



EMC

TEST REPORT

REPORT NO. : F89041006

MODEL NO. : 3000

DATE OF TEST : April 10, 2000

PREPARED FOR: BEHAVIOR TECH COMPUTER CORP.

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PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

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1.

CERTIFICATION

Issue Date: April 14, 2000

Product : CONTROLLER
Trade Name : BTC
Model No. : 3000
Applicant : BEHAVIOR TECH COMPUTER CORP.
Standard : FCC Part 15, Subpart B, Class B
CISPR 22:1993+A1:1995+A2:1996, Class B
ANSI C63.4-1992

We hereby certify that one sample of the designation has been tested in our facility on April 10, 2000. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class B limits radiated emission of applicable standards.

TESTED BY : Eric Chang , DATE: 4/14/2000
(Eric Chang)

CHECKED BY : Yemmy Soong , DATE: 4/14/2000
(Yemmy Soong)

APPROVED BY : Mike Su , DATE: 4/14/2000
(Mike Su)

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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	CONTROLLER
Model No.	:	3000
Power Supply	:	DC 4.5V (from 3 AAA batteries)

Note: The EUT is a wireless credit card size remote controller, which is capable of controlling PC peripherals from any angle.

For more detailed features description, please refer to manufacturer's specification or User's Manual.



2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

No	Product	Brand	Model No.	FCC ID	I/O Cable
1.	PERSONAL COMPUTER	IBM	2187-12W	FCC DoC Approved	Nonshielded Power (1.8m)
2.	MONITOR	ADI	PD-959	FCC DoC Approved	Shielded Signal (1.8m) Nonshielded Power (1.8m)
3.	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (1.2m) Nonshielded Power (1.9m)
4.	MODEM	ACEEX	1414	IFAXDM1414	Shielded Signal (1.2m) Nonshielded Power (1.9m)
5.	RECEIVER	BTC	5110S	E5XKBIHP87M1 0M	Shielded Signal (1.8m)

2.3 TEST METHODOLOGY AND CONFIGURATION

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4: 1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site.

Please refer to the photos of test configuration in Item 5.



3. TEST INSTRUMENTS

3.1 TEST INSTRUMENTS (EMISSION)

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated until
HP Spectrum Analyzer	8590L	3544A00941	Dec. 05, 2000
HP Pre-Amplifier	8447D	2944A08312	Sept. 7, 2000
HP Preamplifier	8347A	3307A01088	Aug. 30, 2000
HP Preamplifier	8449B	3008A01201	Dec. 14, 2000
R&S CONTROLLER	ESVS10	844594/010	Sept. 29, 2000
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2000
ROHDE & SCHWARZ TEST CONTROLLER	ESMI	839013/007 839379/002	Aug. 30, 2000
CHASE BILOG Antenna	CBL6111A	1500	Aug. 30, 2000
EMCO Double Ridged Guide Antenna	3115	9312-4192	March 29, 2001
EMCO Turn Table	1060-04	1196	NA
EMCO Tower	1051	1264	NA
Open Field Test Site	Site 1	ADT-R01	Aug. 27, 2000

Note: 1. The measurement uncertainty is less than +/- 3.0dB, which is calculated as per NAMAS document NIS81.

2. The calibration interval of the above test instruments is 12 months.
And the calibrations are traceable to NML/ROC and NIST/USA.



3.2 LIMITS OF RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m) *	Class B (at 10m) *
	dBuV/m	dBuV/m
30 - 230	40	30
230 - 1000	47	37

* Detector Function: Quasi-Peak

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	Peak	Average	Peak	Average
Above 1000	80.0	60.0	74.0	54.0

- Note: (1) The lower limit shall apply at the transition frequencies.
 (2) Emission level (dBuV/m) = 20 log Emission level (uV/m).
 (3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



4. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range : 30 - 1000 MHz (Radiated Emission)
Input Voltage : DC 4.5V (from 3 AAA batteries)
Temperature : 21 degree C
Humidity : 60 %
Atmospheric Pressure : 1005 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of radiated emission: -2.2 dB at 168.01 MHz

4.2 EUT OPERATION CONDITION

1. Turn on the power of all equipment.
2. PC reads a test program to enable all functions.
3. EUT sends IR signal messages to receiver, and the receiver receives the signal, demodulates it and re-transmits to the PC.
4. PC sends messages to monitor and monitor displays messages on screen.
5. PC sends messages to printer, and the printer prints them on paper.
6. Repeat steps 3-6.



4.3 TEST DATA OF RADIATED EMISSION

EUT: **CONTROLLER**MODEL: **3000**ANT. POLARITY: HorizontalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 3 M

Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
120.00	12.7	10.3	23.0	30.0	-7.0	400	121
137.76	13.1	6.2	19.3	30.0	-10.7	400	184
144.02	12.9	8.8	21.7	30.0	-8.3	400	255
156.01	12.0	8.2	20.2	30.0	-9.8	400	219
168.01	11.3	12.3	23.6	30.0	-6.4	400	269
264.13	14.2	9.7	23.9	37.0	-13.1	400	252
408.01	18.5	8.8	27.3	37.0	-9.7	255	284
450.00	19.2	9.5	28.7	37.0	-8.3	242	216

- REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB)
+ Reading value (dBuV).
 2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level - Limit value



TEST DATA OF RADIATED EMISSION

EUT: CONTROLLERMODEL: 3000ANT. POLARITY: VerticalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 3 M

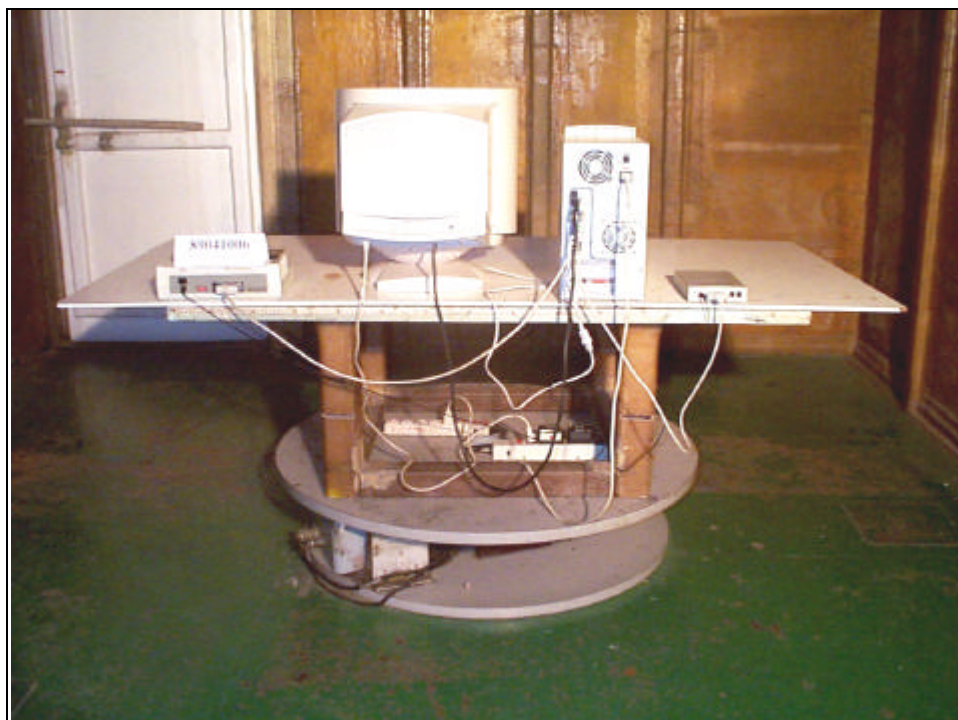
Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
60.70	6.9	14.0	20.9	30.0	-9.1	132	220
120.01	12.7	11.7	24.4	30.0	-5.6	100	257
132.03	13.0	10.0	23.0	30.0	-7.0	100	263
156.03	12.0	12.8	24.8	30.0	-5.2	100	5
168.01	11.3	16.5	27.8	30.0	-2.2	100	344
172.01	11.0	10.6	21.6	30.0	-8.4	100	273
264.13	14.2	9.5	23.7	37.0	-13.3	100	339
324.59	15.7	9.6	25.3	37.0	-11.7	223	78

- REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB)
+ Reading value (dBuV).
 2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level - Limit value



5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH MINIMUM MARGIN

RADIATED EMISSION TEST





6. APPENDIX - INFORMATION OF THE TESTING LABORATORY

Information of the testing laboratory

We, ADT Corp., are founded in 1988, to provide our best service in EMC and Safety consultation. Our laboratory is accredited by the following approval agencies according to ISO/IEC Guide 25 or EN 45001:

- | | |
|---------------|--------------------------------------|
| ● USA | FCC, UL, NVLAP |
| ● Germany | TUV Rheinland
TUV Product Service |
| ● Japan | VCCI |
| ● New Zealand | RFS |
| ● Norway | NEMKO, DNV |
| ● U.K. | INCHCAPE |
| ● R.O.C. | BSMI |

Enclosed please find some certificates of our laboratory obtained from approval agencies. If you have any comments, please feel free to contact us with the following:

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