

2.3 Test Equipment

December 23, 1998

The following is the list of equipment used during the radiation and conducted testing.

HP 8447d Amplifier	Serial #1937A02787
HP 85650A Quasi-Peak Adapter	Serial #2521A00635
HP 8568A Spectrum Analyzer	Serial #2134A02775
HP 85685 RF Preselector	Serial #2510A00103
EMCO Biconilog Antenna	Serial #9706-1201

SETUP: -

In accordance with WYSE Technology test procedure.

PROCEDURE:

Biconilog antenna was used for frequency range 30MHz - 1 GHz. The frequency range was checked for signals strength. The antenna was then raised and lowered for final maximization. The frequency range was checked with antennas in the horizontal and vertical polarization.

3.0 TEST RESULTS

3.1 Test Description

CISPR Publication 22:1985, limits and methods of measurements of radio interface of information technology equipment, was the guiding document for the test. The product's radiated emissions from 30 MHz to 1000 MHz and its power mains conducted emissions from 150 KHz to 30 MHz were measured.

3.2 Test Configuration

The EUT was configured with a typical mix of available peripherals which fully configured all types of communications ports of the EUT and exercised it in a typical manner.

3.3 Test Procedure

For radiated emissions testing the equipment is installed on a 0.8 meter high non-conductive turntable 10 meter from the receiving antenna mast. The EUT is fully exercised during the test to maximize emissions. The receiving antenna is scanned over the height range of 1 to 4 meters in both polarities and the turntable is rotated with emissions level observed at each frequency. During the process the equipment configuration is also modified by moving the interconnecting cables to find the typical configuration that maximizes emissions at each frequency. The frequency range from 30 MHz to 1000 MHz is explored. Measurement data is compared to Class B limit.

For conducted emissions testing the equipment is moved to a 0.4 meter high platform and the EUT and Configurations equipment are powered from a different LISNs. Both sides of the AC line are measured and the results compared to the Class B limit.

3.4 Test Results

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A comparison of the measured data with the Class **B** limit of **CISPR** shows that Terminal **WINTERM 2715SE** was **2.75 dB** below the limits at the worst case frequency of **67.49 MHz** in a Vertical Polarization

3.5 Product Specification

Model: **WINTERM 2715SE**

Clock Circuit:

- 1) U1 = CPU, AMD, SC400-66, PC-AT, P/N=202036-50
- 2) Y5 = Crystal, 32.768 KHz, P/N=392013-01
- PLL CLK filters-
 - 3) C27 = 15uF, P/N=320310-17
 - 4) C32 = 330uF, P/N=320310-49
 - 5) C57 = 33pF, P/N=320310-25
 - 6) C68, C28 = 470pF, P/N= 320310-53
 - 7) C35 = 22pF, P/N=320310-21
 - 8) C20 = 0.01uF, P/N=320333-01
 - 9) C107 = 0.22uF, P/N=320316-49
 - 10) R111, R101, R110, R102 = 4.7 Kohm, P/N=370461-65
- CLK IO line-
 - 11) Y7 = Crystal, 1.8432 MHz, P/N=390000-01
 - 12) R74 = Zero ohm, P/N=370460-91
 - 13) R41 = 2.2 Mohm, P/N=370462-33
 - 14) C124 = 68uF, P/N=320310-33

Video Circuit:

- 1) U2 = Video chip, Cirrus Logic, CL-GD5440, P/N=205114-51
- 2) Y3 = OSC, 14.318 MHz, TTL, P/N=392007-01
- 3) C112 = 10pF, P/N=320310-13
- 4) R79 = 33 ohm, P/N=370456-13
- VL_LCLK line-
 - 5) R171, R173 = 33ohm, P/N=370456-13
 - 6) C110, C188 = 10pF, P/N=320310-13
- M CLKVDD line-
 - 7) R108 = 33ohm, P/N=370456-13
 - 8) C14 = 10uF, P/N=313080-13
 - 9) C121 = 0.1uF, P/N=320021-33
- V CLKVDD line-
 - 10) R109 = 33 ohm, P/N=370456-13
 - 11) C15 = 10uF, P/N=313080-13
 - 12) C119 = 0.1uF, 320021-33
- V FILTER line-
 - 13) R1 = 127 ohm, P/N=370466-11
 - 14) C122 = 0.1uF, P/N=320021-33
- V RED, V GRN, V BLU lines-
 - 15) L1, L4, L5 = 1.6uH, 43MTL, SMD type, P/N=400021-01

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- 16) C21, C22, C23, C24, C25, C26 = 33pF, P/N=320310-25
- 17) R81, R82, R83 = 75 ohm, P/N=370461-22

VSYNC, HSYNC lines-

- 18) C72, C73 = 220uF, P/N=320310-45
- 19) R67, R68 = 22 ohm, P/N=370461-09

Network Circuit:

- 1) U3 = Controller, CS8900, P/N=205110-01
- 2) Y4 = Crystal, 20 MHz, P/N=391002-39
- 3) T1 = Transformer, PE65745, 10Base isolation, P/N=429075-50

Filter-

- 4) C45, C47, C48, C49, C53, C54, C55, C56 = 33pF, P/N=320310-25
- 5) C113, C114, C115, C116 = 0.1uF, P/N=320021-33
- 6) R85 = 100 ohm, P/N=370466-01

RXD, TXD lines-

- 7) R7, R8 = 24.3 ohm, P/N=370465-38
- 8) C96 = 68uf, P/N=320310-33

Flash Memory: (Loaded to)

- 1) U25, U27 = IC, 4LC1M16ES-7, 1MX16, EDO, P/N=194077-01

3.5.1 Modifications

PHoM 15" Color

Transformer: P/N= 421553-08

C101: 0.22 μ f, 250V, P/N=320670-02

C102: 4700 pf, 250V & C103: 4700 pf, 250V, P/N=320050-77

C104: 0.1 μ f, 250V, P/N=320670-01

C143: 0.01 μ f, 250V & C144: 0.01 μ f, 250V, P/N=320050-70

L101 & L102, P/N =424526-02

Modifications:

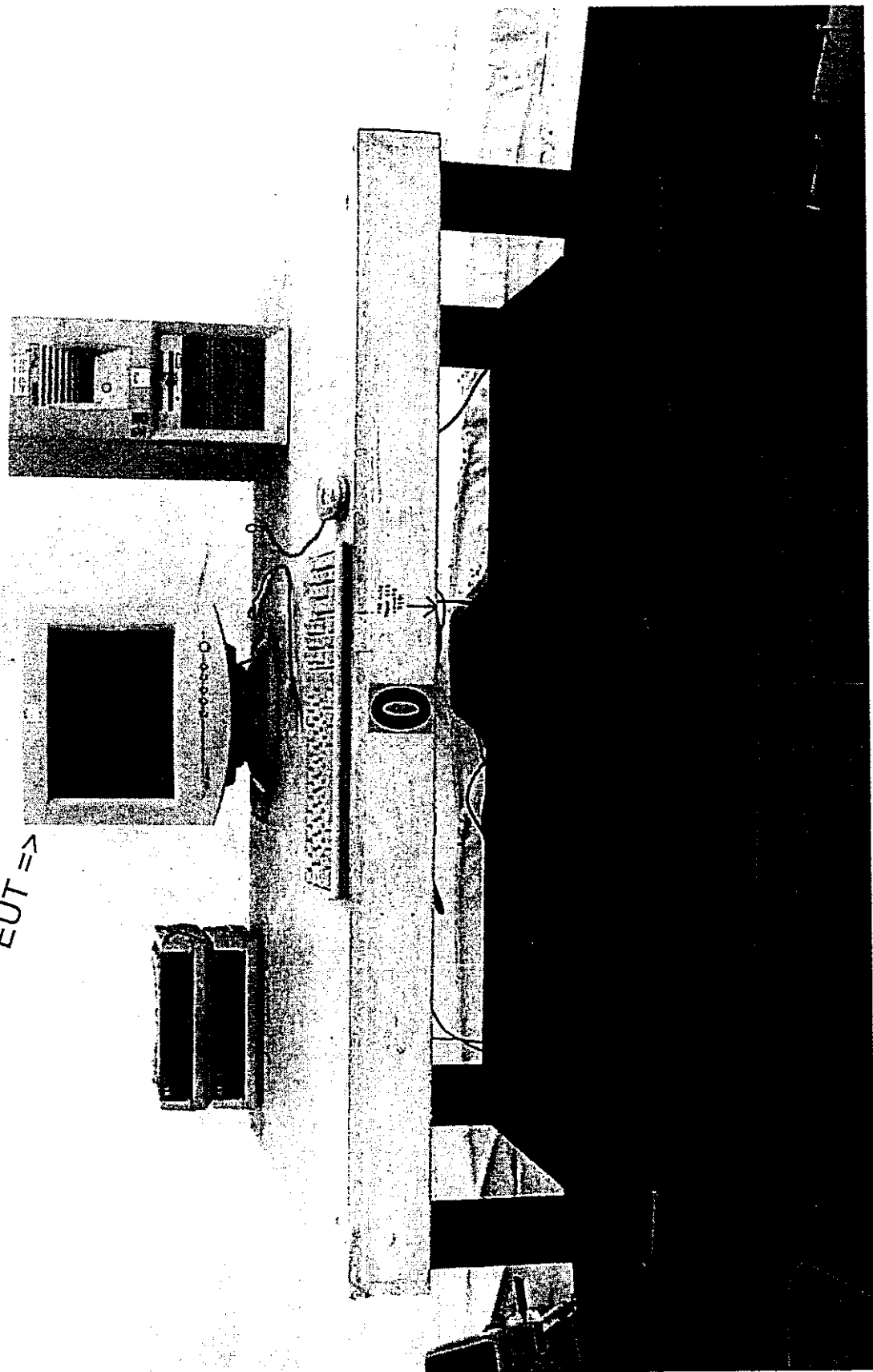
- 1) **Video Cable:** Shielded type provided with Ferrite Core type 47 at both ends.
size: 9.5mm (ID) x 17.5mm (OD) x 28.5mm (Height)
P/N=941247-05
- 2) **DC Harness:** Provided with two turns on Donut Ferrite Core
size: 6.34mm (Thickness) x 18.5mm (ID) x 32mm (OD) x 15.9mm (Height)
P/N=941248-04.
DC Harness length should be 26". The DC Harness and the Brightness wire are turned twice around the ferrite bead.
- 3) The length of the GND wire from right side of the CRT to AC Socket should be reduced to 10.5"-11.0".
- 4) The length of the GND wire from left side of the CRT to the first screw which connects the AC Socket bracket to Logic Housing (Metal Shield) should be 11".
Note: The GND wire must be connected to the first screw on the Socket bracket.

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- 5) The length of the GND wire from CRT Shield to AC Socket should be 2.5" to 2.75".
- 6) 22 Ohm resistor should be added in series with Q208 gate.
- 7) Added GND wire at both sides from I/O Panel to CRT Video Board Shield

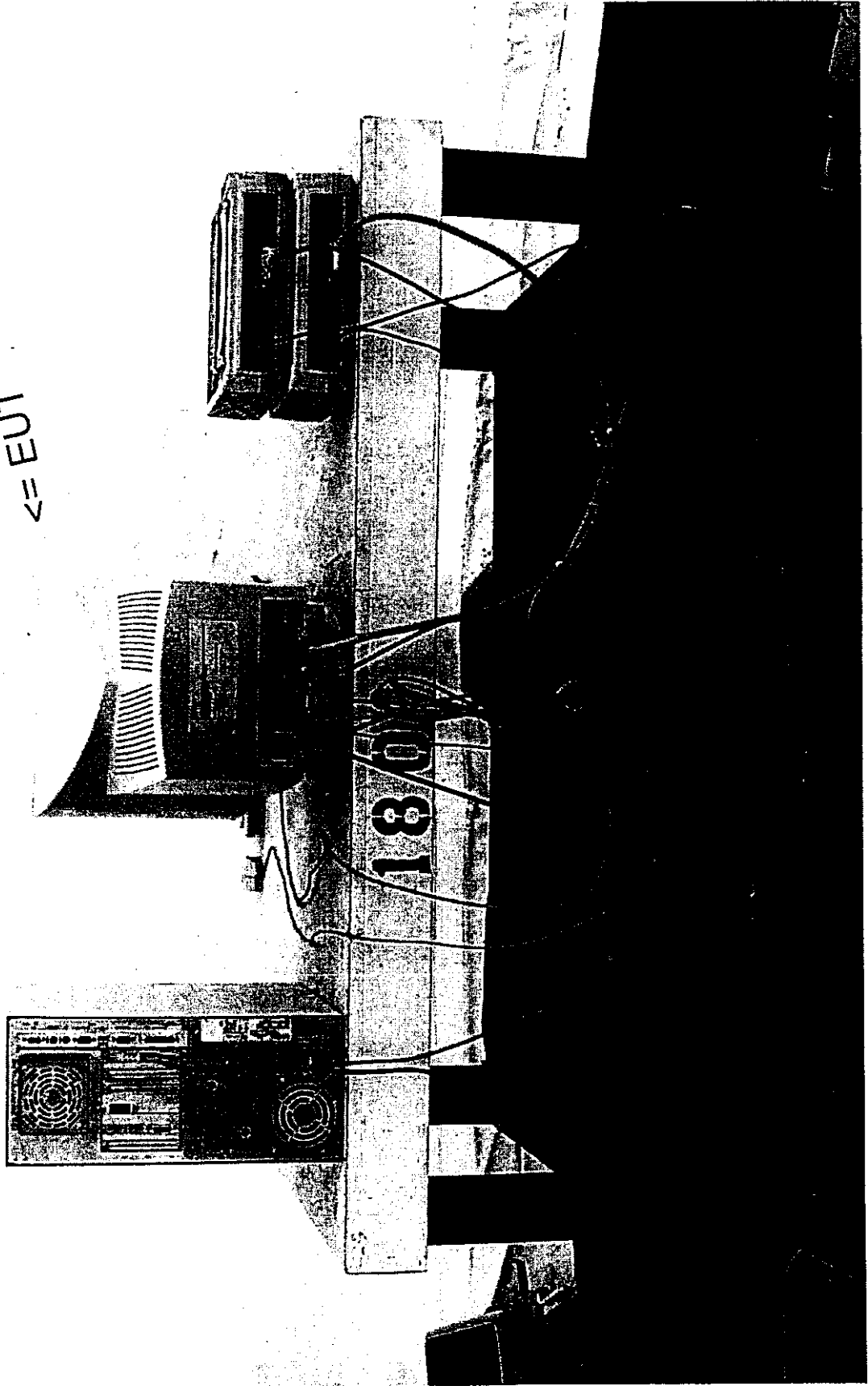
Wyse Technology OATS WT2715SE - EN55022B Radiated

EUT =>



**Wyse Technology OATS
WT2715SE - EN55022B Radiated**

$\leq$ EUT





March 31, 1999

To: Mr. George Tannahill
Federal Communications Commission
Equipment Approval Services
P.O. Box 358315
Pittsburgh, PA 15251-5315

Subject: Resubmittal of Modification and Class II Permissive Change to our FCC ID
DYDWT2700

Dear Mr. Tannahill:

Attached you will find our application package for the Modification and Class II Permissive Change to our FCC ID DYDWT2700. We submitted this application in January, but it was sent back to us for lack of a Form 159. The package was never received by Wyse.

I am enclosing a copy of our original submission package. If you have any questions or comments, please contact me at (408) 473-2697. Fax: (408) 473-2245.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Masood Abrishamcar". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Masood Abrishamcar
Regulatory Engineering Manager

Wyse Technology
3471 N. First St.
San Jose, CA 95134

Regulatory Information

DECLARATION OF CONFORMITY
According to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name: HEWLETT-PACKARD
Manufacturer's address: 5 Avenue Raymond Chanas
38320 Eybens, France

Declares that the product:

Product Name: Personal Computer
Model Number: HP Brio PC

Conforms to the following Product Specifications:

SAFETY: International : IEC 950: 1991+A1+A2+A3+A4
Europe : EN 60950: 1992+A1+A2+A3

EMC: CISPR 22: 1993 / EN 55022:1994 - Class B
EN 50082-1:1992
IEC 801-2: 1992 / prEN55024-2:1992 - 4kV CD, 8 kV AD
IEC 801-3: 1984 / prEN55024-3:1991 - 3 V/m
IEC 801-4: 1988 / prEN55024-4:1992 - 0.5 kV Signal Lines,
1 kV Power Lines

IEC 555-2:1982 +A1:1985 / EN 60555-2:1987
IEC 1000-3-3:1994 / EN 61000-3-3:1995

Supplementary information: The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC, amended by the directive 93/68/EEC and carries the CE-marking accordingly.

Grenoble, June 1997

Jean-Marc JULIA
Product Quality Manager



MPD
14/4/97

WT2715se

Test Description

WT2715se **PASSED******
GOLDEN SAMPLE

File#: 110998#2

EUT-- p/n: 901968-021; s/n: 1A618700014 (WT2715seLC from Taiwan)

Keyboard: Winterm p/n: 901861-26, Tag# 20730; Mouse: Logitech

Supporting Devices: HP Brio server, ID#: 20601

Software: 1024 X 768 256 bit H pattern with audio long song running

Parallel Port connected to HP 890C printer

Serial 1 Port connected to HP 2225D printer

Test Procedure Definition

Title	EN55022 Class B ,
Configuration	Wyse OATS 10m
Frequency range	30MHz to 1000MHz
Operations to perform	Maximize & Measure ;
Initial settings	Table angle: 0 degrees
	Tower height: 100 cms
	Antenna polarity: Horizontal

Maximize and measure

Maximize procedure

Measure using

QP detector All

Measure using

Avg. detector None

Copy results to list Final Horizontal Resu

Test control Continue (no pause)

MA300d
11/1/98

Final Vertical Result [24/849]

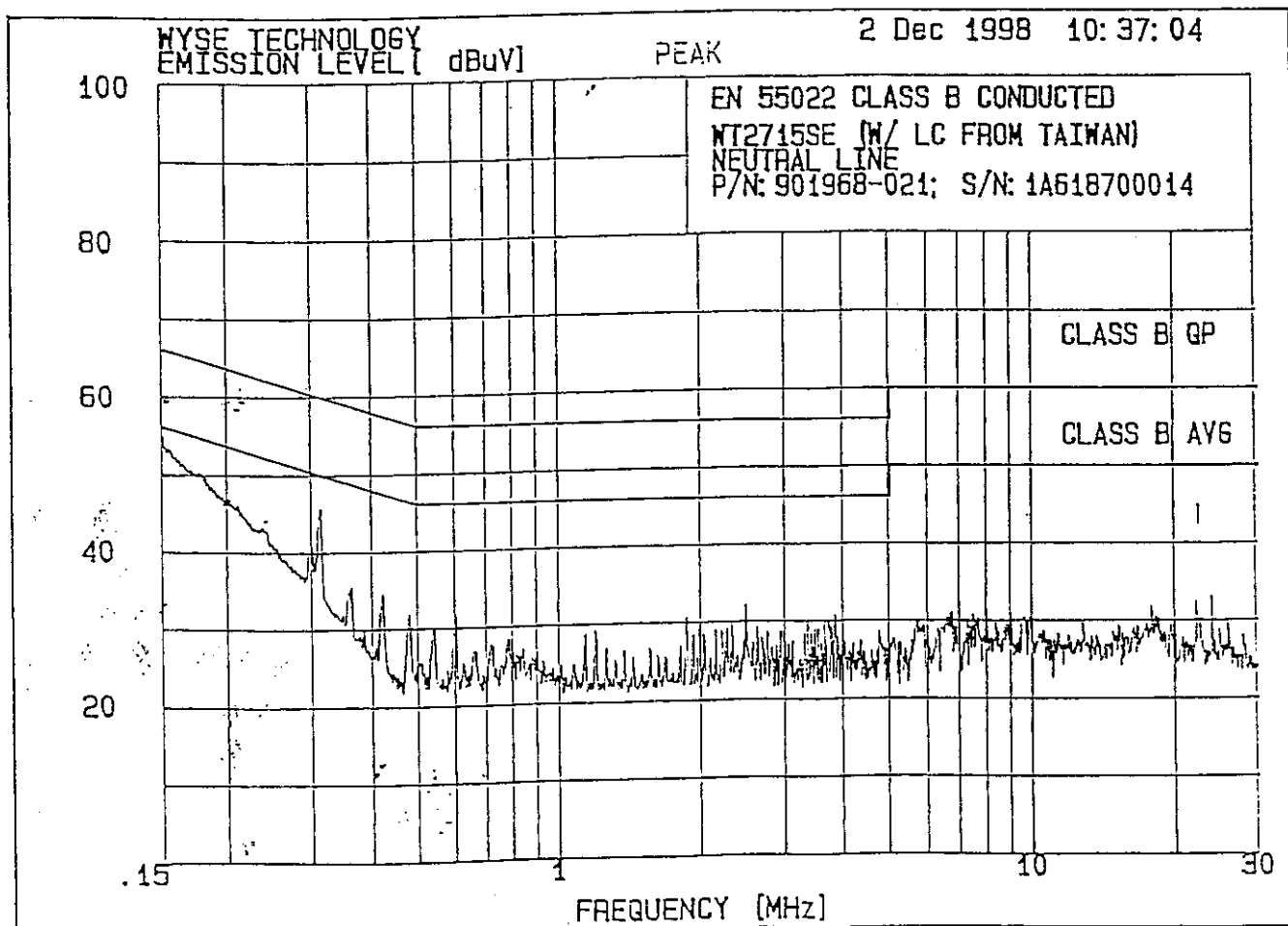
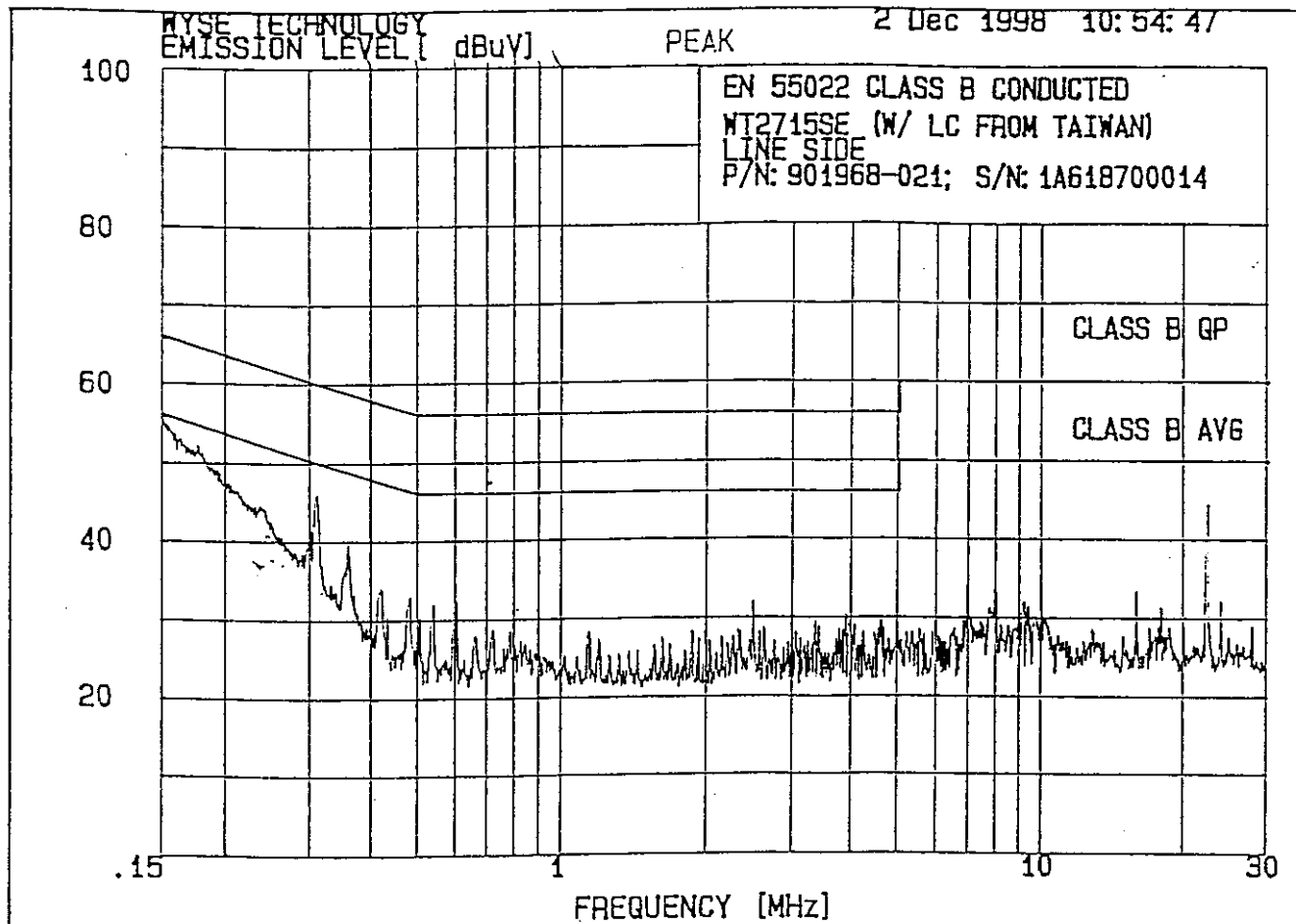
Frequency MHz	Peak dBuV/m	DelLim-Pk dB	QP dBuV/m	DelLim-QP dB	Angle deg	Hgt cm	Pol
33.749850	25.80	-4.20	21.84	-8.16	25	100	Vert
36.965709	18.16	-11.84	---	---	82	100	Vert
39.346907	19.90	-10.10	---	---	32	100	Vert
43.767676	20.97	-9.03	---	---	286	100	Vert
44.179321	27.62	-2.38	23.27*	-6.73	32	100	Vert
45.013611	28.22	-1.78	26.33*	-3.67	163	100	Vert
45.561640	21.32	-8.68	---	---	233	100	Vert
46.086589	23.31	-6.69	---	---	298	100	Vert
47.210547	19.66	-10.34	---	---	299	100	Vert
49.858981	27.62	-2.38	23.67*	-6.33	111	100	Vert
50.331697	22.67	-7.33	---	---	21	100	Vert
50.748390	24.37	-5.63	21.24*	-8.76	11	100	Vert
56.257275	26.19	-3.81	24.63*	-5.37	108	100	Vert
63.602380	27.04	-2.96	23.69*	-6.31	200	100	Vert
63.840657	25.77	-4.23	21.88	-8.12	353	100	Vert
66.728274	22.16	-7.84	---	---	254	100	Vert
66.811194	21.94	-8.06	---	---	180	100	Vert
67.498576	30.11	0.11	27.25*	-2.75	262	100	Vert
74.062781	17.13	-12.87	---	---	78	100	Vert
76.345347	20.74	-9.26	---	---	138	100	Vert
82.272548	17.59	-12.41	---	---	101	100	Vert
179.995988	20.39	-9.61	---	---	320	100	Vert
213.727979	19.24	-10.76	14.54	-15.46	96	100	Vert
292.499884	29.30	-7.70	29.33	-7.67	127	100	Vert

mgd
12/1/98

Final Horizontal Result [19/849]

Frequency MHz	Peak dBuV/m	DelLim-Pk dB	QP dBuV/m	DelLim-QP dB	Angle deg	Hgt cm	Pol
33.730783	19.04	-10.96	--.--	--.--	133	301	Horz
36.968718	15.57	-14.43	--.--	--.--	112	299	Horz
39.343898	15.46	-14.54	--.--	--.--	74	299	Horz
43.764667	14.65	-15.35	--.--	--.--	331	299	Horz
44.171333	16.24	-13.76	--.--	--.--	27	301	Horz
45.010104	16.75	-13.25	--.--	--.--	259	299	Horz
45.577721	16.92	-13.08	--.--	--.--	106	301	Horz
46.086589	14.77	-15.23	--.--	--.--	243	301	Horz
47.201353	13.63	-16.37	--.--	--.--	57	301	Horz
49.855227	15.88	-14.12	--.--	--.--	172	299	Horz
50.328688	14.87	-15.13	--.--	--.--	100	299	Horz
56.251617	18.35	-11.65	--.--	--.--	251	299	Horz
63.621474	14.63	-15.37	--.--	--.--	124	299	Horz
66.722143	15.78	-14.22	--.--	--.--	56	299	Horz
66.801996	14.04	-15.96	--.--	--.--	345	299	Horz
67.507018	22.74	-7.26	--.--	--.--	175	301	Horz
76.345347	16.17	-13.83	--.--	--.--	113	301	Horz
82.266416	10.89	-19.11	--.--	--.--	159	301	Horz
213.738685	18.65	-11.35	--.--	--.--	122	301	Horz

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WT2715SE EN55022B Conducted

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