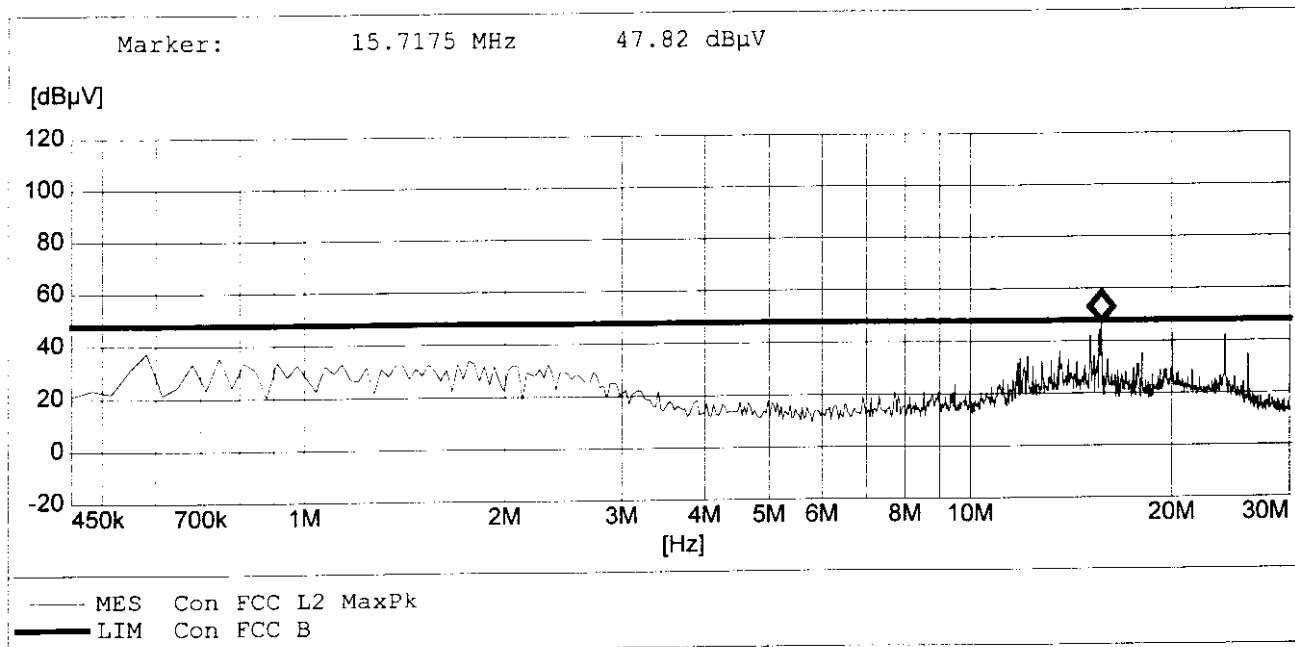
Signature: *James J. Childress*
James Childress, Technical Manager

CONDUCTED DATA

FCC ID: ITR-IDP760SPMT

Model: Mid Tower Computer

NEUTRAL SIDE

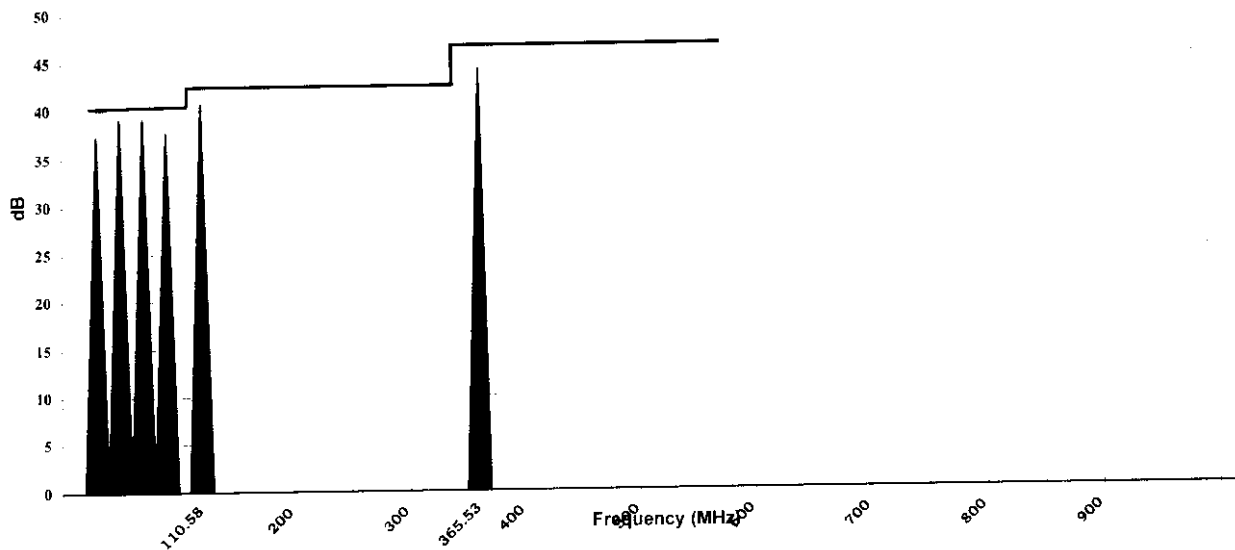
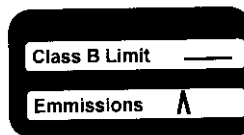


Signature: *James Childress*
James Childress, Technical Manager

RADIATED DATA

Dunn/IDP Computer Corporation
Mid Tower Computer
FCC ID #: ITR-IDP760SPMT

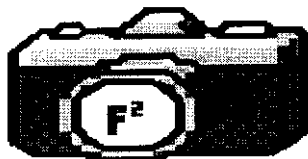
FREQ. (MHz)	ANTENNA POLARIZ.	FIELD STRENGTH		FCC LIMIT		MARGIN (dB)
		(dBuV/m)	(uV/m)	(dBuV/m)	(uV/m)	
61.20	H	37.35	73.71	40.00	100	2.65
62.51	H	39.10	90.16	40.00	100	0.90
80.37	H	39.15	90.68	40.00	100	0.85
84.85	H	37.78	77.45	40.00	100	2.22
110.58	H	40.65	107.77	43.50	150	2.85
365.53	H	44.15	161.25	46.00	200	1.85



The system was tested with the following CPU/Bus speed combinations:
Intel Pentium II-400/100MHz. All Intel Pentium II processors, 400MHz and slower,
that use a 100 MHz bus speed may be used.

INITIALS ggc

Exhibit J



TEST SET-UP

&

EUT

PHOTOS

EUT COMPLIES
WITHOUT
MODIFICATIONS



F² Engineering Testing Laboratory

APPENDIX

to

Report No. 8196-01-81

for

Dunn/IDP Computer Corporation

20 Firstfield Road

Gaithersburg, MD 20878

FCC ID: ITR-IDP760SPMT