1 TEST REPORT

1.1 System test configuration

1.1.1 Justification

In order to show the performance of the product for all possible configurations, each processor speed and processor type have been tested during pre-scans evaluation. The HP KAYAK XU800 with two Pentium III 667MHz processors has been identified as the worst case product during these pre-scans.
Consequently, all tests results contained in this report are from the KAYAK XU800.
The system was configured for testing in a typical fashion (as a customer would normally use it). THE Kayak XU800 is running at the maximum speed compatible with the processors selected. Since the highest speed selection was found to be the worst case, this mode was used to collect the included data.
The system was pretested in all supported video resolution modes with two different high resolution video cards. The 3Dlabs (HP P/N 5064-9793) video card, connected on the AGP port, able to provide maximum video resolution up to 1600 x 1200 @ 85Hz refresh rate (non-interlaced) with true color has been identified as the worst case. Since this graphic mode was found to be the worst case, this mode was used to collect the included data.
During pre-scans tests, a ClassB certified ultra VGA video card was tested in one of the PCI slots (Matrox millenium II card), but the worst case was observed with the 3Dlabs card plugged into the AGP port. Therefore the final qualification was completed with this card.

Furthermore, one SCSI board from LSI Logic (Symbios SYM8952U/8953U) has been used with a SCSI device connected, and a LAN board from 3Com (3C905C-TX Etherlink 10/100 PCI) has also been used to simulate the current use of the final product.

The USB port was loaded with a real device (INTEL Camera) during compliance testing.

The audio ports were loaded with headphone, loudspeaker and microphone during compliance testing.

According to FCC Part 15, Subpart A, paragraph 15.33, the upper frequency measurement range has been extended to 5GHz

1.1.2 EUT Exercise software

The EUT exercise program (WINRFI under Windows NT4.0) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The test software has been designed in order to exercise each part of the product involved in a typical use.

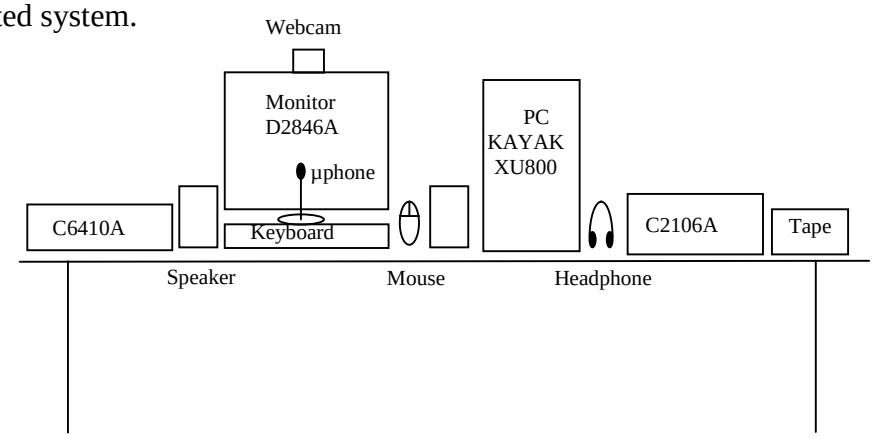
1.1.3 Special accessories

As shown in Figure 3.1, all interfaces cables used for compliance testing are shielded as normally supplied. All these cables are normally recommended to be used with the product.

1.1.4 Equipment modifications

No equipment modification has been necessary during testing to achieve compliance to Class B levels. The unit tested was a production unit.

1.1.5 Configuration of tested system.



1.2 Conducted emission data

1.2.1 Test procedure

The product has been tested according to ANSI C63.4-1992, CISPR22-1993/A1:1995 and EN55022:1994/A1:1995.

The product has been tested with 120V / 60Hz power line voltage and compared to the CISPR22 Class B limits. Measurement bandwidth was 9KHz from 150 KHz to 30 MHz.

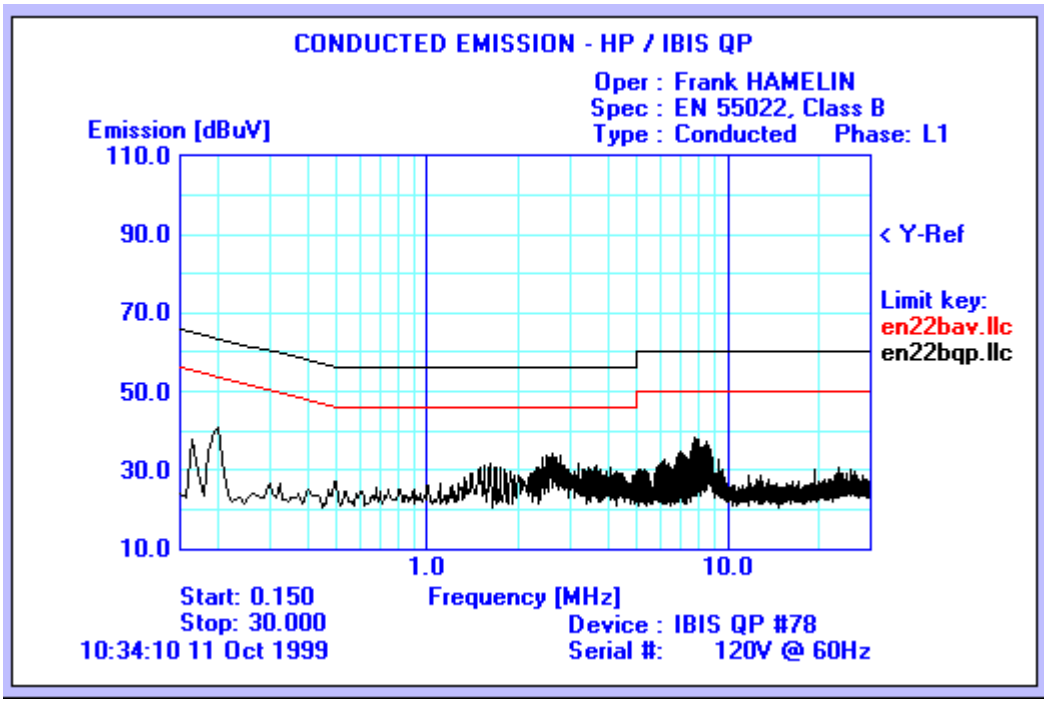
Measurement was initially made with an HP-8591EM Spectrum Analyzer in peak mode. This was followed by a Quasi-Peak, i.e. CISPR measurement with the Rohde & Schwarz ESH3 receiver for any strong signal. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.

The Peak data are shown on the following plots. Quasi-Peak and Average measurements are detailed in a table with frequencies and levels measured.

Interconnecting cables and equipment's were moved to position that maximized emission. A summary of the worst case emissions found in all test configurations and modes is shown on the following page.

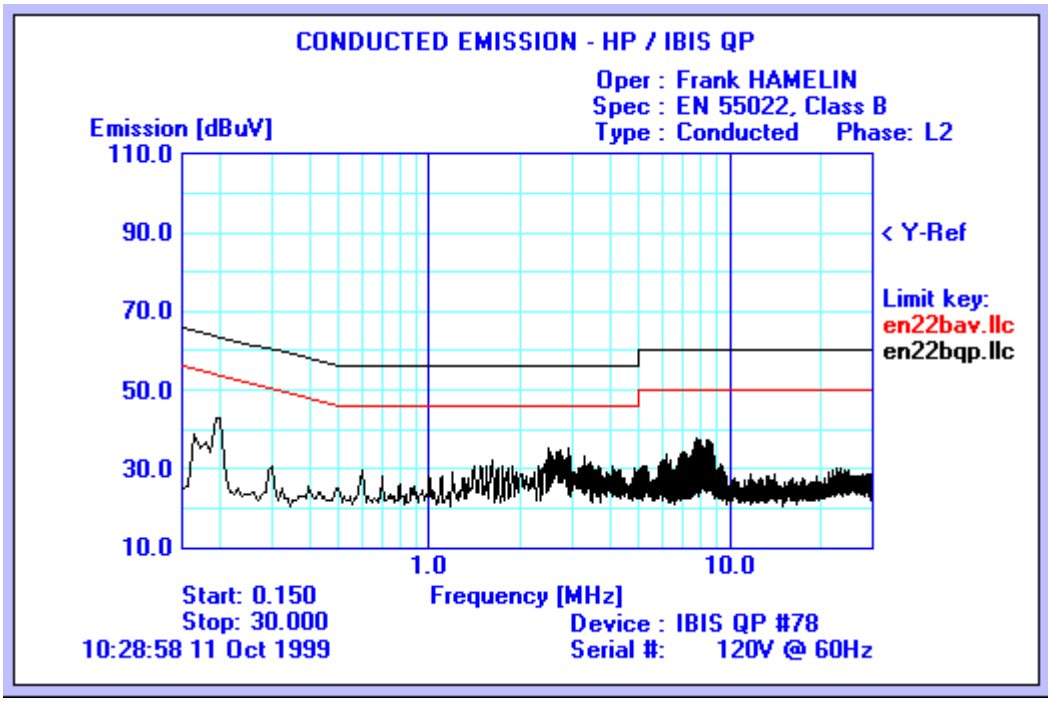
Test equipment :
HP 8591EM Spectrum Analyzer
Rhode & Schwarz ESH3 Receiver
EMCO 3810/2SH LISN N°1
TELEMETER NNB-2/16L LISN N°2

1.2.2 Neutral conducted emission data on KAYAK XU-800



Num.	Freq. [MHz]	Peak [dBµV]	Q-Peak [dBµV]	QP limit [dBµV]	***QP delta [dBµV]***	Average [dBµV]	AVG Limit [dBµV]	***AVG Delta [dBµV]***
1	0.170	44.49	34.65	64.00	***29.35***	16.58	54.00	***37.42***
2	0.200	41.43	39.24	62.00	***22.76***	35.09	52.00	***16.91***
3	2.920	34.68	33.17	56.00	***22.83***	31.00	46.00	***15***
4	8.490	38.42	37.01	60.00	***22.99***	36.35	50.00	***13.65***

1.2.3 Line conducted emission data on KAYAK XU-800



Num.	Freq. [MHz]	Peak [dBµV]	Q-Peak [dBµV]	QP limit [dBµV]	***QP delta [dBµV]***	Average [dBµV]	AVG Limit [dBµV]	***AVG Delta [dBµV]***
1	0.170	44.00	33.47	64.00	***30.53***	15.69	54.00	***38.31***
2	0.200	44.58	43.11	62.00	***18.89***	42.12	52.00	***9.88***
3	2.920	31.35	28.70	56.00	***27.3***	26.55	46.00	***19.45***
4	8.490	38.33	36.62	60.00	***23.38***	35.50	50.00	***14.5***

1.3 RADIATED EMISSION DATA

1.3.1 Test Procedure

The product has been tested according to ANSI C63.4-1992, CISPR 22-1993/A1:1995 and EN55022:1994/A1:1995.

The product has been tested with 230V / 50Hz power line voltage, at a distance of 10 meters from the antenna and compared to the CISPR 22 Class B limits. Measurement bandwidth was 120 KHz from 30 MHz to 1 GHz and 1 MHz upon 1 GHz.

Antenna height search was performed from 0.9m to 4m for both horizontal and vertical polarization. Continuous linear turntable azimuth search was performed with 360 degrees range.

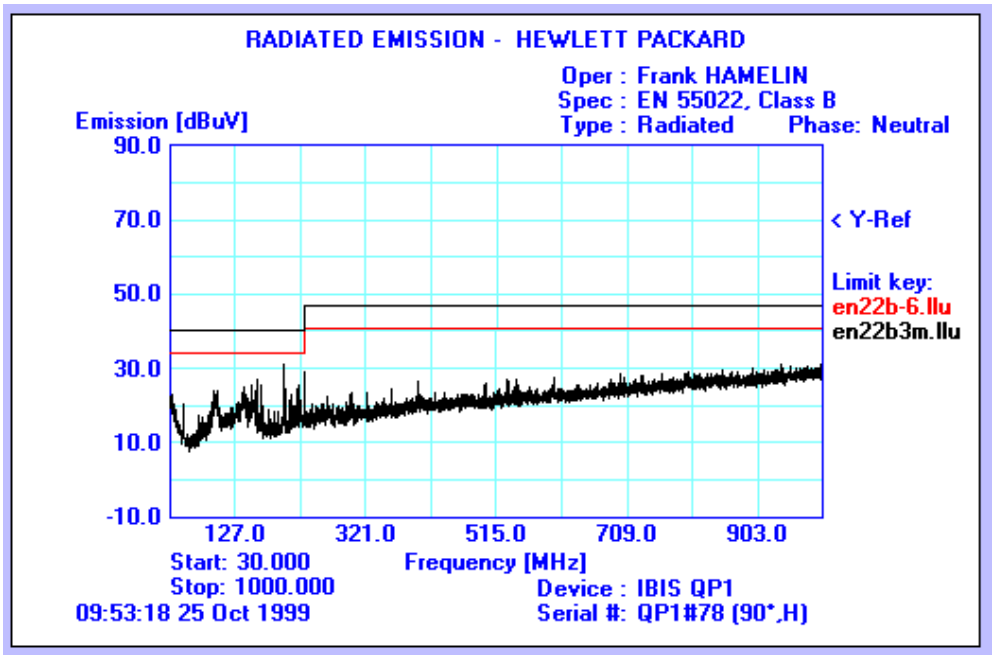
Interconnecting cables and equipment's were moved to position that maximized emission. A summary of the worst case emissions found in all test configurations and modes is shown on the following page.

Test Equipment: HP-8574A E.M.I Receiver
(HP-8568B Analyzer + HP-85650 Quasi-Peak adapter + HP-85685A RF Preselector).
HP 8546A 9KHz - 6.5GHz EMI receiver
EMCO 3104C Biconical Antenna & EMCO 3146 Log Periodic Antenna
EMCO-1050, 6 meters height antenna mast & EMCO-1060, 3 meters diameter Turntable.
EMCO 3115, 1GHz - 18GHz Horn Antenna

1.3.2 Radiated emission data

Final result 30-1000 MHz

Graph abstract - 30-1000MHz



Frequency (MHz)	QPeak Lmt (dBµV/m)	QPeak (dBµV/m)	QPeak-Lmt (dB)	Angle (deg)	Pol	Hgt (cm)	Tot Corr (dB)
31.028	30.00	25.0	-5.0	226	V	102	13.3
49.177	30.00	22.1	-7.9	64	V	105	11.8
73.754	30.00	26.1	-3.9	124	V	251	9.6
164.354	30.00	23.8	-6.2	178	H	378	17.9
199.565	30.00	26.0	-4.0	31	V	114	20.2

Final result 1-5 GHz

Frequency (MHz)	Brut value (dBµV/m)	Antenna Factor (dBµV)	Cable factor (dBµV)	Corrected value (CV – dBµV/m)	Pol. (H/V)	Average limit* (AL – dBµV/m)	***Delta*** (AL-CV - dB)
1.0640	16.5	25.9	1.0	43.4	V	54.0	***10.6***
1.3296	24.6	25.4	1.1	51.1	V	54.0	***2.9***
1.3963	13.7	25.4	1.1	40.2	H	54.0	***13.8***
1.4958	18.1	26.9	1.2	46.2	V	54.0	***7.8***
1.5955	16.1	27.2	1.3	44.0	H	54.0	***10***
1.7265	18.7	28.5	1.3	48.5	V	54.0	***5.5***
1.7918	17.0	28.6	1.3	46.9	V	54.0	***7.1***
1.9928	15.8	29.5	1.4	46.7	V	54.0	***7.3***
2.0923	17.1	29.6	1.4	48.1	H	54.0	***5.9***
2.6606	19.0	31.0	1.5	51.5	H	54.0	***2.5***
2.6935	12.5	31.6	1.6	45.7	V	54.0	***8.3***
3.3225	10.2	32.7	2.4	45.3	V	54.0	***8.7***
3.9880	11.4	34.4	2.0	47.8	V	54.0	***6.2***

* Average limit is 500µV/m = 54.0 dBµV/m

1.3.3 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follow :

FS = RA + AF + CF – AG

Where FS = Field Strength
RA = Receiver Amplitude
AF = Antenna Factor
CF = Cable Factor
AG = Amplifier Gain

Assume a receiver reading of 52.5dBµV is obtained. The antenna factor of 7.4 and a cable factor of 1.1 is added. The amplifier gain of 29dB is subtracted, giving a field strength of 32 dBµV/m.

FS = 52.5 + 7.4 + 1.1 – 29 = 32 dBµV/m

The 32 dBµV/m value can be mathematically converted to its corresponding level in µV/m.

Level in µV/m = Common Antilogarithm [(32dBµV/m)/20] = 39.8 µV/m.