

FCC ID: E5XMSM853UL

Report No: 71004006-D

FCC 47 CFR PART 15 SUBPART B TEST REPORT

<u>for</u>

Laser Mouse

MODEL: M853UL, M857UL, M859UL

Test Report Number: 71004006-D

Issued for

BEHAVIOR TECH COMPUTER CORP. 20F-B, No. 98, Sec. 1, Sintai 5th Rd., Sijhih City, Taipei County 22102, Taiwan (R.O.C.)

Issued By:

Compliance Certification Services Inc.

Linkuo Laboratory
No. 81-1, Lane 210, Pa-De 2nd Rd., Luchu Hsiang,
Taoyuan Shien, (338), Taiwan, R.O.C.
TEL: 886-3-324-0332

FAX: 886-3-324-5235

E-Mail: service@tw.ccsemc.com Issued Date: October 25, 2007







Note: This report shall not be reproduced except in full, without the written approval of Compliance Certification Services Inc. This document may be altered or revised by Compliance Certification Services Inc. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF, A2LA, NIST or any government agencies. The test results in the report only apply to the tested sample.



FCC ID: E5XMSM853UL Report No: 71004006-D

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00		Initial Issue	ALL	

FCC ID: E5XMSM853UL

Report No: 71004006-D

TABLE OF CONTENTS

1	TEST RESULT CERTIFICATION	4
2	EUT DESCRIPTION	
3	TEST METHODOLOGY	
3.1.	DECISION OF FINAL TEST MODE	
3.2.	EUT SYSTEM OPERATION	
4	SETUP OF EQUIPMENT UNDER TEST	7
4.1.	DESCRIPTION OF SUPPORT UNITS	
4.2.	CONFIGURATION OF SYSTEM UNDER TEST	8
5	FACILITIES AND ACCREDITATIONS	9
5.1.	FACILITIES	
5.2.	ACCREDITATIONS	
5.3.	MEASUREMENT UNCERTAINTY	
6	CONDUCTED EMISSION MEASUREMENT	
6.1.	LIMITS OF CONDUCTED EMISSION MEASUREMENT	
6.2.	TEST PROCEDURES	
6.3.	TEST SETUP	
6.4.	DATA SAMPLE:	
6.5.	TEST RESULTS	
7	RADIATED EMISSION MEASUREMENT	
7.1.	LIMITS OF RADIATED EMISSION MEASUREMENT	
7.2.	TEST INSTRUMENTS	
7.3.	TEST PROCEDURES	
7.4.	TEST SETUP	
7.5. 7.6.	DATA SAMPLE: TEST RESULTS	
7.0. 8	PHOTOGRAPHS OF THE TEST CONFIGURATION	
0	THUTUGKATHS OF THE TEST CUNTIGUKATION	



FCC ID: E5XMSM853UL

Report No: 71004006-D

1 TEST RESULT CERTIFICATION

Product:	Laser Mouse		
Model:	el: M853UL, M857UL, M859UL		
Brand:	BTC, EMPREX		
Applicant:	BEHAVIOR TECH COMPUTER CORP. 20F-B, No. 98, Sec. 1, Sintai 5th Rd., Sijhih City, Taipei County 22102, Taiwan (R.O.C.)		
Manufacturer:	BEHAVIOR TECH COMPUTER CORP. 20F-B, No. 98, Sec. 1, Sintai 5th Rd., Sijhih City, Taipei County 22102, Taiwan (R.O.C.)		
Tested:	October 8 ~ 22, 2007		

EMISSION						
Standard	Item	Result	Remarks			
FCC 47 CFR Part 15 Subpart B (August 14, 2006),	Conducted (Main Port)	PASS	Meet Class B limit			
ICES-003 Issue 4 ANSI C63.4-2003	Radiated	PASS	Meet Class B limit			

Note: 1. The test result judgment is decided by the limit of measurement standard

2. The information of measurement uncertainty is available upon the customer's request.

Deviation from Applicable Standard	
None	

The above equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by:	Reviewed by:	
Rex. La:	Anadolla	
Rex Lai Section Manager	Amanda Wu Section Manager	

2 EUT DESCRIPTION

Product	Laser Mouse
Brand Name	BTC, EMPREX
Model	M853UL, M857UL, M859UL
Model Discrepancy	All the specification is identical except they come with different layout and external appearance. The detail description, please refer to the external photos.
Applicant	BEHAVIOR TECH COMPUTER CORP.
Housing material	Plastic
Serial Number	71004006
Received Date	October 04, 2007
EUT Power Rating	Powered from host device via USB cable
USB Cable	Unshielded 1.50m (Non-detachable)

3 TEST METHODOLOGY

3.1. DECISION OF FINAL TEST MODE

1. The following test modes were scanned during the preliminary test:

Mode 1

Operating for model: M853UL

Mode 2

Operating for model: M857UL

Mode 3

Operating for model: M859UL

2. After the preliminary scan, the following test mode was found to produce the highest emission level.

Final Test I	Final Test Mode					
	Conducted	Mode 4 2 2				
Emission	Emission	Mode 1, 2, 3				
EIIIISSIOII	Radiated	Mode 4 2 2				
	Emission	Mode 1, 2, 3				

Then, the above highest emission mode of the configuration of the EUT and cable was chosen for all final test items.

3.2. EUT SYSTEM OPERATION

Software Used During the Test						
Operating System	Windows XP					
Program Sequence	 EMI test program (file name: EMCTEST) was loaded and executed in "Windows XP" mode. The detect signal was sent to EUT. Data was sent to the monitor, filling the screen with upper case of "H" patterns. Test program sequentially all related I/O's of Host PC include EUT and sent "H" patterns to all applicable output ports of Host PC. Repeat 2 to 4. 					
RF Management Software	DOS/TEST MODE SETUP					

Note: Test program is self-repeating throughout the test.

4 SETUP OF EQUIPMENT UNDER TEST

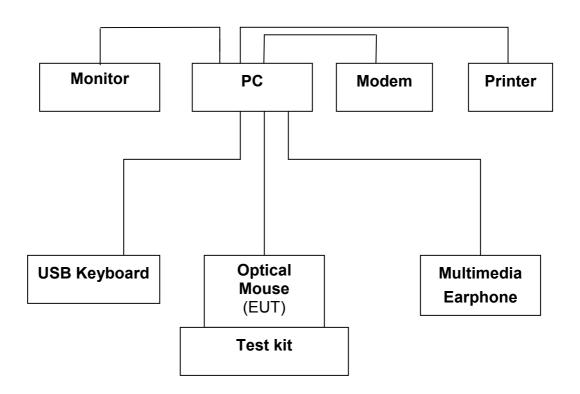
4.1. DESCRIPTION OF SUPPORT UNITS

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

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1.	PC	DX-6120	SGH53102TW	FCC DoC	HP	N/A	Unshielded, 1.8m
2.	LCD Monitor	2405FPW	CN-0M6754-46633-56R-03NS	FCC DoC	DELL	Shielded, 1.2m	Unshielded, 1.8m
3.	CRT Monitor	959NF	AQ19H2RT706139P	FCC DoC	Samsung	Shielded, 1.8m with 2 cores	Unshielded, 1.8m
4.	USB Keyboard	6512-UV	21200201-1293999953	FCC DoC	ACER	Shielded, 1.8m	N/A
5.	USB Keyboard	Y-SJ14C	867247-0121	FCC DoC	Logitech	Shielded, 1.8m	N/A
6.	Printer	STYLUS C60	DR3K041515	IFAXDM1417	EPSON	Shielded, 1.2m	N/A
7.	MODEM	DM-1414	211026193	FCC DoC	ACEEX	Shielded, 1m	Unshielded, 1.2m
8.	Multimedia Earphone	ET-E220	N/A	FCC DoC	Ergotech	Unshielded, 1.8m	N/A
9.	Test kit	N/A	N/A	N/A	N/A	N/A	N/A

Note: Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.2. CONFIGURATION OF SYSTEM UNDER TEST



FCC ID: E5XMSM853UL

Report No: 71004006-D

FACILITIES AND ACCREDITATIONS

5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at No. 81-1, Lane 210, Pa-De 2nd Rd., Luchu Hsiang, Taoyuan Shien, Taiwan. No.11, Wugong 6th Rd., Wugu Industrial Park, Taipei Hsien 248, Taiwan

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR 22. All receiving equipment conforms to CISPR 16-1-1, CISPR 16-1-2, CISPR 16-1-3, CISPR 16-1-4, CISPR 16-1-5.

5.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

> FCC, A2LA **USA**

Japan VCCI **NEMKO** Norway

Canada **INDUSTRY CANADA**

Taiwan TAF, BSMI, NCC

Copies of granted accreditation certificates are available for downloading from our web site, http:///www.ccsemc.com

5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Conducted emissions	9kHz~30MHz	2.81
Radiated emissions	30~200MHz	4.0235
Radiated emissions	200~1000MHz	3.8718

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Consistent with industry standard (e.g. CISPR 22: 2006, clause 11, Measurement Uncertainty) determining compliance with the limits shall be base on the results of the compliance measurement. Consequently the measure emissions being less than the maximum allowed emission result in this be a compliant test or passing test.

The acceptable measurement uncertainty value without requiring revision of the compliance statement is base on conducted and radiated emissions being less than U_{CISPR} which is 3.6dB and 5.2dB respectively. CCS values (called U_{Lab} in CISPR 16-4-2) is less than U_{CISPR} as shown in the table above. Therefore, MU need not be considered for compliance.

6 CONDUCTED EMISSION MEASUREMENT

6.1. LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class A	A (dBuV)	Class B (dBuV)		
TREQUERT (WITZ)	Quasi-peak	Average	Quasi-peak	Average	
0.15 - 0.5	79	66	66 - 56	56 - 46	
0.50 - 5.0	73	60	56	46	
5.0 - 30.0	73	60	60	50	

NOTE: (1) The lower limit shall apply at the transition frequencies.

- (2) The limit decreases in line with the logarithm of the frequency in the range 0.15 to 0.50 MHz.
- (3) All emanations 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.

6.2. TEST INSTRUMENTS

	Cond	ducted Emission R	Room					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due				
EMI Test Receiver	R&S	ESCS30	845552/030	03/28/2008				
Pulse Limiter	R&S	ESH3-Z2	100299	11/09/2007				
LISN	R&S	ESH2-Z5	843285/010	01/08/2008				
LISN	R&S	ESH3-Z5	848773/014	10/26/2007				
ISN	FCC	FCC-TLISN-T2-02	20324	12/19/2007				
ISN	FCC	FCC-TLISN-T4-02	20325	12/19/2007				
ISN	FCC	FCC-TLISN-T8-02	20326	12/19/2007				
Current Probe	FCC	F-35	506	06/01/2008				
Test S/W	LabVIEW 6.1 (CCS Conduction Test SW Version_01)							

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request.

6.3. TEST PROCEDURES (please refer to measurement standard or CCS SOP PA-031)

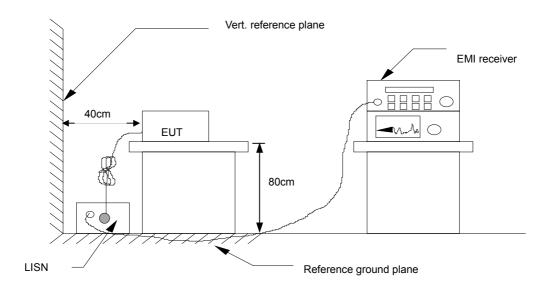
Procedure of Preliminary Test

- The EUT and support equipment, if needed, were set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor standing equipment, it is placed on the ground plane, which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
- The test equipment EUT installed by AC main power, through a Line Impedance Stabilization Network (LISN), which was supplied power source and was grounded to the ground plane.
- All support equipment power by from a second LISN.
- The test program of the EUT was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The Receiver scanned from 150kHz to 30MHz for emissions in each of the test modes.
- During the above scans, the emissions were maximized by cable manipulation.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test.
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

Procedure of Final Test

- EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.
- The test data of the worst-case condition(s) was recorded.

6.4. TEST SETUP



 For the actual test configuration, please refer to the related item - Photographs of the Test Configuration.

6.5. DATA SAMPLE:

Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correctrion factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
x.xx	43.95	33.00	10.00	53.95	43.00	56.00	46.00	-2.05	-3.00	Pass

Frequency (MHz) = Emission frequency in MHz

Reading (dBuV) = Uncorrected Analyzer/Receiver reading + Insertion loss of LISN, if it >

0.5 dB

Correction Factor (dB) = LISN Factor + Cable loss

Result (dBuV) = Raw reading converted to dBuV and CF added

Limit (dBuV) = Limit stated in standard Margin (dB) = Result (dBuV) – Limit (dBuV)

6.6. TEST RESULTS

CCS Conduction Test

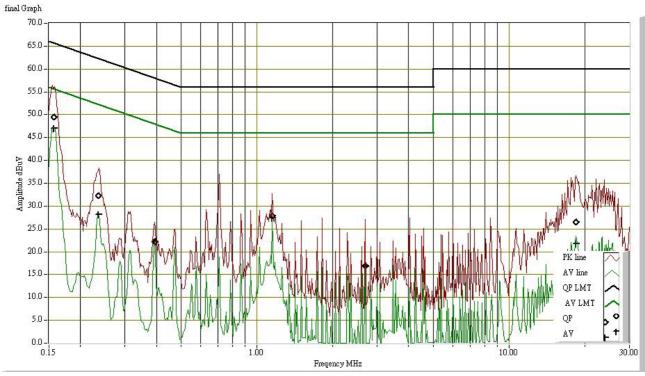
Job No.: 71004006 **Line**: L1

Standard:FCC Part 15B Class BDate:2007/10/19Test Item:Conduction EmissionTime:AM 12:27

Temp.(°C)/Hum.(%RH): 25°C/55%RH Tested By: Ming Chen

Company: BEHAVIOR TECH COMPUTER CORP.

Model: M853UL Mode: 1



Freq. (MHz)	QP Reading	AV Reading	Corr. factor	QP Result	AV Result	QP Limit	AV Limit	QP Margin	AV Margin	Remark
0.157	49.440	47.040	0.149	49.589	47.189	65.621	55.621	-16.032	-8.432	PASS
0.236	32.190	28.150	0.097	32.287	28.247	62.236	52.236	-29.949	-23.989	PASS
0.393	22.190	21.230	0.039	22.229	21.269	58.000	48.000	-35.771	-26.731	PASS
1.153	27.820	27.450	0.002	27.822	27.452	56.000	46.000	-28.178	-18.548	PASS
2.684	16.920	16.750	0.031	16.951	16.781	56.000	46.000	-39.049	-29.219	PASS
18.461	26.550	21.790	0.468	27.018	22.258	60.000	50.000	-32.982	-27.742	PASS

REMARKS: L1 = Line One (Live Line)



CCS Conduction Test

Job No.: 71004006 **Line**: L2

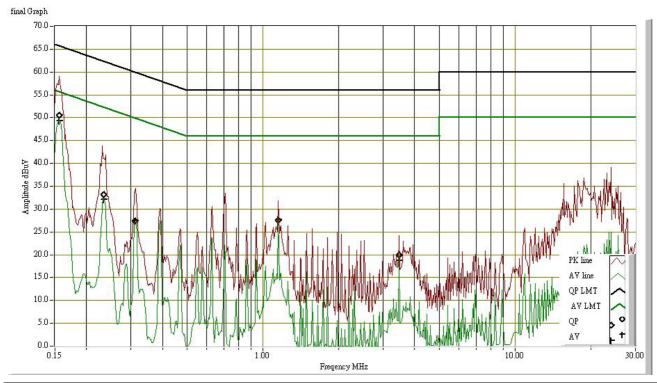
 Standard:
 FCC Part 15B Class B
 Date:
 2007/10/18

 Test Item:
 Conduction Emission
 Time:
 PM 11:42

 Temp.(°C)/Hum.(%RH):
 25°C/55%RH
 Tested By:
 Ming Chen

Company: BEHAVIOR TECH COMPUTER CORP.

Model: M853UL **Mode:** 1



Freq. (MHz)	QP Reading	AV Reading	Corr. factor	QP Result	AV Result	QP Limit	AV Limit	QP Margin	AV Margin	Remark
0.156	50.450	49.300	0.150	50.600	49.450	65.674	55.674	-15.075	-6.225	PASS
0.234	33.210	32.130	0.098	33.308	32.228	62.307	52.307	-28.999	-20.079	PASS
0.312	27.320	26.430	0.069	27.389	26.499	59.917	49.917	-32.528	-23.418	PASS
1.153	27.550	26.660	0.002	27.552	26.662	56.000	46.000	-28.448	-19.338	PASS
3.464	19.960	18.650	0.054	20.014	18.704	56.000	46.000	-35.986	-27.296	PASS
23.634	18.310	14.830	0.587	18.897	15.417	60.000	50.000	-41.103	-34.583	PASS

REMARKS: L2 = Line Two (Neutral Line)



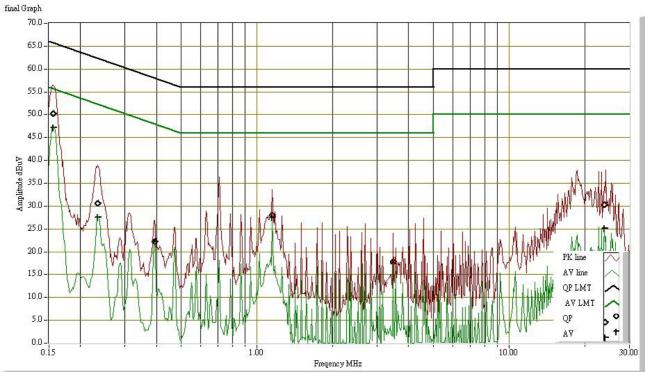
CCS Conduction Test

Job No.: 71004006 L1 Line:

Standard: FCC Part 15B Class B Date: 2007/10/19 Test Item: Time: AM 12:01 Conduction Emission Temp.(°C)/Hum.(%RH): 25°C/55%RH Tested By: Ming Chen

Company: BEHAVIOR TECH COMPUTER CORP.

2 Model: M857UL Mode:



Freq. (MHz)	QP Reading	AV Reading	Corr. factor	QP Result	AV Result	QP Limit	AV Limit	QP Margin	AV Margin	Remark
0.156	50.160	47.120	0.150	50.310	47.270	65.674	55.674	-15.365		PASS
0.234	30.530	27.580	0.098	30.628	27.678	62.307	52.307	-31.679	-24.629	PASS
0.393	22.270	21.290	0.039	22.309	21.329	58.000	48.000	-35.691	-26.671	PASS
1.153	28.060	27.520	0.002	28.062	27.522	56.000	46.000	-27.938	-18.478	PASS
3.464	17.860	17.280	0.054	17.914	17.334	56.000	46.000	-38.086	-28.666	PASS
23.823	30.220	25.040	0.592	30.812	25.632	60.000	50.000	-29.188	-24.368	PASS

REMARKS: L1 = Line One (Live Line)



FCC ID: E5XMSM853UL Report No: 71004006-D

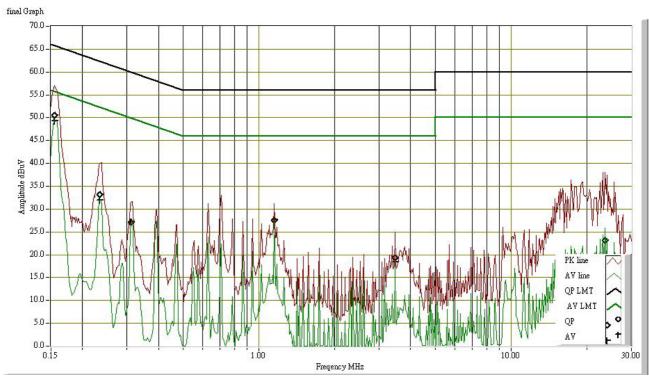
CCS Conduction Test

Job No.: 71004006 L2 Line:

Standard: FCC Part 15B Class B Date: 2007/10/18 Test Item: Time: PM 11:53 Conduction Emission Temp.(°C)/Hum.(%RH): 25°C/55%RH Tested By: Ming Chen

Company: BEHAVIOR TECH COMPUTER CORP.

2 Model: M857UL Mode:



Freq. (MHz)	QP Reading	AV Reading	Corr. factor	QP Result	AV Result	QP Limit	AV Limit	QP Margin	AV Margin	Remark
0.155	50.490	49.300	0.150	50.640	49.450	65.728	55.728	-15.087	-6.277	PASS
0.234	33.130	32.020	0.098	33.228	32.118	62.307	52.307	-29.079	-20.189	PASS
0.312	27.060	26.230	0.069	27.129	26.299	59.917	49.917	-32.788	-23.618	PASS
1.153	27.590	26.710	0.002	27.592	26.712	56.000	46.000	-28.408	-19.288	PASS
3.464	19.280	18.340	0.054	19.334	18.394	56.000	46.000	-36.666	-27.606	PASS
23.634	23.150	17.890	0.587	23.737	18.477	60.000	50.000	-36.263	-31.523	PASS

REMARKS: L2 = Line Two (Neutral Line)



FCC ID: E5XMSM853UL Report No: 71004006-D

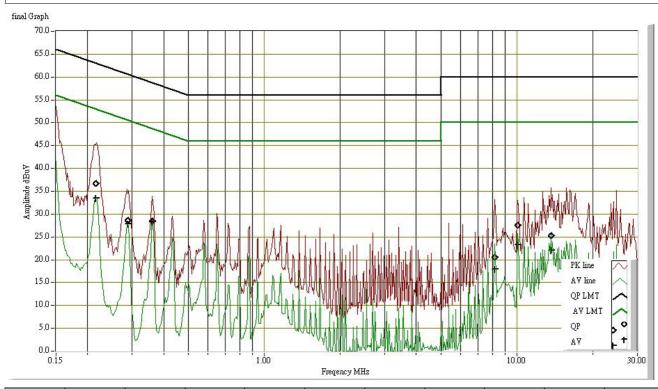
CCS Conduction Test

Job No.: 71004006 L1 Line:

Standard: FCC Part 15B Class B Date: 2007/10/08 Test Item: Time: PM 08:51 Conduction Emission Temp.(°C)/Hum.(%RH): 25°C/55%RH Tested By: Ming Chen

Company: BEHAVIOR TECH COMPUTER CORP.

3 Model: M859UL Mode:



Freq. (MHz)	QP Reading	AV Reading	Corr. factor	QP Result	AV Result	QP Limit	AV Limit	QP Margin	AV Margin	Remark
0.216	36.620	33.480	0.104	36.724	33.584	62.971	52.971	-26.247	-19.387	PASS
0.288	28.670	27.870	0.078	28.748	27.948	60.582	50.582	-31.834	-22.634	PASS
0.360	28.470	28.340	0.051	28.521	28.391	58.729	48.729	-30.207	-20.337	PASS
8.191	20.610	17.920	0.228	20.838	18.148	60.000	50.000	-39.162	-31.852	PASS
10.075	27.470	23.290	0.302	27.772	23.592	60.000	50.000	-32.228	-26.408	PASS
13.638	25.260	22.090	0.385	25.645	22.475	60.000	50.000	-34.355	-27.525	PASS

REMARKS: L1 = Line One (Live Line)



FCC ID: E5XMSM853UL Report No: 71004006-D

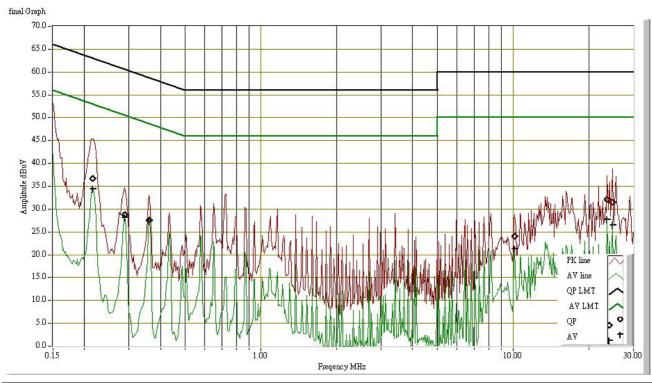
CCS Conduction Test

Job No.: 71004006 L2 Line:

Standard: FCC Part 15B Class B Date: 2007/10/08 Test Item: Time: PM 09:07 Conduction Emission Temp.(°C)/Hum.(%RH): 25°C/55%RH Tested By: Ming Chen

Company: BEHAVIOR TECH COMPUTER CORP.

3 Model: M859UL Mode:



Freq. (MHz)	QP Reading	AV Reading	Corr. factor	QP Result	AV Result	QP Limit	AV Limit	QP Margin	AV Margin	Remark
0.216	36.740	34.380	0.104	36.844	34.484	62.971	52.971	-26.127	-18.487	PASS
0.288	28.690	28.150	0.078	28.768	28.228	60.582	50.582	-31.814	-22.354	PASS
0.360	27.480	27.430	0.051	27.531	27.481	58.729	48.729	-31.197	-21.247	PASS
10.156	23.970	21.340	0.304	24.274	21.644	60.000	50.000	-35.726	-28.356	PASS
23.634	32.080	27.640	0.587	32.667	28.227	60.000	50.000	-27.333	-21.773	PASS
24.791	31.550	26.510	0.617	32.167	27.127	60.000	50.000	-27.833	-22.873	PASS

REMARKS: L2 = Line Two (Neutral Line)

7 RADIATED EMISSION MEASUREMENT

7.1. LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	dBuV/m (At 10m)					
TINEQUENCT (MHZ)	Class A	Class B				
30 ~ 230	40	30				
230 ~ 1000	47	37				

Frequency	Class A (dBu	V/m) (At 10m)	Class B (dBuV/m) (At 3m)		
(MHZ)	Average Peak		Average	Peak	
Above 960	59.5	79.5	54	74	

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

7.2. TEST INSTRUMENTS

	O	pen Area Test Site	# 2						
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due					
Spectrum Analyzer	ADVANTEST	R3261A	N/A	N.C.R					
EMI Test Receiver	R&S	ESVS10	834468/006	04/15/2008					
Pre-Amplifier	HP	8447D	2944A08780	07/20/2008					
Bilog Antenna	TESEQ	CBL 6112D	23189	07/06/2008					
Turn Table	EMCO	2081-1.21	9709-1885	N.C.R					
Antenna Tower	EMCO	2075-2	9707-2060	N.C.R					
Controller	EMCO	2090	9709-1256	N.C.R					
RF Switch	ANRITSU	MP59B	M76890	N.C.R					
Site NSA	Site NSA CCS		N/A	08/10/2008					
Test S/W		LabVIEW 6.1 (CCS OATS EMI SW V2.6)							

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request.

7.3. TEST PROCEDURES (please refer to measurement standard or CCS SOP PA-031)

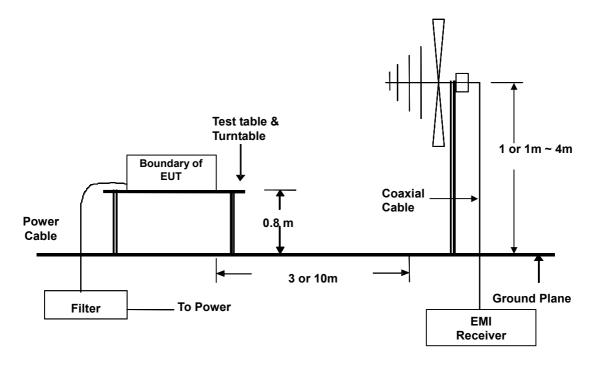
Procedure of Preliminary Test

- The equipment was set up as per the test configuration to simulate typical usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane. When the EUT is a floor standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- Support equipment, if needed, was placed as per ANSI C63.4.
- All I/O cables were positioned to simulate typical usage as per ANSI C63.4.
- The EUT received AC power source from the outlet socket under the turntable. All support equipment power received from another socket under the turntable.
- The antenna was placed at 3 or 10 meter away from the EUT as stated in ANSI C63.4. The antenna connected to the Spectrum Analyzer via a cable and at times a pre-amplifier would be used.
- The Analyzer / Receiver quickly scanned from 30MHz to 40GHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- The test mode(s) described in Item 3.1 were scanned during the preliminary test:
- After the preliminary scan, we found the test mode described in Item 3.1 producing the highest emission level.
- The worst configuration of EUT and cable of the above highest emission level were recorded for reference of the final test.

Procedure of Final Test

- EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test.
- The Analyzer / Receiver scanned from 30MHz to 40GHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 or 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- Recording at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only Q.P. reading is presented.
- The test data of the worst-case condition(s) was recorded.

7.4. TEST SETUP



 For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

7.5. DATA SAMPLE:

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (·)	Height (cm)	Remark
XX.XX	16.49	9.86	26.35	30.00	-3.65	116.00	101.00	QP

Frequency (MHz) = Emission frequency in MHz

Reading (dBuV) = Uncorrected Analyzer / Receiver reading Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)

Limit (dBuV/m) = Limit stated in standard

Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)

Q.P. = Quasi-Peak



7.6. TEST RESULTS

CCS Radiated Test OATS 2

Job No.: 71004006 **Ant. Polar.:** Ver.

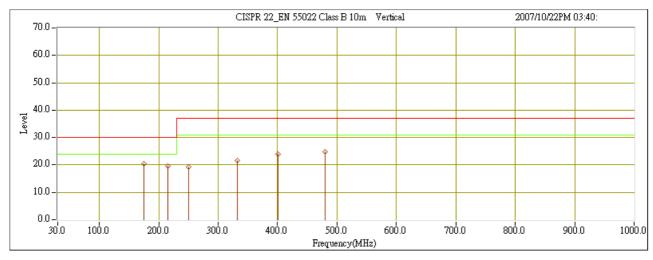
Standard: FCC Class B Tested Distance: 10m

 Test Item:
 Radiated Emission
 Date:
 2007/10/22

 Temp.(°C)/Hum.(%RH):
 25°C /55%RH
 Time:
 PM 03:40

Company: BEHAVIOR TECH COMPUTER CORP. Tested By: Ming Chen

Model: M853UL Mode: 1



No.	Frequency	Reading	Correction	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	175.36	9.40	10.91	20.31	30.00	-9.69	124.00	187.00	QP
2	215.55	6.60	12.90	19.50	30.00	-10.50	118.00	206.00	QP
3	250.18	4.80	14.32	19.12	37.00	-17.88	279.00	215.00	QP
4	332.09	5.00	16.55	21.55	37.00	-15.45	310.00	194.00	QP
5	400.22	5.80	18.16	23.96	37.00	-13.04	115.00	209.00	QP
6	480.71	5.10	19.62	24.72	37.00	-12.28	104.00	188.00	QP



FCC ID: E5XMSM853UL Report No: 71004006-D

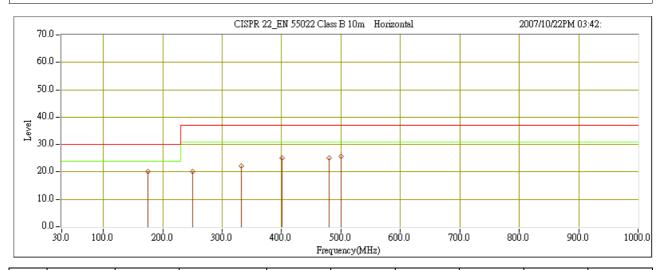
CCS Radiated Test OATS 2

Job No.: 71004006 **Ant. Polar.:** Hor.

Standard: FCC Class B Tested Distance: 10m

Test Item:Radiated EmissionDate:2007/10/22Temp.(°C)/Hum.(%RH):25°C /55%RHTime:PM 03:42Company:BEHAVIOR TECH COMPUTER CORP.Tested By:Ming Chen

Model: M853UL Mode: 1



No.	Frequency	Reading	Correction	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	175.30	9.10	10.91	20.01	30.00	-9.99	121.00	211.00	QP
2	250.61	5.80	14.33	20.13	37.00	-16.87	125.00	204.00	QP
3	332.28	5.50	16.55	22.05	37.00	-14.95	320.00	208.00	QP
4	400.39	6.90	18.17	25.07	37.00	-11.93	298.00	194.00	QP
5	480.50	5.60	19.61	25.21	37.00	-11.79	120.00	213.00	QP
6	500.11	5.50	20.10	25.60	37.00	-11.40	98.00	180.00	QP



FCC ID: E5XMSM853UL Report No: 71004006-D

CCS Radiated Test OATS 2

Job No.: 71004006 **Ant. Polar.:** Ver.

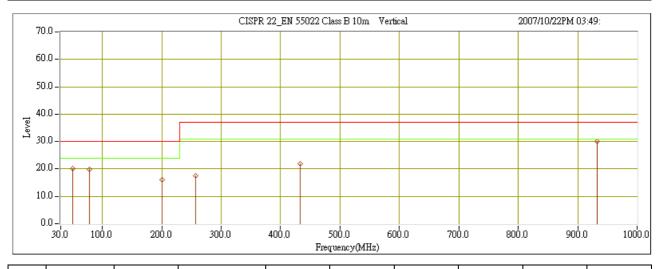
Standard: FCC Class B Tested Distance: 10m

 Test Item:
 Radiated Emission
 Date:
 2007/10/22

 Temp.(°C)/Hum.(%RH):
 25°C /55%RH
 Time:
 PM 03:49

Company: BEHAVIOR TECH COMPUTER CORP. Tested By: Ming Chen

Model: M857UL Mode: 2



No.	Frequency	Reading	Correction	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	49.82	6.50	13.50	20.00	30.00	-10.00	95.00	140.00	QP
2	78.50	10.70	9.01	19.71	30.00	-10.29	116.00	135.00	QP
3	200.33	3.80	12.30	16.10	30.00	-13.90	104.00	203.00	QP
4	257.19	3.10	14.47	17.57	37.00	-19.43	127.00	194.00	QP
5	433.05	3.30	18.62	21.92	37.00	-15.08	109.00	195.00	QP
6	933.45	4.20	25.94	30.14	37.00	-6.86	320.00	207.00	QP



FCC ID: E5XMSM853UL Report No: 71004006-D

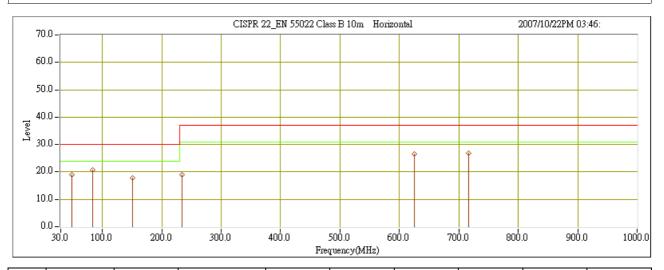
CCS Radiated Test OATS 2

Job No.: 71004006 **Ant. Polar.:** Hor.

Standard: FCC Class B Tested Distance: 10m

Test Item:Radiated EmissionDate:2007/10/22Temp.(°C)/Hum.(%RH):25°C /55%RHTime:PM 03:46Company:BEHAVIOR TECH COMPUTER CORP.Tested By:Ming Chen

Model: M857UL Mode: 2



No.	Frequency	Reading	Correction	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	49.15	5.50	13.54	19.04	30.00	-10.96	118.00	149.00	QP
2	83.35	10.60	10.11	20.71	30.00	-9.29	103.00	135.00	QP
3	150.63	8.10	9.67	17.77	30.00	-12.23	114.00	184.00	QP
4	233.59	5.30	13.63	18.93	37.00	-18.07	98.00	196.00	QP
5	625.39	4.10	22.51	26.61	37.00	-10.39	317.00	180.00	QP
6	716.23	3.70	23.10	26.80	37.00	-10.20	301.00	212.00	QP



FCC ID: E5XMSM853UL Report No: 71004006-D

CCS Radiated Test OATS 2

Job No.: 71004006 **Ant. Polar.**: Ver.

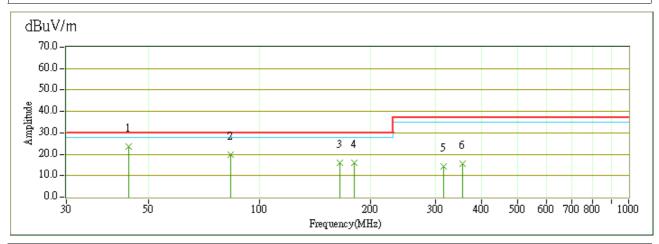
Standard: FCC Class B Tested Distance: 10m

 Test Item:
 Radiated Emission
 Date:
 2007/10/9

 Temp.(°C)/Hum.(%RH):
 26°C/55%RH
 Time:
 PM 08:22

Company: BEHAVIOR TECH COMPUTER CORP. Tested By: Ivan Tsai

Model: M859UL Mode: 3



No.	Frequency	Reading	Correction	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	44.32	11.43	12.23	23.66	30.00	-6.34	309.00	99.00	QP
2	83.53	10.31	9.32	19.63	30.00	-10.37	285.00	125.00	QP
3	165.34	4.21	11.63	15.84	30.00	-14.16	307.00	118.00	QP
4	180.38	4.64	11.47	16.11	30.00	-13.89	120.00	143.00	QP
5	316.14	-3.22	17.43	14.21	37.00	-22.79	322.00	215.00	QP
6	354.89	-3.14	18.88	15.74	37.00	-21.26	294.00	202.00	QP



FCC ID: E5XMSM853UL Report No: 71004006-D

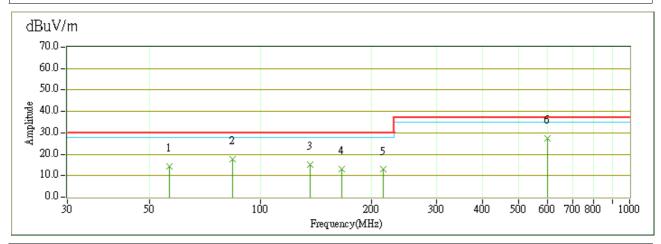
CCS Radiated Test OATS 2

Job No.: 71004006 **Ant. Polar.:** Hor.

Standard: FCC Class B Tested Distance: 10m

Test Item:Radiated EmissionDate:2007/10/9Temp.(°C)/Hum.(%RH):26°C/55%RHTime:PM 08:26Company:BEHAVIOR TECH COMPUTER CORP.Tested By:Ivan Tsai

Model: M859UL Mode: 3



No.	Frequency	Reading	Correction	Result	Limit	Margin	Degree	Height	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(°)	(cm)	
1	56.66	6.74	7.50	14.24	30.00	-15.76	298.00	139.00	QP
2	83.84	8.21	9.38	17.59	30.00	-12.41	314.00	120.00	QP
3	136.68	1.72	13.60	15.32	30.00	-14.68	295.00	144.00	QP
4	166.13	1.59	11.62	13.21	30.00	-16.79	337.00	207.00	QP
5	214.61	1.38	11.49	12.87	30.00	-17.13	303.00	201.00	QP
6	599.89	2.97	24.44	27.41	37.00	-9.59	317.00	195.00	QP