Test Data.

Hursley EMC Services Ltd.

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RFI Measurement Procedure and Instrumentation.

Radiated Emissions Pre-Scan

Preliminary radiated profile measurements were taken at a 3 metre distance on eight azimuths of the system under test in both horizontal and vertical polarities of the antennae in a small semi-anechoic chamber.

Test Instrumentation used in the chamber was as follows:-

Computer	: IBM Aptiva 486
Spectrum Analysers	: HP 8568B 30-1000 MHz range in Peak Hold Mode.
	: HP 70001/4 1-2 GHz in Peak Hold Mode
Pre-Amplifier	: Chase CPA9231, 30-1000 MHz
Antennae	: 30-1000 MHz Chase Bi-log CBL6140, 30-1000 MHz
	: Comtest Horn 91888-2, 1-2 GHz

The data obtained was used as a guide for the Free Field measurements Free Field Measurements.

The system under test was transferred to the Free Field Site from the semi-anechoic chamber.

Freefield Measurements

The data obtained from the chamber was used to guide the test engineer. Each emission from the system under test was maximised by rotating the system on the turntable and moving the antenna in height and azimuth Cable and system component positions were then adjusted to produce the worst case emissions from the system under test. The worst case data is presented in this report.

Instrumentation used in the Free Field was as follows:-

Computer	: IBM Aptiva 486
Receiver	: Rohde and Schwarz Model ESVP (30-1000MHz)
	Set to CISPR - Quasi Peak .
Antenna	: Chase CBL6111 Bilog, 30-1000 MHz

High Frequency Measurements.

Since operating frequencies of the system unit exceeded 108 MHz, namely 166 MHz, freefield measurements were made in the range between 30 MHz and 2 GHz..

Conducted Emissions - Test Configuration.

A filtered 110V 60 Hz supply was fed to the Equipment under test via a Line Impedance Stabilisation Network (LISN). The remaining system was also powered from the 110V 60 Hz supply via a distribution box connected to a second LISN. The LISNs were directly earth bonded to a conductive ground plane. The system under test was located on a non-metallic test table, of 0.8 metres height above a conductive ground plane.

Conducted Emissions - Initial Scan.

The worst case emissions were identified on both the Line and Neutral Phases using an EMI Receiver scanning from 0.15 MHz to 30 MHz set to Peak Hold. Cable and system component positions were adjusted to produce the worst case emissions from the system under test using the above method.

Conducted Emissions - Quasi-Peak Measurements.

The worst case emissions identified from the Pre-Scan method shown above were then re-measured using the Receiver set to Quasi Peak detection. Those results are presented in this report.

Test Instrumentation used in the conducted test was as follows:-

LISNS	: Chase Electrics Ltd,	Type 2050
Receiver	: Rhode & Schwarz (0.45 to 30 MHz)	Type ESS

Power Line Conducted Results.

Test Data - Line Phase.

Frequency MHz	QP Ampitude dBuV	QP Limit dBuV
3.000	24.3	48.0
5.060	35.5	48.0
7.670	31.9	48.0
13.99	25.5	48.0
26.920	23.0	48.0

Test Data - Neutral Phase.

Frequency in MHz	QP Amplitude dBuV	QP Limit dBuV
3.520	31.0	48.0
4.940	35.3	48.0
7.920	35.6	48.0
14.100	31.4	48.0

NOTE : A search was made of the frequency spectrum from 0.45 MHz to 30 MHz and the measurements reported are the highest emissions relative to the FCC Class B Computing Device Limits.

Procedure: In accordance with ANSI C63.4 1992.

Approved By:

Alan Purkess

Radiated Measurements.

Test Data.

Freq Mhz	Amplitude dBuV	Cable Loss dB	Antenna Factor dB	Field Strength 3m dBuV/m	Field Strength 3m uV/m	Limit dBuv/m	Limit uV/m
35.481	7.3	1.4	15.3	24.0	15.8	40.0	100
43.867	16.5	1.5	10.9	28.9	27.9	40.0	100
50.187	21.2	1.6	7.9	30.7	34.3	40.0	100
81.462	19.9	1.8	7.2	28.9	27.9	40.0	100
150.349	8.7	2.8	10.6	22.1	12.7	43.5	150
232.668	11.7	3.4	9.8	24.9	17.6	46.0	200
664.767	16.5	6.4	20.4	43.3	146.2	46.0	200
997.150	9.0	8.0	24.9	41.9	124.5	46.0	200

NOTE : A search was made of the frequency spectrum from 30 MHz to 2000 MHz and the measurements reported are the highest emissions relative to the FCC Class B Computing Device Limits.

Procedure: In accordance with ANSI C63.4 1992.

Approved By:

A.A.Purkess

Details of Supporting System.

Unit under test.

Azure Ltd. AZV30 Colour Video and Image Capture card.

The system included a parallel printer, mouse and keyboard, and an IBM serial plotter.

Peripherals. (Unshielded mains cables)

Device	Description	Serial No.	FCCID
P C	HP Pavillion 7340P	FR70257336	FCC D.O.C
Monitor	HP Ergo 1024	KR70394380	CSYSC-528TEX
Keyboard	HP SK-2501	M96129608	FCC D.O.C
Mouse	HP M-S34	LzB62501263	DZL210472
Printer	HP Deskjet 660C	ES5AP1315H	B94C2164X
Plotter	IBM 6180	A2508	ANO8537370

EUT Operating Conditions.

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

The EMC exerciser software used during the radiated and conducted emission tests, exercises each of the various system internal and external components, sending a repeating "H" pattern to the serial, parallel and Video ports.

A 3-way RGB, Composite lead was also attached to the AZV30 Card, Connecting it to a Fluke 54200 TV pattern signal generator, which was situated externally to the test chamber since it was not considered to be part of the test proper. The Pattern generator was used to generate Colour Bars and greyscale, plus a window containing scrolling H Pattern.

The user controls were set to produce maximum emissions, contrast to maximum and brightness to raster extinction.

Worst case configuration

The EUT was tested with the Monitor set in the following mode:

Pels/line	Vertical Pels	Horizontal Scan kHz	Refresh rate Hz	Video clock MHz
640	480	31.4	60	25.6

FCC Site Compliance Statement.

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1585 (ext-216)
Facsimile: 301-344-2050

September 18, 1998

IN REPLY REFER TO
31040/SIT
1300F2

Hursley EMC Services Ltd.
Unit 16, Brickfield Lane
Chandlers Ford, Hampshire SO53 4DP
United Kingdom

Attention: R. St. John James

Re: Measurement facility located at Hursley Park
(3 & 10 meter site)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has also been added to our list of those who perform these measurement services for the public on a fee basis. An up-to-date list is available on the Internet at the FCC Website www.fcc.gov under Electronic Filing.

Sincerely,

Thomas W. Phillips
Electronics Engineer
Customer Service Branch