Microsoft Corporation

Zune (80GB) MN: 1126
Zune AC Adapter (Delta)
MN: 1128

October 22, 2007

Report No. MCSO1308

Report Prepared By

NORTHWEST EMC

www.nwemc.com
1-888-EMI-CERT

EMC Test Report

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Issue Date: October 22, 2007
Microsoft Corporation
Model: Zune (80GB) MN: 1126

Emissions			
Test Description	**Specification**	**Test Method**	**Pass/Fail**
Radiated Emissions	FCC 15.109(g) (CISPR 22:1997):2006	ANSI C63.4:2003	**Pass**
Radiated Emissions High Frequency	FCC 15.107:2006	ANSI C63.4:2003	**Pass**
Conducted Emissions	FCC 15.109:2006	ANSI C63.4:2003	**Pass**

Approved By:

Ethan Schoonover, Sultan Lab Manager

NVLAP

NVLAP Lab Code: 200629-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision Number	Description	Date	Page Number
00	None		

Accreditations and Authorizations

FCC: Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP: Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0

Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS 212, Issue 1 (Provisional) and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements.

CAB: Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

TÜV Product Service: Included in TUV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TUV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TUV's current Listing of CARAT Laboratories, available from TUV. A certificate was issued to represent that this laboratory continues to meet TUV's CARAT Program requirements. Certificate No. USA0604C.

TÜV Rheinland: Authorized to carryout EMC tests by order and under supervision of TÜV Rheinland. This authorization is based on "Conditions for EMC-Subcontractors" of November 1992.

NEMKO: Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).

Australia/New Zealand: The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).

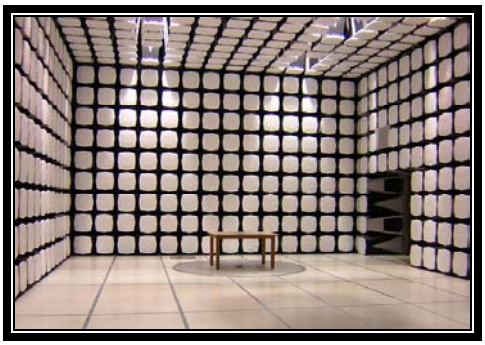
VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294).*

BSMI: Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement. License No.SL2-IN-E-1017.

GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

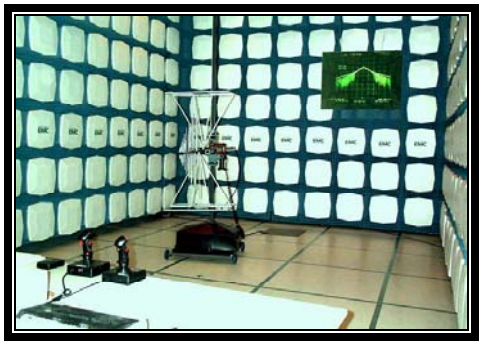
SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/scope.asp



California – Orange County Facility
Labs OC01 – OC13

41 Tesla Ave. Irvine, CA 92618
(888) 364-2378 Fax: (503) 844-3826



Oregon – Evergreen Facility
Labs EV01 – EV11

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124
(503) 844-4066 Fax: (503) 844-3826

Washington – Sultan Facility
Labs SU01 – SU07

14128 339th Ave. SE Sultan, WA 98294
(888) 364-2378

Party Requesting the Test

Company Name:	Microsoft Corporation
Address:	One Microsoft Way
City, State, Zip:	Redmond, WA 98052-6399
Test Requested By:	Kitty Tam
Model:	Zune (80GB) MN: 1126
First Date of Test:	October 11, 2007
Last Date of Test:	October 18, 2007
Receipt Date of Samples:	October 11, 2007
Equipment Design Stage:	Development
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

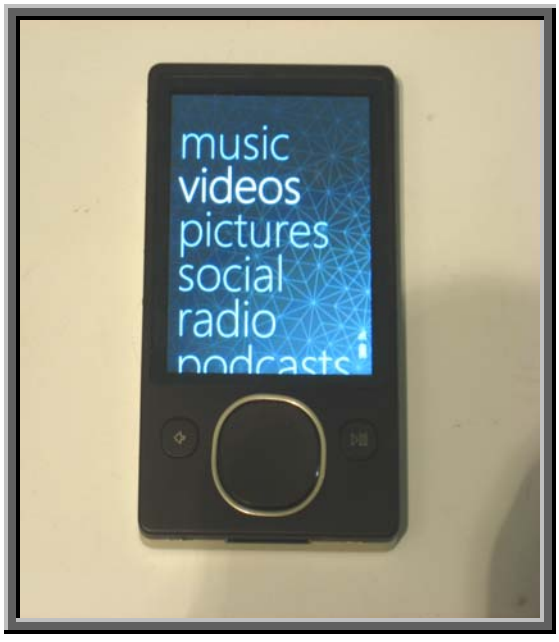
Functional Description of the EUT (Equipment Under Test):

Portable Media Device. Unit is DV2B Config 3 build with hand built EMC modifications per EMC document V.1.6.6 with Samsung LCD and Toshiba HDD. Unit is installed with test FW build 985 Dorado. The difference between EMC document V.1.6.6 and the noted V.1.6.3 in the data sheets is only part number reference change. EUT is tested with all 1st party Microsoft accessories as a system for all applicable worst case user configurations.

Testing Objective:

These tests were selected to satisfy the EMC requirements for FCC.

EUT Photo



CONFIGURATION 1 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200062739
Power Adapter	Delta PS	Model: 1128 (DPSN-8CB A Rev S3)	00837702237
DV3 Build Dock	Microsoft Corporation	1127	None
DV Build Premium Earbuds	Microsoft Corporation	None	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
TV Monitor	LG	RN-32F210H	208KC00338
TV	Sharp	14A1-A	C203525444

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AV Cable	Yes	1.4m	No	DV3 Build Dock	TV Monitor
USB	Yes	1.4m	No	DV3 Build Dock	Power Adaptor
Premium Earbuds	no	2m	no	Zune	Earbuds
Power Extension	No	0.8m	No	AC Mains	Power Adapter
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200062739
DV3 Build Dock	Microsoft Corporation	1127	None
Zune (80GB)	Microsoft Corporation	1126	1200023740
DV3 Build Dock	Microsoft Corporation	1127	S7300094
DV Build Premium Earbuds	Microsoft Corporation	None	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop PC	IBM	266843U	L3A3877
TV Monitor	LG	RN-32F210H	208KC00338
Sony TV	Sony	KV-21FX30E	1062225
Laptop Power Supply	IBM	92P1020	11S92P1020109RM67H2S4
TV	Sharp	14A1-A	C203525444

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AV Cable	Yes	1.4m	No	DV3 Build Dock	TV Monitor
USB	Yes	1.4m	No	DV3 Build Dock	Power Adaptor
Premium Earbuds	no	2m	no	Zune	Earbuds
AC Leads	No	1.0m	No	AC Mains	Laptop Power Supply
DC Leads	No	1.8m	Yes	Laptop Power Supply	Laptop PC
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 3 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200023740
DV3 Build Dock	Microsoft Corporation	1127	S7300094
Delta PSU Adapter	Microsoft Corporation	Model: 1128 DPSN-8CB A Rev S3	00837702227

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Speakers PS	N/A	PPI-1235-UL	N/A
Speakers	Altec Lansing Multimedia	ACS41	70889

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
USB	Yes	1.4m	No	DV3 Build Dock	Power Adaptor
AX Cable	no	no	no	DV3 Build Dock	Speakers
Speakers PS	no	2m	no	AC Power	Speakers
Speaker Cable	no	2m	no	Speaker L	Speaker R
Extension Cord	no	3m	no	AC Power	Delta PSU Adapter
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 4 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200023740
DV3 Build Dock	Microsoft Corporation	1127	S7300094
Delta PSU Adapter	Microsoft Corporation	Model: 1128 DPSN-8CB A Rev S3	00837702227
DV Build Premium Earbuds	Microsoft Corporation	None	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Sony TV	Sony	KV-21FX30E	1062225

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AV Cable	Yes	1.4m	No	DV3 Build Dock	TV Monitor
USB	Yes	1.4m	No	DV3 Build Dock	Power Adaptor
Premium Earbuds	no	2m	no	Zune	Earbuds
Extension Cord	no	3m	no	AC Power	Delta PSU Adapter
TV Power Cable	no	2.5	no	AC Power	Sony TV
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 5 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200023740
Delta PSU Adapter	Microsoft Corporation	Model: 1128 DPSN-8CB A Rev S3	00837702227
DV Build Premium Earbuds	Microsoft Corporation	None	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Sony TV	Sony	KV-21FX30E	1062225

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AV Cable	Yes	1.4m	No	DV3 Build Dock	TV Monitor
Premium Earbuds	no	2m	no	Zune	Earbuds
Extension Cord	no	3m	no	AC Power	Delta PSU Adapter
DV Solution 2 sync Cable	no	1.8m	no	Delta PS	Zune
TV Power Cable	no	2.5	no	AC Power	Sony TV
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 6 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200023740
Delta PSU Adapter	Microsoft Corporation	Model: 1128 DPSN-8CB A Rev S3	00837702227
DV Build Premium Earbuds	Microsoft Corporation	None	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Premium Earbuds	no	2m	no	Zune	Earbuds
Extension Cord	no	3m	no	AC Power	Delta PSU Adapter
DV Solution 2 sync Cable	no	1.8m	no	Delta PS	Zune
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 7 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200023740
DV3 Build Dock	Microsoft Corporation	N/A	S7300094
Delta PSU Adapter	Microsoft Corporation	Model: 1128 DPSN-8CB A Rev S3	00837702227
IR Remote	Microsoft Corporation	1130	N/A
DV Build Premium Earbuds	Microsoft Corporation	None	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
TV Monitor	LG	RN-32F210H	208KC00338

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AV Cable	Yes	1.4m	No	DV3 Build Dock	TV Monitor
USB	Yes	1.4m	No	DV3 Build Dock	Power Adaptor
Premium Earbuds	no	2m	no	Zune	Earbuds
Component Cable	yes	3m	no	DV3 Dock	TV
Power Extension	No	0.8m	No	AC Mains	Power Adapter
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 8 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200062739
Zune (80GB)	Microsoft Corporation	1126	1200023740

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop PC	IBM	266843U	L3A3877
TV Monitor	LG	RN-32F210H	208KC00338
Sony TV	Sony	KV-21FX30E	1062225
Laptop Power Supply	IBM	92P1020	11S92P1020109RM67H2S4

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
AV Cable	Yes	1.4m	No	DV3 Build Dock	TV Monitor
Extension Cord	no	3m	no	AC Power	Delta PSU Adapter
DV Solution 2 sync Cable	no	1.8m	no	Delta PSU Adapter	Zune
AC Leads	No	1.0m	No	AC Mains	Laptop Power Supply
DC Leads	No	1.8m	Yes	Laptop Power Supply	Laptop PC
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 9 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200062739
Power Adapter	Delta PS	DPSN-8CB A Rev S3	00837702237
Zune (80GB)	Microsoft Corporation	1126	1200023740
Delta PSU Adapter	Microsoft Corporation	Model: 1128 DPSN-8CB A Rev S3	00837702227
DV Build Premium Earbuds	Microsoft Corporation	None	None

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Premium Earbuds	no	2m	no	Zune	Earbuds
DV Solution 2 sync Cable	no	1.8m	no	Delta PSU Adapter	Zune
Power Extension	No	0.8m	No	AC Mains	Power Adapter
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 10 MCSO1308

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Zune (80GB)	Microsoft Corporation	1126	1200062739
Zune (80GB)	Microsoft Corporation	1126	1200023740
DV Build Premium Earbuds	Microsoft Corporation	None	None

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Laptop PC	IBM	266843U	L3A3877
Laptop Power Supply	IBM	92P1020	11S92P1020109RM67H2S4

Cables					
Cable Type	**Shield**	**Length (m)**	**Ferrite**	**Connection 1**	**Connection 2**
Premium Earbuds	no	2m	no	Zune	Earbuds
DV Solution 2 sync Cable	no	1.8m	no	Delta PSU Adapter	Zune
AC Leads	No	1.0m	No	AC Mains	Laptop Power Supply
DC Leads	No	1.8m	Yes	Laptop Power Supply	Laptop PC
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	10/11/2007	Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	10/17/2007	Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	10/17/2007	Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
4	10/18/2007	Conducted Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
5	10/18/2007	Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION
Sync to Laptop
AV Playback

MODE USED FOR FINAL DATA
Sync to Laptop
AV Playback

POWER SETTINGS INVESTIGATED
5VDC via USB
120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA
5VDC via USB
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	30MHz	Stop Frequency	1000MHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
SU02 cables a,b,c			SUK	2/8/2007	13
Pre-Amplifier	Miteq	AM-1402	AOT	1/18/2007	13
Antenna, Log Periodic	EMCO	3146	ALE	2/1/2007	13
Antenna, Bicon	EMCO	3104C	ABF	1/28/2007	13
Quasi-Peak Adapter	Hewlett Packard	85650A	AQG	12/7/2006	13
Spectrum Analyzer Display	Hewlett Packard	85662A	AAED	12/7/2006	13
Spectrum Analyzer	Hewlett-Packard	8568B	AAE	12/7/2006	13

MEASUREMENT BANDWIDTHS

	Frequency Range	Peak Data	Quasi-Peak Data	Average Data
	(MHz)	(kHz)	(kHz)	(kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062739			Date:	10/17/07
Customer:	Microsoft Corporation			Temperature:	19° C
Attendees:	James Wooten			Humidity:	48%
Project:	None			Barometric Pres.:	1011.70mb
Tested by:	Dan Haas	Power:	120VAC/60Hz	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109(g) (CISPR 22:1997):2006 Class B:	ANSI C63.4:2003:

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	

COMMENTS

Build 985. Version 1.6.3 Fix. Delta PS mn: DPSN-8CB A Rev. S3 sn: 00837702237, DV3 Wrap sn: S73700094. AV cable, Premium Earbuds. DV2B Config 3 Draco w/ Samsung LCD and Toshiba HDD. Config. 5A-D-D.

EUT OPERATING MODES

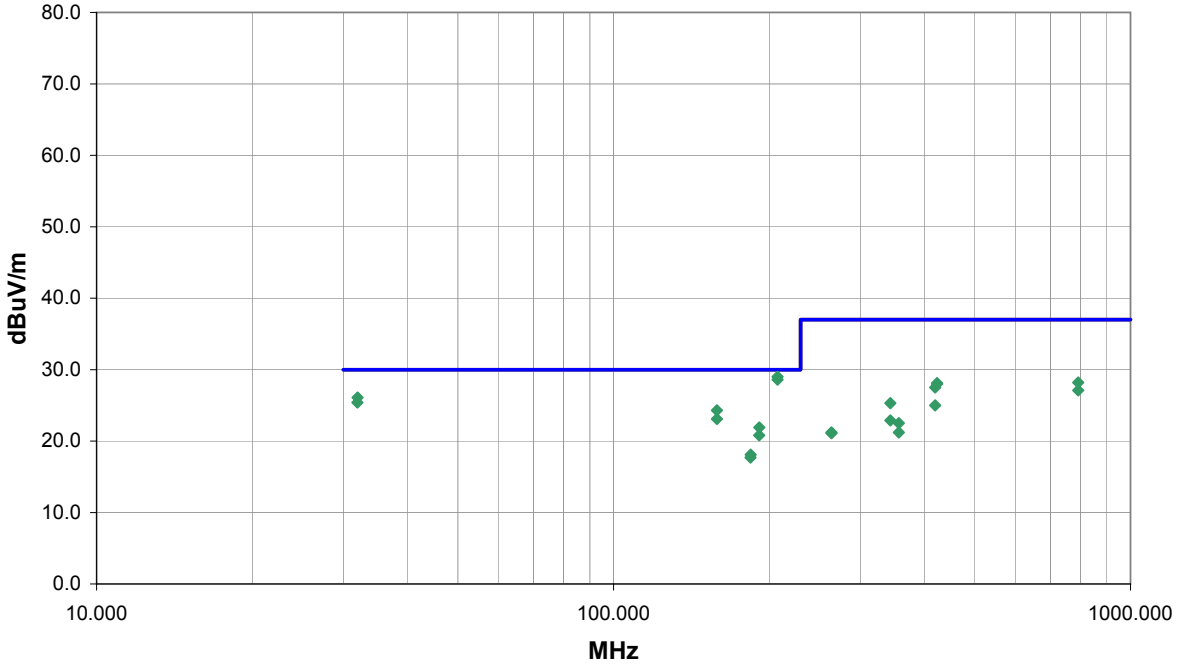
AV Playback

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	2
Configuration #	1
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
207.641	35.4	-6.4	102.0	1.0	10.0	0.0	V-LPA	QP	0.0	29.0	30.0	-1.0
207.646	35.0	-6.4	273.0	3.8	10.0	0.0	H-LPA	QP	0.0	28.6	30.0	-1.4
31.966	33.0	-6.9	295.0	4.0	10.0	0.0	V-Bicon	QP	0.0	26.1	30.0	-3.9
31.963	32.3	-6.9	281.0	3.3	10.0	0.0	H-Bicon	QP	0.0	25.4	30.0	-4.6
158.428	26.9	-2.6	37.0	2.5	10.0	0.0	V-Bicon	QP	0.0	24.3	30.0	-5.7
158.426	25.7	-2.6	119.0	4.0	10.0	0.0	H-Bicon	QP	0.0	23.1	30.0	-6.9
191.369	22.7	-0.8	0.0	1.0	10.0	0.0	V-Bicon	QP	0.0	21.9	30.0	-8.1
792.022	22.0	6.2	233.0	1.2	10.0	0.0	H-LPA	QP	0.0	28.2	37.0	-8.8
422.391	28.6	-0.5	227.0	1.0	10.0	0.0	V-LPA	QP	0.0	28.1	37.0	-8.9
422.392	28.5	-0.5	113.0	2.1	10.0	0.0	H-LPA	QP	0.0	28.0	37.0	-9.0
191.306	21.6	-0.8	0.0	4.0	10.0	0.0	H-Bicon	QP	0.0	20.8	30.0	-9.2
418.841	28.1	-0.6	120.0	2.4	10.0	0.0	H-LPA	QP	0.0	27.5	37.0	-9.5
792.025	20.9	6.2	200.0	2.0	10.0	0.0	V-LPA	QP	0.0	27.1	37.0	-9.9
343.227	27.2	-1.9	92.0	2.7	10.0	0.0	H-LPA	QP	0.0	25.3	37.0	-11.7
184.210	19.3	-1.2	199.0	1.0	10.0	0.0	V-Bicon	QP	0.0	18.1	30.0	-11.9
418.844	25.6	-0.6	233.0	1.0	10.0	0.0	V-LPA	QP	0.0	25.0	37.0	-12.0
184.076	18.9	-1.2	37.0	3.6	10.0	0.0	H-Bicon	QP	0.0	17.7	30.0	-12.3
343.228	24.8	-1.9	76.0	1.3	10.0	0.0	V-LPA	QP	0.0	22.9	37.0	-14.1
356.396	24.2	-1.7	276.0	1.0	10.0	0.0	V-LPA	QP	0.0	22.5	37.0	-14.5
264.026	26.2	-5.0	208.0	1.0	10.0	0.0	V-LPA	QP	0.0	21.2	37.0	-15.8
356.401	22.9	-1.7	108.0	2.5	10.0	0.0	H-LPA	QP	0.0	21.2	37.0	-15.8

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
264.025	26.1	-5.0	359.0	4.0	10.0	0.0	H-LPA	QP	0.0	21.1	37.0	-15.9

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062739			Date:	10/17/07
Customer:	Microsoft Corporation			Temperature:	19° C
Attendees:	James Wooten			Humidity:	49%
Project:	None			Barometric Pres.:	1011.70mb
Tested by:	Dan Haas	Power:	5VDC via USB	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109(g) (CISPR 22:1997):2006 Class B:	ANSI C63.4:2003:

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	

COMMENTS

Build 985. Version 1.6.3 Fix. Premium earbuds, DV3 Wrap sn: S73700094. AV cable. DV2B Config 3 Draco w/ Samsung LCD and Toshiba HDD. Config. 4A.

EUT OPERATING MODES

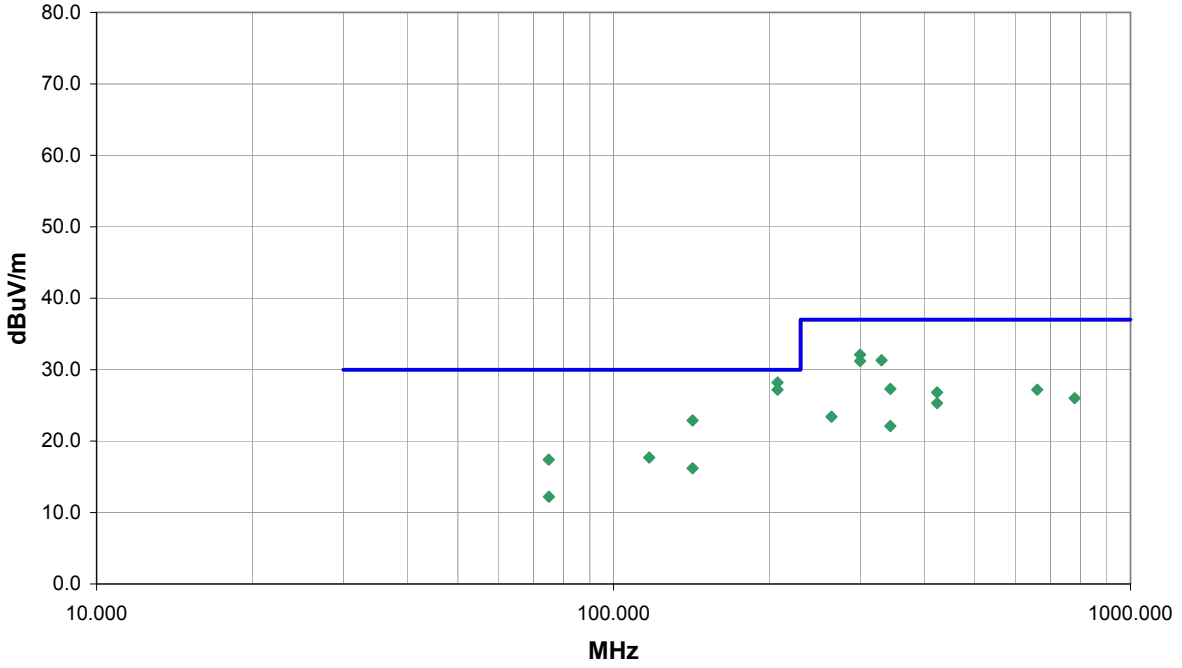
Sync to Laptop

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3
Configuration #	2
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
207.638	34.6	-6.4	246.0	4.0	10.0	0.0	H-LPA	QP	0.0	28.2	30.0	-1.8
207.646	33.6	-6.4	97.0	1.1	10.0	0.0	V-LPA	QP	0.0	27.2	30.0	-2.8
299.979	35.0	-2.9	317.0	3.3	10.0	0.0	V-LPA	QP	0.0	32.1	37.0	-4.9
330.009	33.5	-2.2	322.0	2.7	10.0	0.0	H-LPA	QP	0.0	31.3	37.0	-5.7
299.958	34.1	-2.9	312.0	1.0	10.0	0.0	V-LPA	QP	0.0	31.2	37.0	-5.8
142.199	28.6	-5.7	0.0	4.0	10.0	0.0	V-Bicon	QP	0.0	22.9	30.0	-7.1
343.229	29.2	-1.9	162.0	2.5	10.0	0.0	H-LPA	QP	0.0	27.3	37.0	-9.7
660.022	22.9	4.3	275.0	1.5	10.0	0.0	H-LPA	QP	0.0	27.2	37.0	-9.8
422.390	27.3	-0.5	215.0	1.0	10.0	0.0	V-LPA	QP	0.0	26.8	37.0	-10.2
780.025	19.9	6.1	114.0	1.9	10.0	0.0	H-LPA	QP	0.0	26.0	37.0	-11.0
422.390	25.8	-0.5	235.0	2.2	10.0	0.0	H-LPA	QP	0.0	25.3	37.0	-11.7
117.220	21.8	-4.1	0.0	4.0	10.0	0.0	H-Bicon	QP	0.0	17.7	30.0	-12.3
74.915	28.9	-11.5	360.0	1.9	10.0	0.0	V-Bicon	QP	0.0	17.4	30.0	-12.6
264.018	28.4	-5.0	283.0	4.0	10.0	0.0	H-LPA	QP	0.0	23.4	37.0	-13.6
142.205	21.9	-5.7	360.0	2.1	10.0	0.0	H-Bicon	QP	0.0	16.2	30.0	-13.8
343.220	24.0	-1.9	78.0	1.7	10.0	0.0	H-LPA	QP	0.0	22.1	37.0	-14.9
75.004	23.6	-11.4	137.0	2.4	10.0	0.0	H-Bicon	QP	0.0	12.2	30.0	-17.8

RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION
Sync to Laptop
AV Playback

MODE USED FOR FINAL DATA
AV Playback
Sync to Laptop

POWER SETTINGS INVESTIGATED
5V DC
120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA
5V DC
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	30MHz	Stop Frequency	1GHz

SAMPLE CALCULATIONS
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Hewlett-Packard	8568B	AAE	12/7/2006	13
Quasi-Peak Adapter	Hewlett Packard	85650A	AQG	12/7/2006	13
Pre-Amplifier	Miteq	AM-1402	AOT	1/18/2007	13
SU02 cables a,b,c			SUK	2/8/2007	13
Antenna, Log Periodic	EMCO	3146	ALE	2/1/2007	13
Antenna, Bicon	EMCO	3104C	ABF	1/28/2007	13

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0
Measurements were made using the bandwidths and detectors specified. No video filter was used.				

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062739			Date:	10/18/07
Customer:	Microsoft Corporation			Temperature:	19 C
Attendees:	James Wooten			Humidity:	44%
Project:	None			Barometric Pres.:	29.56
Tested by:	Dan Haas	Power:	120VAC/60Hz	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109(g) (CISPR 22:1997):2006 Class B:	ANSI C63.4:2003:

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	

COMMENTS

Build 985. Version 1.6.3 Fix. Premium earbuds, Delta PS mn: DPSN-8CB A Rev. S3 sn: 00837702237, DV3 Wrap sn: S73700094, AV cable + Component cable to TV, IR remote. DV2B Config 3 Draco w/ Samsung LCD and Toshiba HDD. Config. 5B-D-1

EUT OPERATING MODES

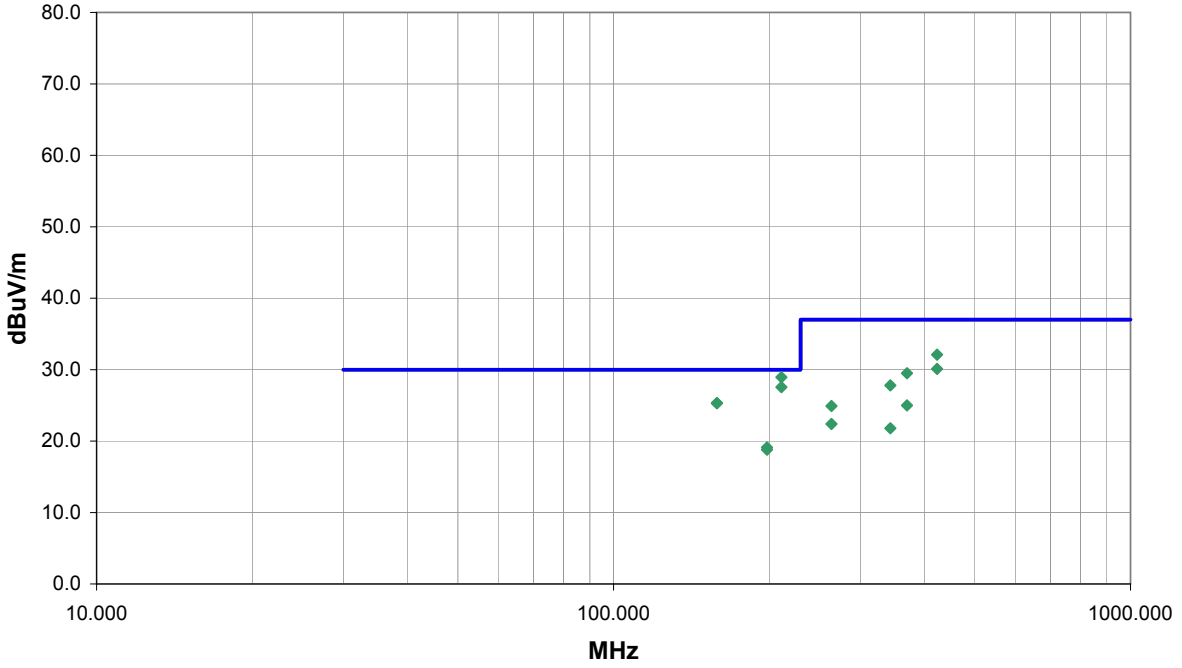
AV Playback

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	5
Configuration #	7
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
211.200	45.8	-6.4	19.0	1.4	3.0	0.0	H-LPA	PK	-10.5	28.9	30.0	-1.1
211.200	44.4	-6.4	3.0	1.0	3.0	0.0	V-LPA	PK	-10.5	27.5	30.0	-2.5
158.422	27.9	-2.6	85.0	4.0	10.0	0.0	H-Bicon	QP	0.0	25.3	30.0	-4.7
158.418	27.9	-2.6	341.0	1.4	10.0	0.0	V-Bicon	QP	0.0	25.3	30.0	-4.7
422.426	32.6	-0.5	135.0	1.9	10.0	0.0	H-LPA	QP	0.0	32.1	37.0	-4.9
422.429	30.6	-0.5	139.0	1.0	10.0	0.0	V-LPA	QP	0.0	30.1	37.0	-6.9
369.630	31.0	-1.5	280.0	1.0	10.0	0.0	V-LPA	QP	0.0	29.5	37.0	-7.5
343.193	29.7	-1.9	261.0	2.7	10.0	0.0	H-LPA	QP	0.0	27.8	37.0	-9.2
198.034	19.5	-0.4	341.0	1.6	10.0	0.0	H-Bicon	QP	0.0	19.1	30.0	-10.9
198.022	19.2	-0.4	0.0	4.0	10.0	0.0	V-Bicon	QP	0.0	18.8	30.0	-11.2
369.621	26.5	-1.5	352.0	2.2	10.0	0.0	H-LPA	QP	0.0	25.0	37.0	-12.0
264.029	29.9	-5.0	226.0	1.0	10.0	0.0	V-LPA	QP	0.0	24.9	37.0	-12.1
264.027	27.4	-5.0	249.0	3.5	10.0	0.0	H-LPA	QP	0.0	22.4	37.0	-14.6
343.226	23.7	-1.9	16.0	2.3	10.0	0.0	V-LPA	QP	0.0	21.8	37.0	-15.2

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062739			Date:	10/18/07
Customer:	Microsoft Corporation			Temperature:	20° C
Attendees:	James Wooten			Humidity:	45%
Project:	None			Barometric Pres.:	29.34
Tested by:	Dan Haas	Power:	5V DC	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109(g) (CISPR 22:1997):2006 Class B:	ANSI C63.4:2003:

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	

COMMENTS

Build 985. Version 1.6.3 Fix. AV cable and Solution 2 sync cable. DV2B Config 3 Draco w/ Samsung LCD and Toshiba HDD. Config. 3B.

EUT OPERATING MODES

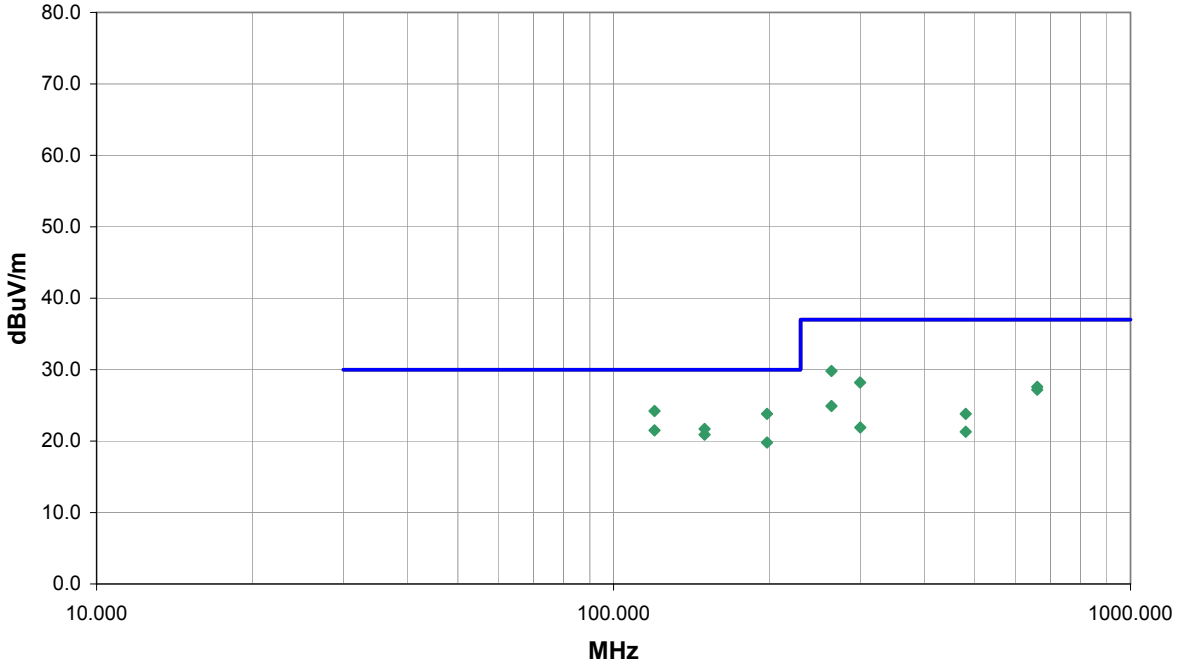
Sync to Laptop

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	6
Configuration #	8
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
120.029	28.9	-4.7	90.0	1.0	10.0	0.0	V-Bicon	QP	0.0	24.2	30.0	-5.8
198.009	24.2	-0.4	28.0	2.5	10.0	0.0	V-Bicon	QP	0.0	23.8	30.0	-6.2
264.024	34.8	-5.0	41.0	1.0	10.0	0.0	V-LPA	QP	0.0	29.8	37.0	-7.2
149.972	26.7	-5.0	350.0	2.5	10.0	0.0	V-Bicon	QP	0.0	21.7	30.0	-8.3
120.020	26.2	-4.7	17.0	4.0	10.0	0.0	H-Bicon	QP	0.0	21.5	30.0	-8.5
299.961	31.1	-2.9	313.0	1.0	10.0	0.0	V-LPA	QP	0.0	28.2	37.0	-8.8
149.993	25.9	-5.0	173.0	3.3	10.0	0.0	H-Bicon	QP	0.0	20.9	30.0	-9.1
659.989	23.3	4.3	155.0	1.3	10.0	0.0	H-LPA	QP	0.0	27.6	37.0	-9.4
660.028	22.9	4.3	264.0	2.5	10.0	0.0	V-LPA	QP	0.0	27.2	37.0	-9.8
198.004	20.2	-0.4	230.0	3.8	10.0	0.0	H-Bicon	QP	0.0	19.8	30.0	-10.2
264.026	29.9	-5.0	232.0	4.0	10.0	0.0	H-LPA	QP	0.0	24.9	37.0	-12.1
480.034	23.0	0.8	252.0	4.0	10.0	0.0	V-LPA	QP	0.0	23.8	37.0	-13.2
299.990	24.8	-2.9	243.0	2.9	10.0	0.0	H-LPA	QP	0.0	21.9	37.0	-15.1
480.004	20.5	0.8	280.0	2.1	10.0	0.0	H-LPA	QP	0.0	21.3	37.0	-15.7

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126	Work Order:	MCSO1308
Serial Number:	1200062739	Date:	10/18/07
Customer:	Microsoft Corporation	Temperature:	19 C
Attendees:	James Wooten	Humidity:	47%
Project:	None	Barometric Pres.:	29.59
Tested by:	Kevin Cameron	Power: 5V DC	Job Site: SU02

TEST SPECIFICATIONS | **Test Method**

FCC 15.109(g) (CISPR 22:1997):2006 Class B: | ANSI C63.4:2003:

TEST PARAMETERS

Antenna Height(s) (m)	1 - 4	Test Distance (m)	10

COMMENTS

Build 985. Version 1.6.3 Fix. Solution 2 sync cable. Premium Earbuds. DV2B Config 3 Draco w/ Samsung LCD and Toshiba HDD. Config. 1B-1.

EUT OPERATING MODES

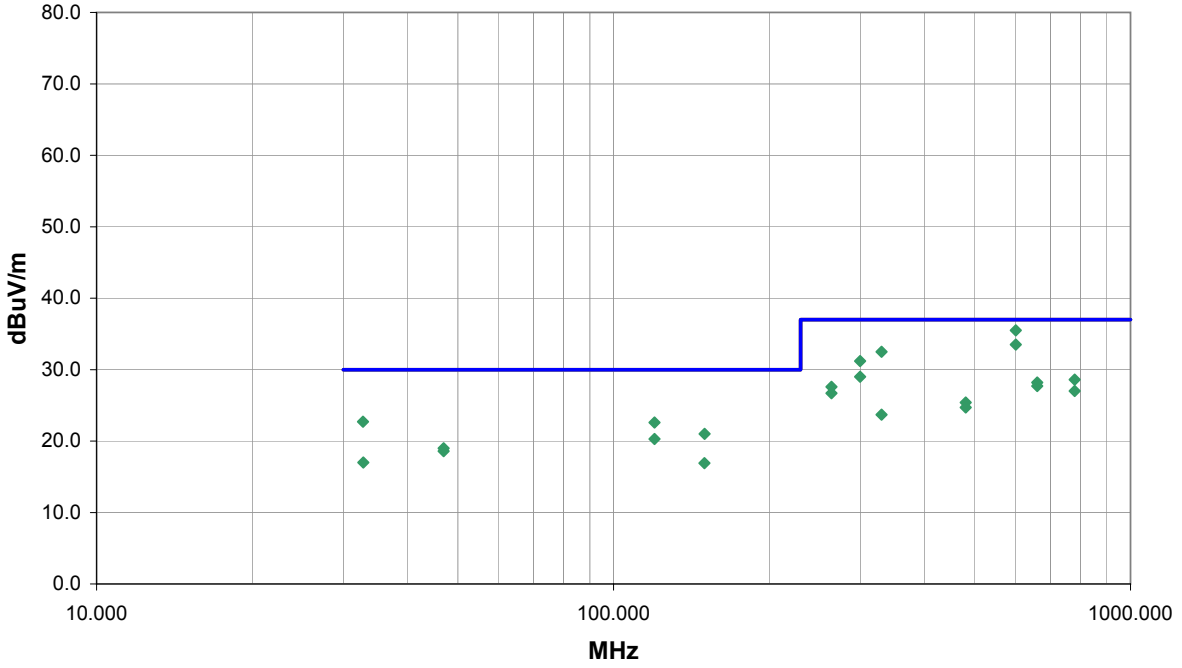
Sync to Laptop

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	8
Configuration #	10
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
599.997	32.4	3.1	57.0	1.7	10.0	0.0	H-LPA	QP	0.0	35.5	37.0	-1.5
599.997	30.4	3.1	155.0	3.1	10.0	0.0	V-LPA	QP	0.0	33.5	37.0	-3.5
330.029	34.7	-2.2	3.0	3.0	10.0	0.0	H-LPA	QP	0.0	32.5	37.0	-4.5
299.957	34.1	-2.9	315.0	1.0	10.0	0.0	V-LPA	QP	0.0	31.2	37.0	-5.8
32.762	29.7	-7.0	134.0	3.1	10.0	0.0	H-Bicon	QP	0.0	22.7	30.0	-7.3
120.000	27.3	-4.7	146.0	2.1	10.0	0.0	V-Bicon	QP	0.0	22.6	30.0	-7.4
299.928	31.9	-2.9	326.0	2.0	10.0	0.0	H-LPA	QP	0.0	29.0	37.0	-8.0
779.984	22.5	6.1	208.0	1.2	10.0	0.0	H-LPA	QP	0.0	28.6	37.0	-8.4
659.988	23.9	4.3	178.0	2.6	10.0	0.0	V-LPA	QP	0.0	28.2	37.0	-8.8
150.015	26.0	-5.0	117.0	1.0	10.0	0.0	V-Bicon	QP	0.0	21.0	30.0	-9.0
659.991	23.4	4.3	130.0	1.9	10.0	0.0	H-LPA	QP	0.0	27.7	37.0	-9.3
263.999	32.6	-5.0	287.0	3.6	10.0	0.0	H-LPA	QP	0.0	27.6	37.0	-9.4
120.000	25.0	-4.7	226.0	3.7	10.0	0.0	H-Bicon	QP	0.0	20.3	30.0	-9.7
779.996	20.9	6.1	243.0	3.7	10.0	0.0	V-LPA	QP	0.0	27.0	37.0	-10.0
263.991	31.7	-5.0	209.0	1.0	10.0	0.0	V-LPA	QP	0.0	26.7	37.0	-10.3
46.918	26.7	-7.7	139.0	1.0	10.0	0.0	H-Bicon	QP	0.0	19.0	30.0	-11.0
46.918	26.3	-7.7	219.0	1.0	10.0	0.0	V-Bicon	QP	0.0	18.6	30.0	-11.4
479.980	24.6	0.8	230.0	2.3	10.0	0.0	H-LPA	QP	0.0	25.4	37.0	-11.6
479.978	23.9	0.8	211.0	3.6	10.0	0.0	V-LPA	QP	0.0	24.7	37.0	-12.3
32.808	24.0	-7.0	99.0	1.0	10.0	0.0	V-Bicon	QP	0.0	17.0	30.0	-13.0
149.902	21.9	-5.0	123.0	4.0	10.0	0.0	H-Bicon	QP	0.0	16.9	30.0	-13.1

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
330.025	25.9	-2.2	173.0	1.0	10.0	0.0	V-LPA	QP	0.0	23.7	37.0	-13.3

RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

AV Playback

MODE USED FOR FINAL DATA

AV Playback

POWER SETTINGS INVESTIGATED

120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA

120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	30MHz	Stop Frequency	1000MHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Quasi-Peak Adapter	Hewlett Packard	85650A	AQG	12/7/2006	13
Spectrum Analyzer	Hewlett-Packard	8568B	AAE	12/7/2006	13
Pre-Amplifier	Miteq	AM-1402	AOT	1/18/2007	13
SU02 cables a,b,c			SUK	2/8/2007	13
Antenna, Bicon	EMCO	3104C	ABF	1/28/2007	13
Antenna, Log Periodic	EMCO	3146	ALE	2/1/2007	13

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0
Measurements were made using the bandwidths and detectors specified. No video filter was used.				

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1307
Serial Number:	1200062739			Date:	10/11/07
Customer:	Microsoft Corporation			Temperature:	16 C
Attendees:	James Wooten			Humidity:	64%
Project:	None			Barometric Pres.:	30.01
Tested by:	Travis Rychener	Power:	120VAC/60Hz	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109(g) (CISPR 22:1997):2006 Class B:	ANSI C63.4:2003:

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	10

COMMENTS

Build 985. Version 1.6.3 Fix. Premium Earbuds. Solution 2 Sync Cable. DPSN-8CB A Rev. S3 PS sn: 00837702237. Config. 2B-D.

EUT OPERATING MODES

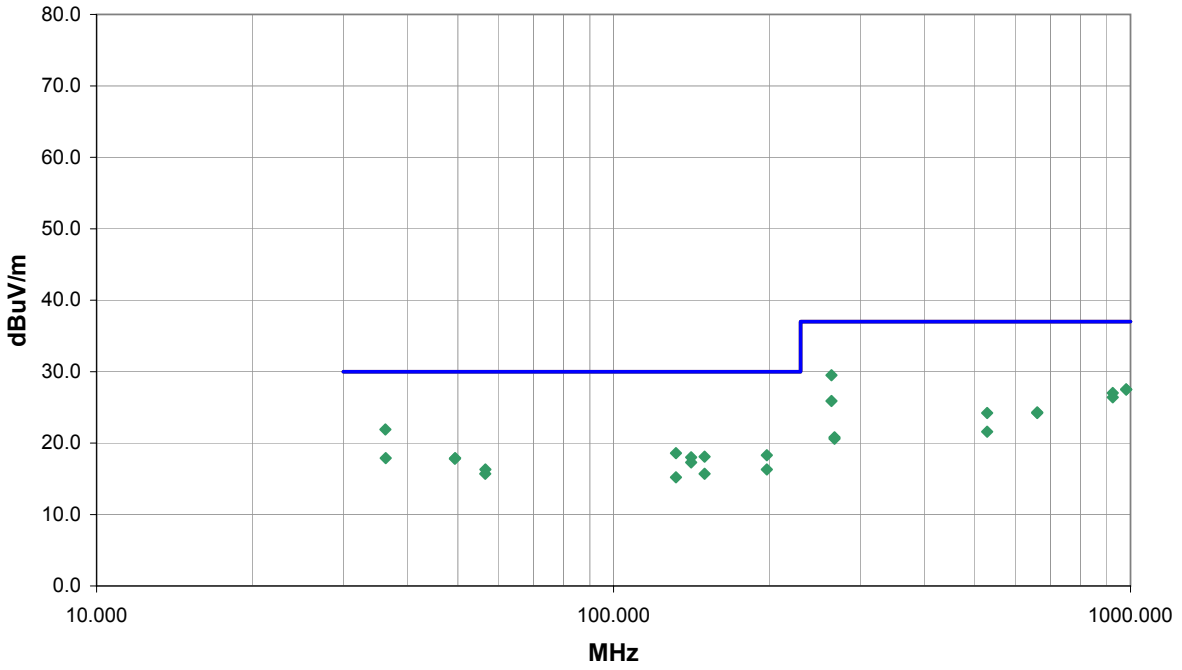
AV Playback

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3
Configuration #	9
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
264.001	34.5	-5.0	100.0	3.3	10.0	0.0	H-LPA	QP	0.0	29.5	37.0	-7.5
36.185	29.2	-7.3	260.0	1.0	10.0	0.0	V-Bicon	QP	0.0	21.9	30.0	-8.1
980.956	17.9	9.6	308.0	2.6	10.0	0.0	V-LPA	QP	0.0	27.5	37.0	-9.5
980.956	17.9	9.6	0.0	4.0	10.0	0.0	H-LPA	QP	0.0	27.5	37.0	-9.5
924.001	18.3	8.7	198.0	2.8	10.0	0.0	H-LPA	QP	0.0	27.0	37.0	-10.0
924.001	17.7	8.7	289.0	1.0	10.0	0.0	V-LPA	QP	0.0	26.4	37.0	-10.6
264.000	30.9	-5.0	310.0	1.0	10.0	0.0	V-LPA	QP	0.0	25.9	37.0	-11.1
132.004	23.9	-5.3	134.0	4.0	10.0	0.0	H-Bicon	QP	0.0	18.6	30.0	-11.4
197.994	18.7	-0.4	360.0	1.0	10.0	0.0	V-Bicon	QP	0.0	18.3	30.0	-11.7
149.961	23.1	-5.0	335.0	4.0	10.0	0.0	V-Bicon	QP	0.0	18.1	30.0	-11.9
141.317	23.7	-5.7	112.0	4.0	10.0	0.0	H-Bicon	QP	0.0	18.0	30.0	-12.0
36.239	25.2	-7.3	244.0	1.0	10.0	0.0	H-Bicon	QP	0.0	17.9	30.0	-12.1
49.391	25.5	-7.6	7.0	3.5	10.0	0.0	H-Bicon	QP	0.0	17.9	30.0	-12.1
49.331	25.4	-7.6	40.0	3.3	10.0	0.0	V-Bicon	QP	0.0	17.8	30.0	-12.2
141.317	23.0	-5.7	0.0	3.3	10.0	0.0	V-Bicon	QP	0.0	17.3	30.0	-12.7
660.001	20.0	4.3	10.0	2.0	10.0	0.0	H-LPA	QP	0.0	24.3	37.0	-12.7
528.002	22.5	1.7	3.0	1.6	10.0	0.0	H-LPA	QP	0.0	24.2	37.0	-12.8
660.001	19.9	4.3	151.0	4.0	10.0	0.0	V-LPA	QP	0.0	24.2	37.0	-12.8
56.493	23.2	-6.9	116.0	1.0	10.0	0.0	V-Bicon	QP	0.0	16.3	30.0	-13.7
197.994	16.7	-0.4	285.0	4.0	10.0	0.0	H-Bicon	QP	0.0	16.3	30.0	-13.7
56.475	22.6	-6.9	315.0	4.0	10.0	0.0	H-Bicon	QP	0.0	15.7	30.0	-14.3

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
150.016	20.7	-5.0	360.0	1.5	10.0	0.0	H-Bicon	QP	0.0	15.7	30.0	-14.3
132.004	20.5	-5.3	360.0	1.0	10.0	0.0	V-Bicon	QP	0.0	15.2	30.0	-14.8
528.002	19.9	1.7	30.0	1.2	10.0	0.0	V-LPA	QP	0.0	21.6	37.0	-15.4
267.654	25.7	-4.9	289.0	4.0	10.0	0.0	H-LPA	QP	0.0	20.8	37.0	-16.2
267.654	25.5	-4.9	60.0	1.6	10.0	0.0	V-LPA	QP	0.0	20.6	37.0	-16.4

RADIATED EMISSIONS

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION
Sync to Laptop
AV playback.

MODE USED FOR FINAL DATA
Sync to Laptop

POWER SETTINGS INVESTIGATED
120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED			
Start Frequency	1000MHz	Stop Frequency	18000MHz

CLOCKS AND OSCILLATORS
None provided. Tested to 18GHz per customer's request.

SAMPLE CALCULATIONS
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOJ	1/14/2007	13
Antenna, Horn	ETS	3160-08	AHT	NCR	0
Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOK	1/14/2007	13
Antenna, Horn	ETS	3160-07	AHR	NCR	24
A292 Cable for Standard Gain Horn	ESM Cable Corp.	LA292	SUL	2/14/2007	13
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APJ	2/14/2007	13
Antenna, Horn	EMCO	3115	AHM	2/20/2006	24
SU07 cables a,h,c			SUB	2/14/2007	13
Spectrum Analyzer	Agilent	E4440A	AAW	4/25/2007	12

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0
Measurements were made using the bandwidths and detectors specified. No video filter was used.				

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062740			Date:	10/18/07
Customer:	Microsoft Corporation			Temperature:	19 C
Attendees:	James Wooten			Humidity:	47%
Project:	None			Barometric Pres.:	29.59
Tested by:	Chris Searls	Power:	120VAC/60Hz	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109:2006 Class B	ANSI C63.4:2003

TEST PARAMETERS			
Antenna Height(s) (m)	1.0-4.0	Test Distance (m)	3

COMMENTS

Config 5B-D-1. DV3 Dock S/N: S7300094. New AV Cable. Delta PS S/N: 00837702237. M/N: DPSN-8CB A Rev S3. Premium earbuds. Bundled USB and AV cables to 1m length. Component Cable. IR Remote. DV2B Config 3 Draco Samsung LCD, Toshiba HDD. Build 985 Ver 1.6.3 fix

EUT OPERATING MODES

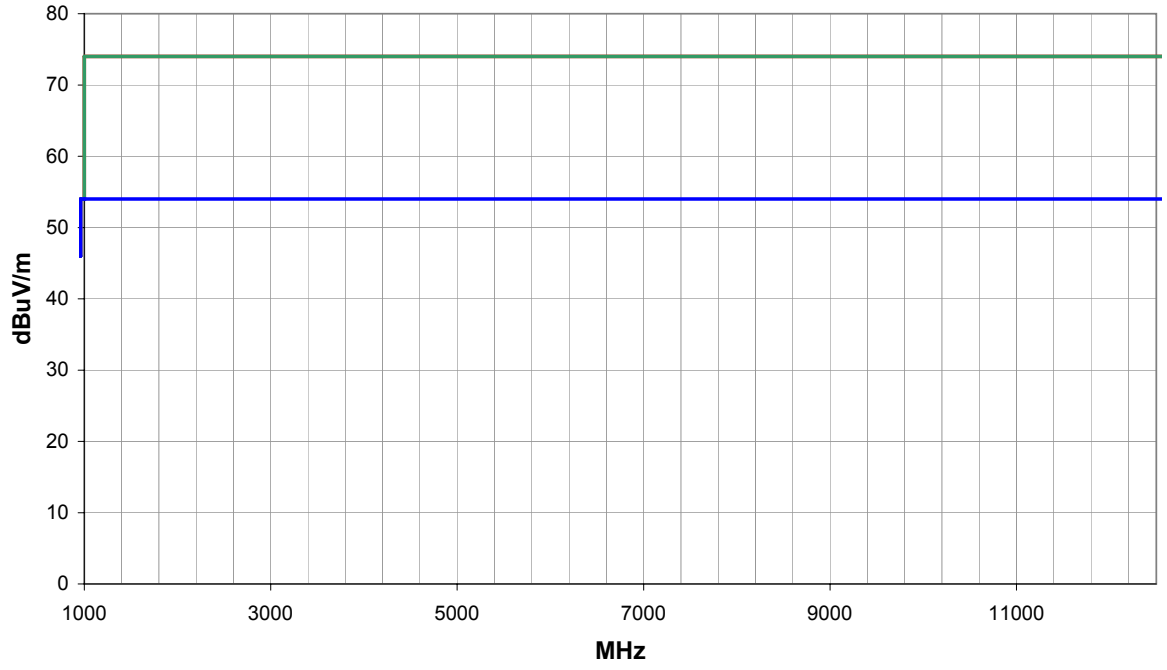
Sync to Laptop

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	8
Configuration #	7
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted	Spec. Limit	Compared to Spec.

All emissions were greater than 10db below the limit.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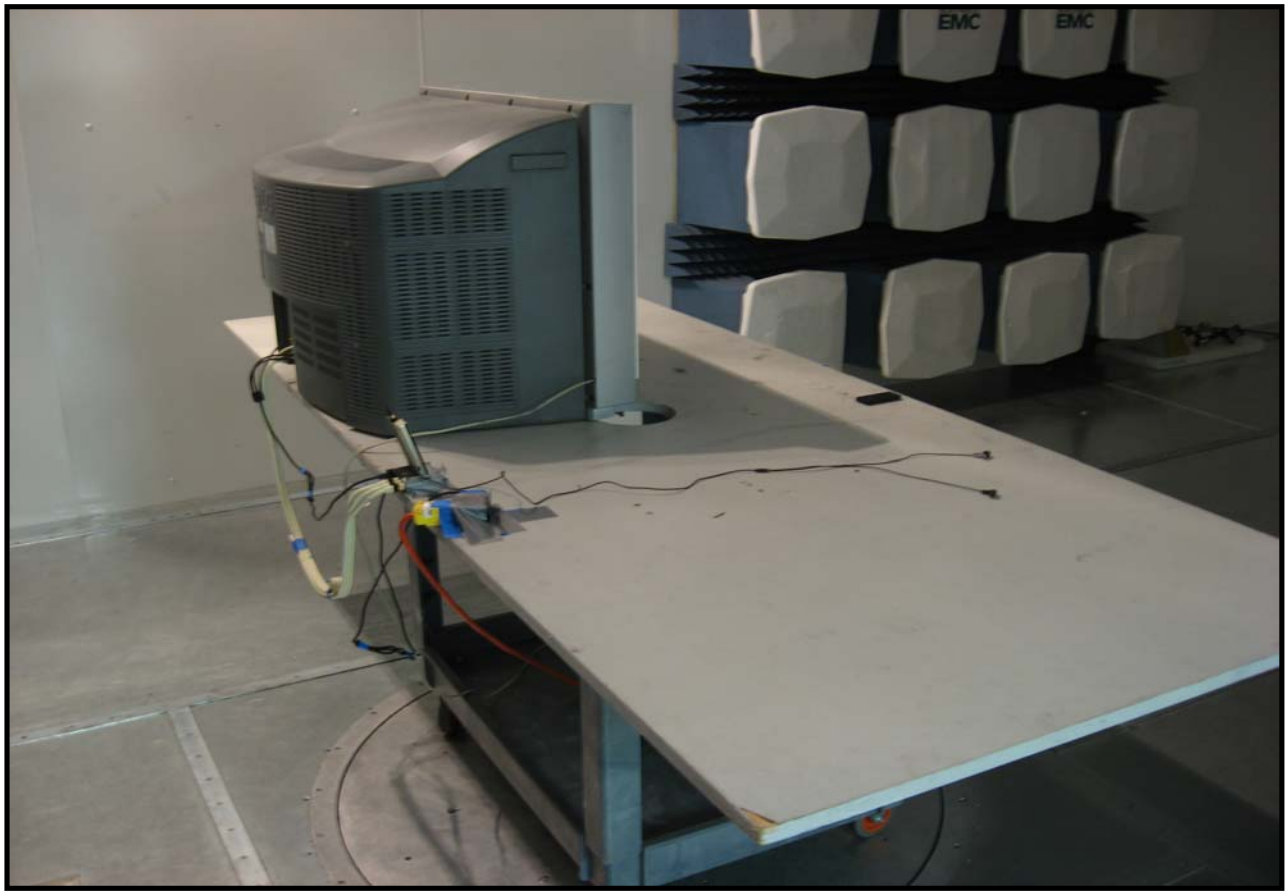

EMC
EMC

NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

PSA-2007.05.07
EMI 2007.7.24

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062740			Date:	10/17/07
Customer:	Microsoft Corporation			Temperature:	22° C
Attendees:	James Wooten			Humidity:	43%
Project:	None			Barometric Pres.:	29.57
Tested by:	Chris Searls	Power:	120VAC/60Hz	Job Site:	SU07

TEST SPECIFICATIONS	Test Method
FCC 15.109:2006 Class B	ANSI C63.4:2003

TEST PARAMETERS			
Antenna Height(s) (m)	1 - 4	Test Distance (m)	3

COMMENTS

Config 3B. AV Cable. Premium earbuds. Solution 2 sync Cable. Bundled USB and AV cables to 1m length. DV2B Config 3 Draco Samsung LCD, Toshiba HDD. Build 985 Ver 1.6.3 fix

EUT OPERATING MODES

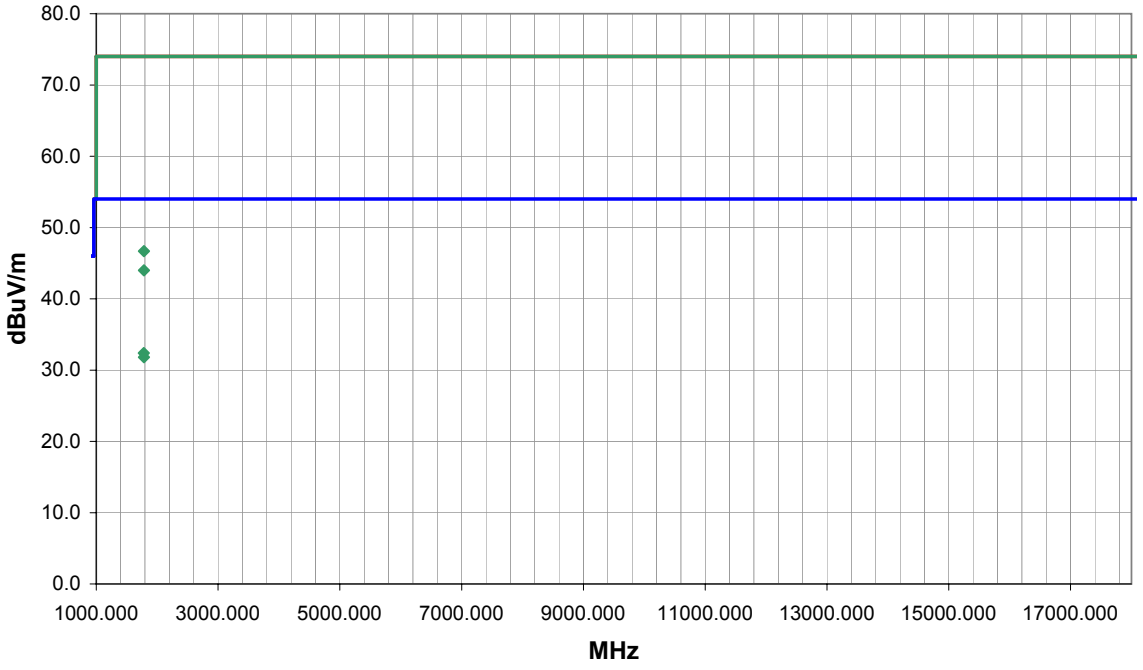
Sync to Laptop

DEVIATIONS FROM TEST STANDARD

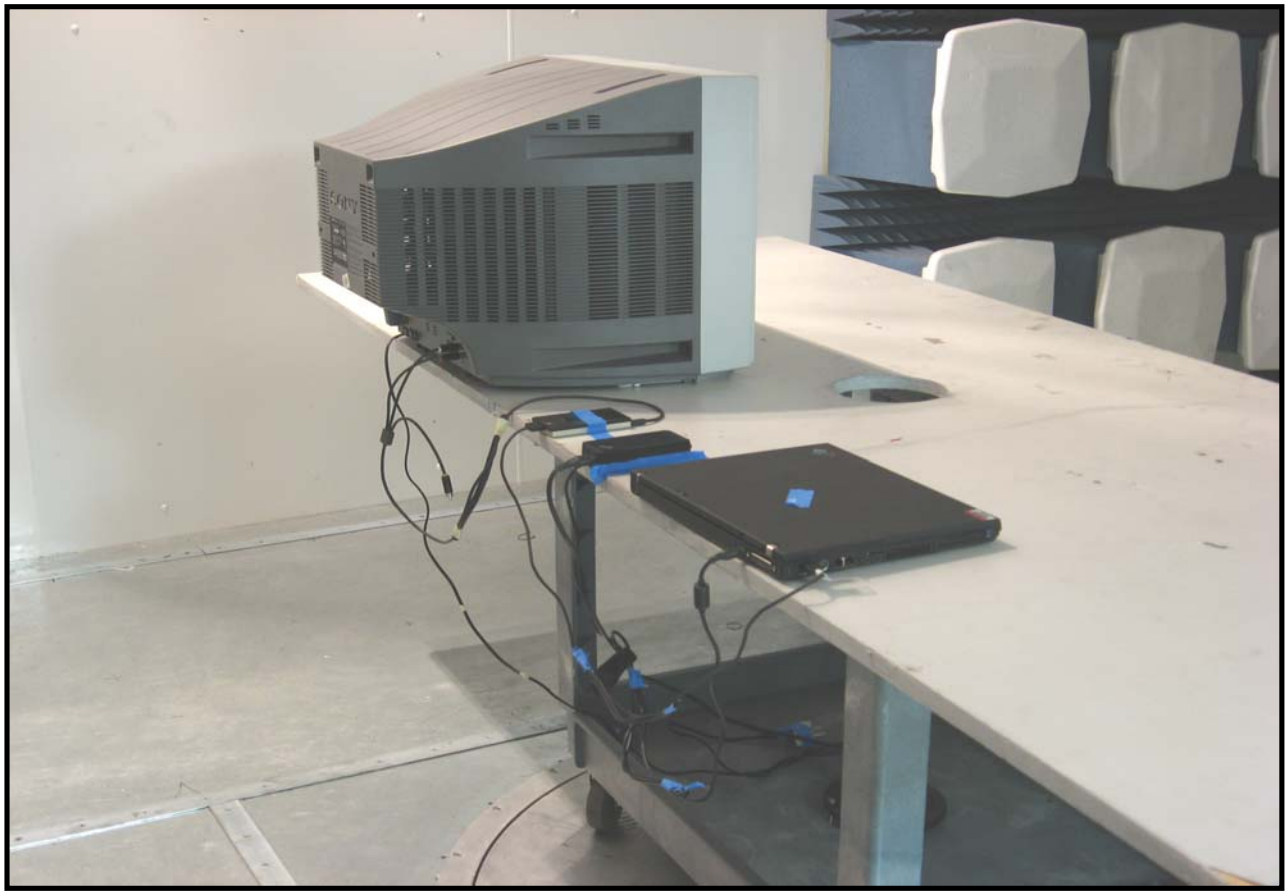
No deviations.

Run #	1
Configuration #	8
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)
1781.675	37.6	-5.2	259.0	1.2	3.0	0.0	V-Horn	AV	0.0	32.4	54.0	-21.6
1781.935	37.0	-5.2	145.0	1.1	3.0	0.0	H-Horn	AV	0.0	31.8	54.0	-22.2
1781.782	51.9	-5.2	259.0	1.2	3.0	0.0	V-Horn	PK	0.0	46.7	74.0	-27.3
1782.173	49.2	-5.2	145.0	1.1	3.0	0.0	H-Horn	PK	0.0	44.0	74.0	-30.0



NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062740			Date:	10/18/07
Customer:	Microsoft Corporation			Temperature:	19 C
Attendees:	James Wooten			Humidity:	47%
Project:	None			Barometric Pres.:	29.59
Tested by:	Chris Searls	Power:	120VAC/60Hz	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109:2006 Class B	ANSI C63.4:2003:

TEST PARAMETERS			
Antenna Height(s) (m)	1.0-4.0	Test Distance (m)	3

COMMENTS

Config 2B-D. Premium earbuds. Delta PS S/N: 00837702227. M/N: DPSN-8CB A Rev S3. Solution 2 sync Cable. Bundled USB and AV cables to 1m length. DV2B Config 3 Draco Samsung LCD, Toshiba HDD. Build 985 Ver 1.6.3 fix

EUT OPERATING MODES

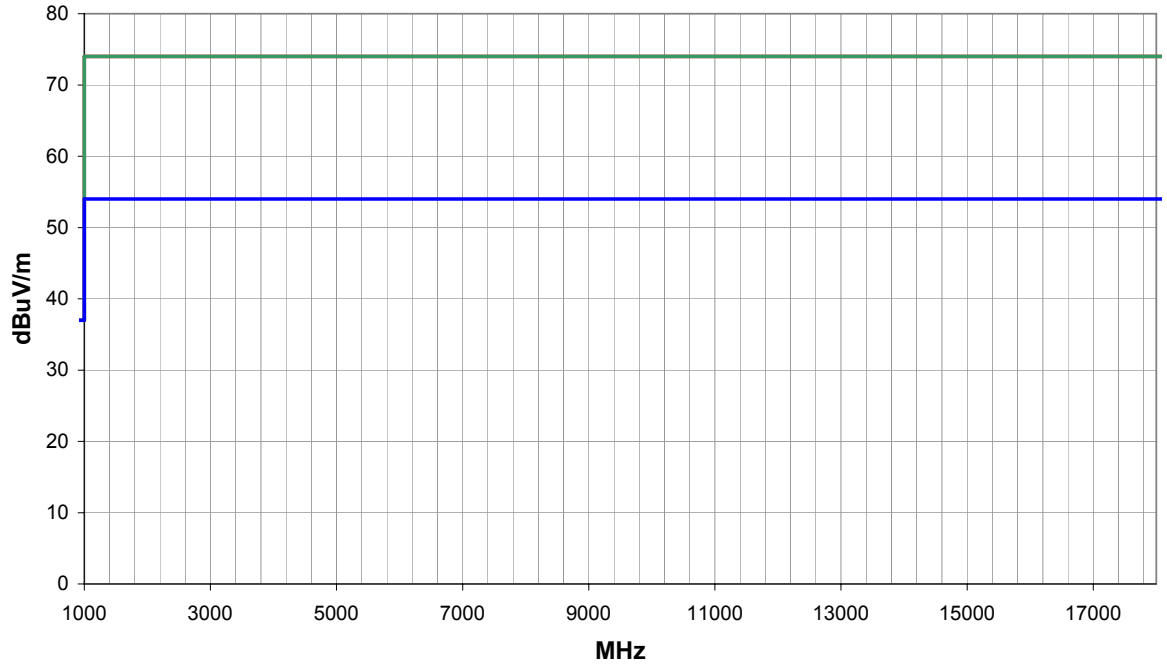
Sync to Laptop

DEVIATIONS FROM TEST STANDARD

No deviations.

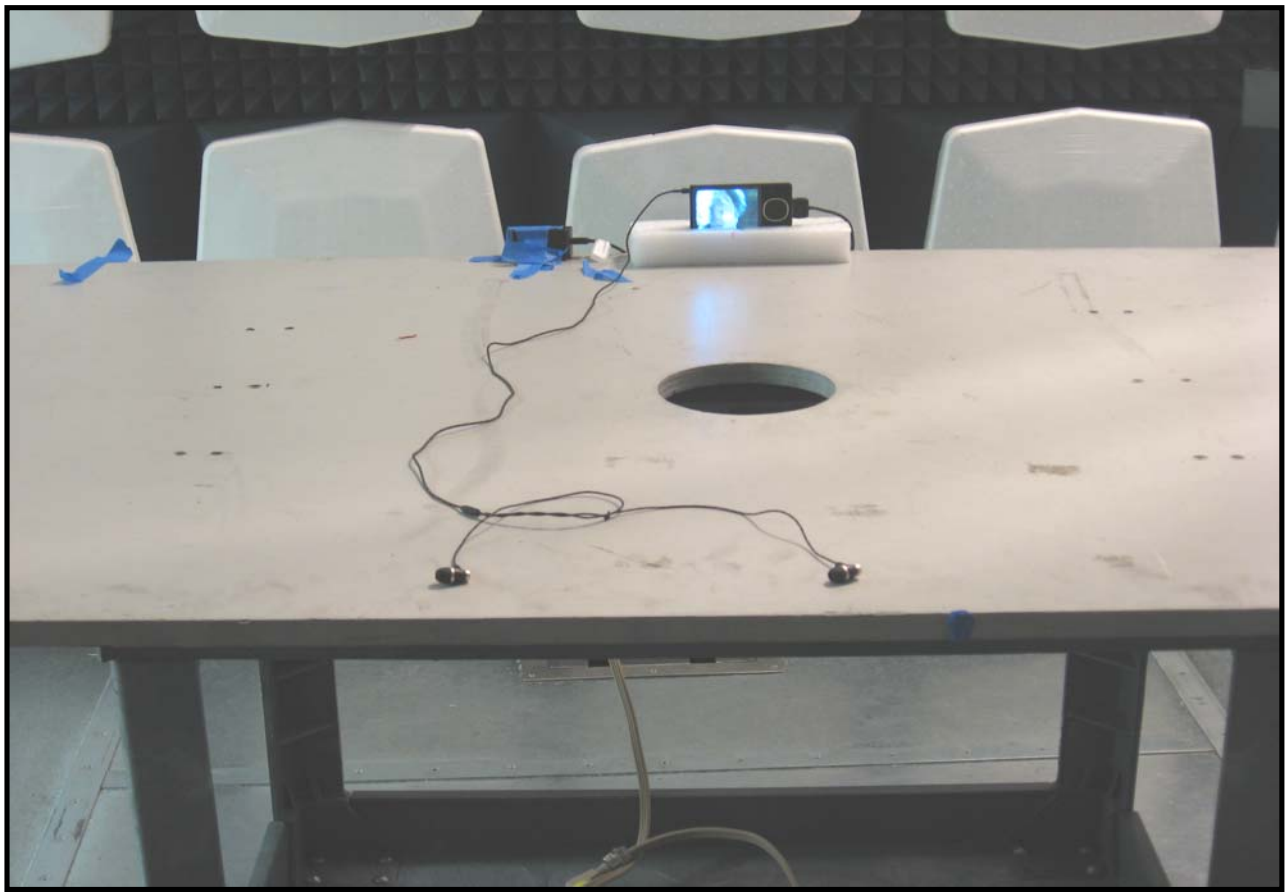
Run #	8
Configuration #	9
Results	Pass

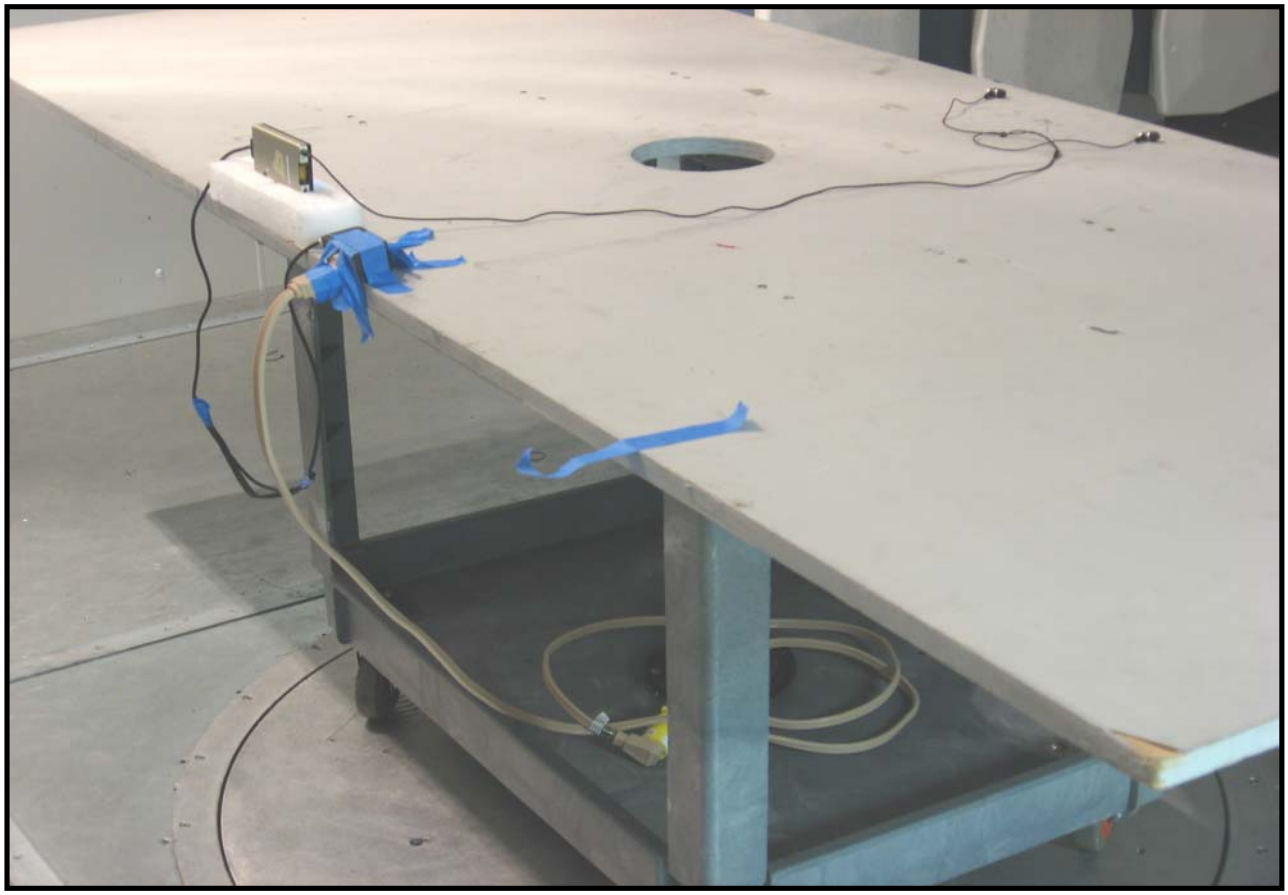
Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.





NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062740			Date:	10/18/07
Customer:	Microsoft Corporation			Temperature:	19 C
Attendees:	James Wooten			Humidity:	47%
Project:	None			Barometric Pres.:	29.59
Tested by:	Chris Searls	Power:	120VAC/60Hz	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109:2006 Class B	ANSI C63.4:2003:

TEST PARAMETERS			
Antenna Height(s) (m)	1.0-4.0	Test Distance (m)	3

COMMENTS

Config 1B-1. Premium earbuds. Solution 2 sync Cable. Bundled USB and AV cables to 1m length. DV2B Config 3 Draco Samsung LCD, Toshiba HDD. Build 985 Ver 1.6.3 fix

EUT OPERATING MODES

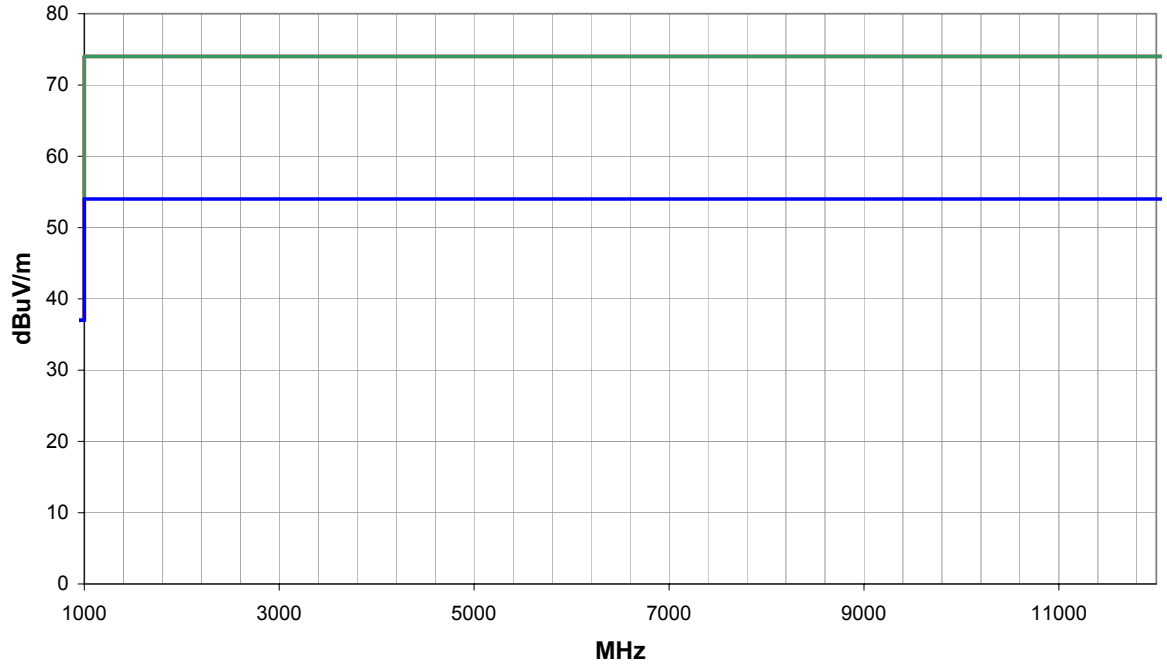
Sync to Laptop

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	8
Configuration #	10
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.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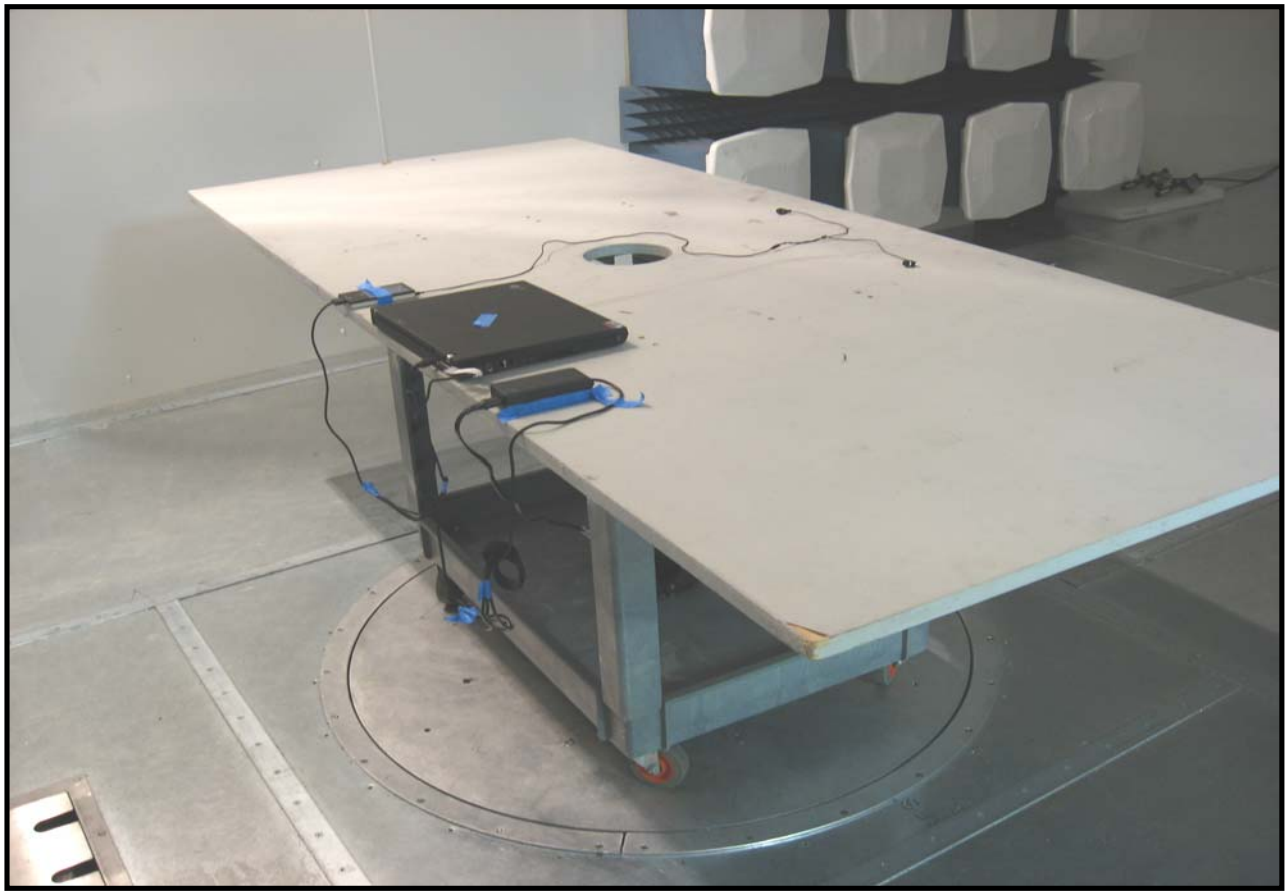


NORTHWEST EMC

RADIATED EMISSIONS DATA SHEET

ACQ-2007.05.07
EMI 2006.12.20

EUT:	Zune (80GB) mn: 1126			Work Order:	MCSO1308
Serial Number:	1200062740			Date:	10/18/07
Customer:	Microsoft Corporation			Temperature:	19 C
Attendees:	James Wooten			Humidity:	47%
Project:	None			Barometric Pres.:	29.59
Tested by:	Chris Searls	Power:	120VAC/60Hz	Job Site:	SU02

TEST SPECIFICATIONS	Test Method
FCC 15.109:2006 Class B	ANSI C63.4:2003:

TEST PARAMETERS			
Antenna Height(s) (m)	1.0-4.0	Test Distance (m)	3

COMMENTS

Config 4A. DV3 Dock S/N: S7300094. New AV Cable. Premium earbuds. Bundled USB and AV cables to 1m length. DV2B Config 3 Draco Samsung LCD, Toshiba HDD. Build 985 Ver 1.6.3 fix

EUT OPERATING MODES

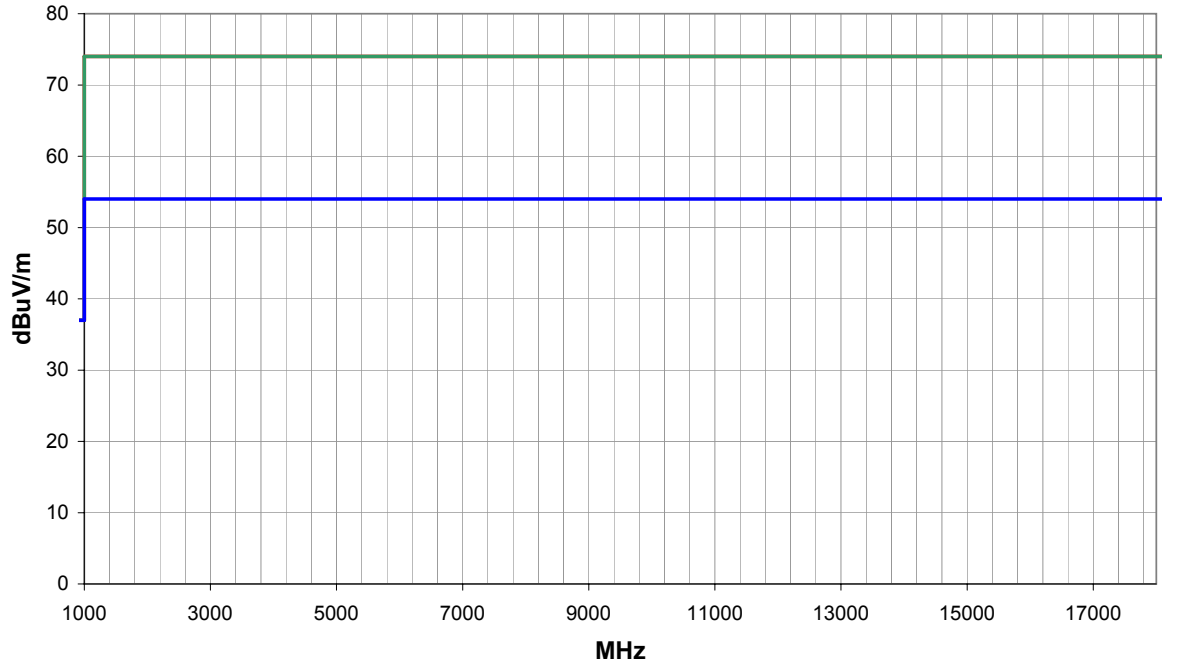
Sync to Laptop

DEVIATIONS FROM TEST STANDARD

No deviations.

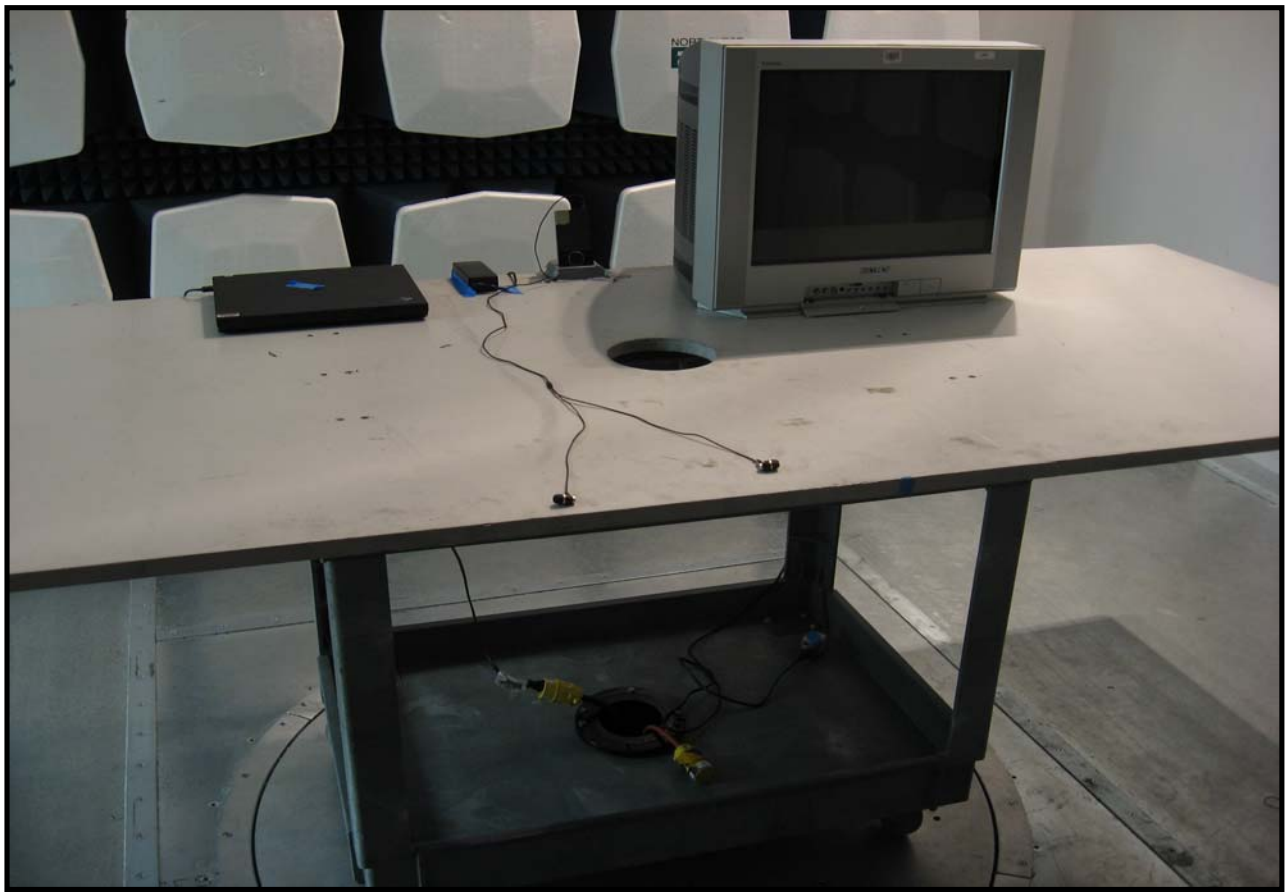
Run #	8
Configuration #	2
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted	Spec. Limit	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

AV Playback

POWER SETTINGS INVESTIGATED

120V/60Hz

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
LISN	Solar	9252-50-R-24-BNC	LIM	1/17/2007	13
LISN	Solar	9252-50-R-24-BNC	LIK	1/17/2007	13
SU07 cables d,c,a			SUC	1/18/2007	13
Attenuator	Pasternack		AUL	1/17/2007	13
High Pass Filter	TTE	H647-100k-50-718B	HFB	1/17/2007	13
Receiver	Rohde & Schwartz	ESCI	ARE	12/7/2006	13

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50 Ω measuring port is terminated by a 50 Ω EMI meter or a 50 Ω resistive load. All 50 Ω measuring ports of the LISN are terminated by 50Ω.

NORTHWEST

EMC

CONDUCTED EMISSIONS

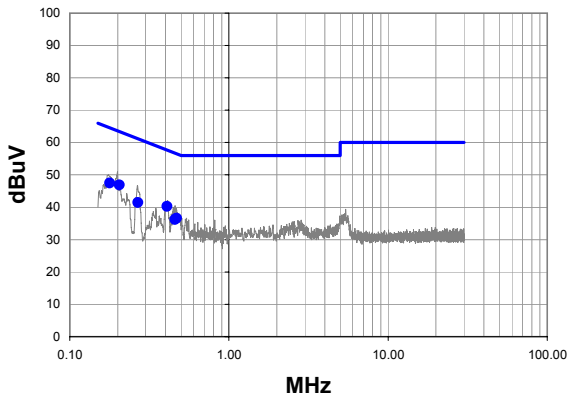
Version 2007.8.27
PSA-ESCI 2007.05.07

Work Order:	MCSO1308	**Date:**	10/18/07		
Project:	None	**Temperature:**	19° C		
Job Site:	SU01	**Humidity:**	49		
Serial Number:	1200023740	**Barometric Pres.:**	1011.70mb	**Tested by:**	Chris Searls
EUT:	Zune (80GB) mn: 1126				
Configuration:	6 - 2B-D				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120V/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Config 2B-D. Build 985. Version 1.6.3 Fix. Delta PS S/N: 00837702227, M/N: DPSN-8CB A REV S3. Premium earbuds. Solution 2 sync Cable. DV2B Config 3 Draco, Samsung LCD, Toshiba HDD.				

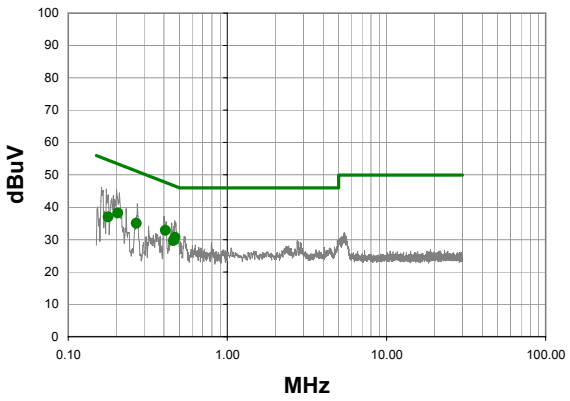
Test Specifications	**Class B**	**Test Method**
FCC 15.107:2006		ANSI C63.4:2003

Run #	1	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.205	25.9	1.0	46.9	63.4	-16.5
0.178	26.0	1.4	47.4	64.6	-17.1
0.408	19.4	0.9	40.3	57.7	-17.4
0.268	20.5	1.0	41.5	61.2	-19.7
0.470	15.7	0.9	36.6	56.5	-19.9
0.458	15.3	0.9	36.2	56.7	-20.6

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.408	11.9	0.9	32.8	47.7	-14.9
0.205	17.2	1.0	38.2	53.4	-15.2
0.470	9.8	0.9	30.7	46.5	-15.8
0.268	14.0	1.0	35.0	51.2	-16.2
0.458	8.8	0.9	29.7	46.7	-17.1
0.178	15.5	1.4	36.9	54.6	-17.6

NORTHWEST

EMC

CONDUCTED EMISSIONS

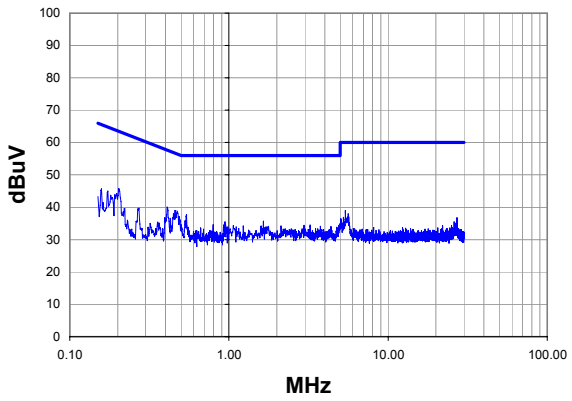
Version 2007.8.27
PSA-ESCI 2007.05.07

Work Order:	MCSO1308	**Date:**	10/18/07		
Project:	None	**Temperature:**	19° C		
Job Site:	SU01	**Humidity:**	49		
Serial Number:	1200023740	**Barometric Pres.:**	1011.70mb	**Tested by:**	Chris Searls
EUT:	Zune (80GB) mn: 1126				
Configuration:	6 - 2B-D				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120V/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Config 2B-D. Build 985. Version 1.6.3 Fix. Delta PS S/N: 00837702227, M/N: DPSN-8CB A REV S3. Premium earbuds. Solution 2 sync Cable. DV2B Config 3 Draco, Samsung LCD, Toshiba HDD.				

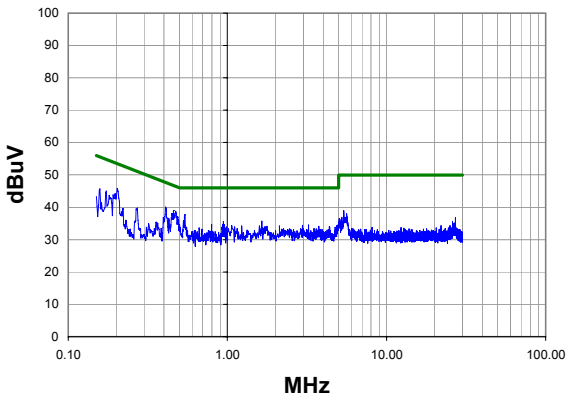
Test Specifications	**Class B**	**Test Method**
FCC 15.107:2006		ANSI C63.4:2003

Run #	2	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit

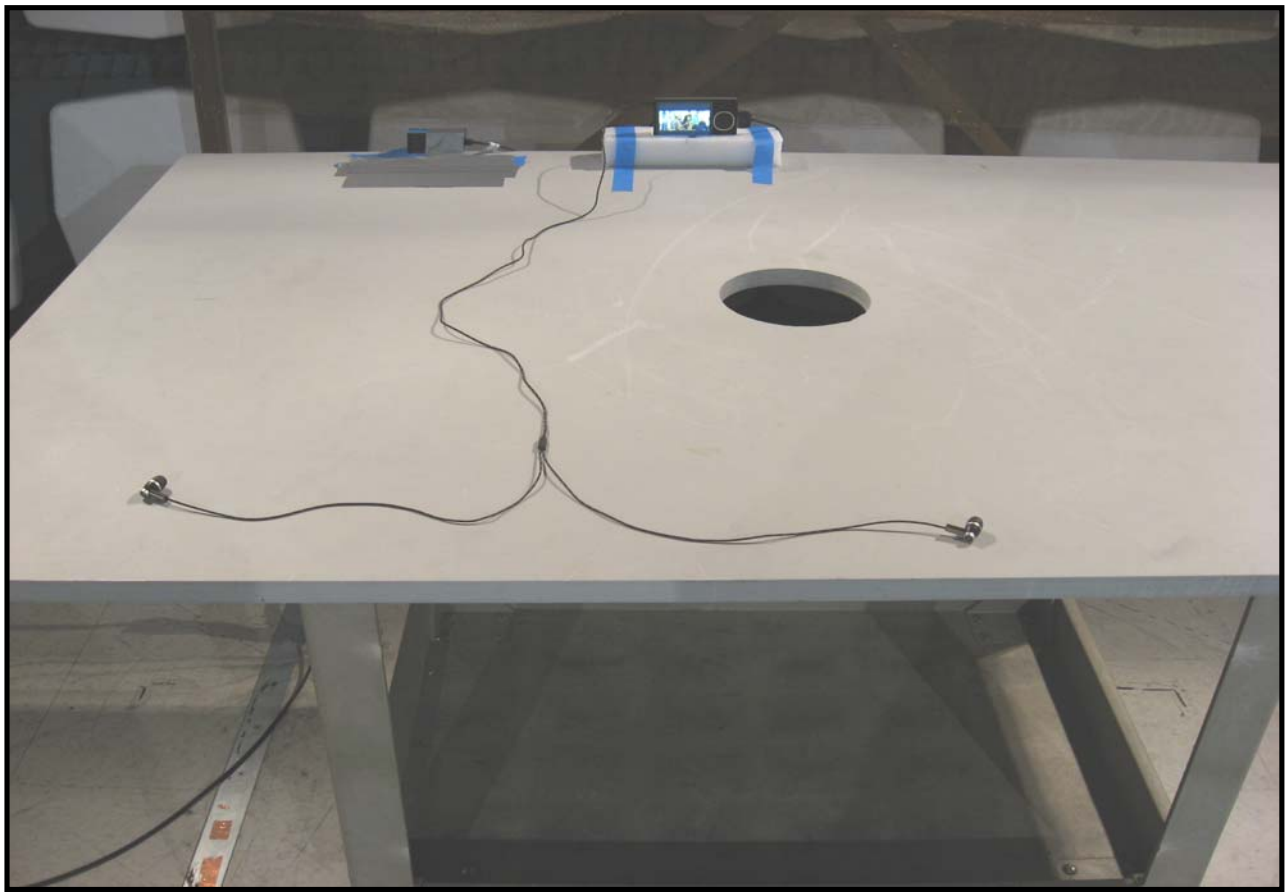


Peak Data - vs - Quasi Peak Limit

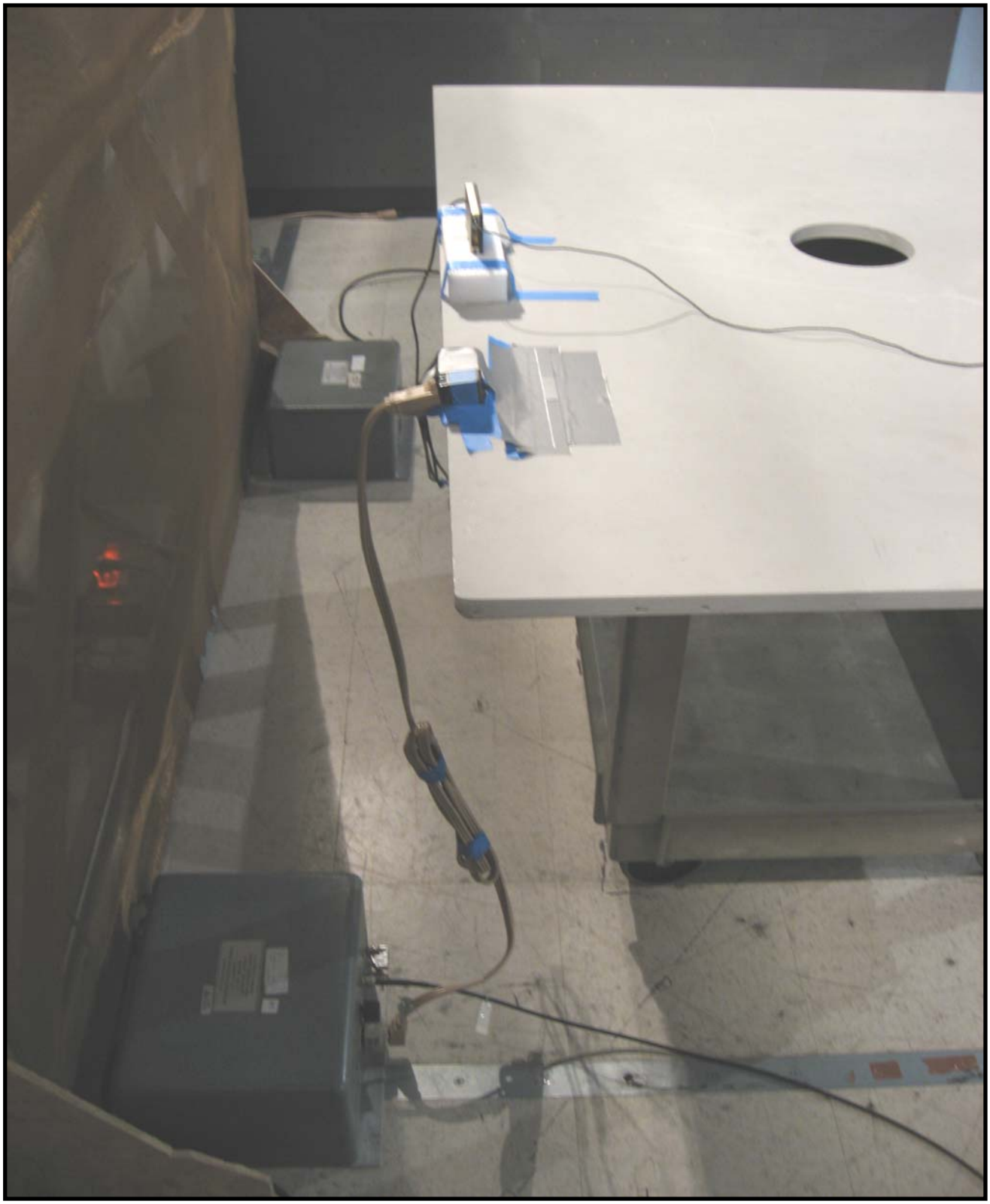
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.408	19.2	0.9	40.1	57.7	-17.6
0.203	24.8	1.0	45.8	63.5	-17.7
0.458	18.1	0.9	39.0	56.7	-17.8
0.541	16.9	0.8	37.7	56.0	-18.3
0.174	23.5	1.5	45.0	64.8	-19.7
0.159	23.9	1.8	45.7	65.5	-19.8
1.648	15.1	0.6	35.7	56.0	-20.3
0.944	14.9	0.6	35.5	56.0	-20.5
0.429	15.7	0.9	36.6	57.3	-20.7
0.181	22.3	1.4	43.7	64.5	-20.8
5.390	18.3	0.7	39.0	60.0	-21.0
0.272	18.8	1.0	39.8	61.0	-21.3
0.932	14.0	0.6	34.6	56.0	-21.4
0.794	13.9	0.7	34.6	56.0	-21.4
3.232	13.9	0.6	34.5	56.0	-21.5
2.960	13.8	0.6	34.4	56.0	-21.6
1.064	13.7	0.6	34.3	56.0	-21.7
2.128	13.6	0.6	34.2	56.0	-21.8
1.592	13.6	0.6	34.2	56.0	-21.8
1.232	13.6	0.6	34.2	56.0	-21.8

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.408	19.2	0.9	40.1	47.7	-7.6
0.203	24.8	1.0	45.8	53.5	-7.7
0.458	18.1	0.9	39.0	46.7	-7.8
0.541	16.9	0.8	37.7	46.0	-8.3
0.174	23.5	1.5	45.0	54.8	-9.7
0.159	23.9	1.8	45.7	55.5	-9.8
1.648	15.1	0.6	35.7	46.0	-10.3
0.944	14.9	0.6	35.5	46.0	-10.5
0.429	15.7	0.9	36.6	47.3	-10.7
0.181	22.3	1.4	43.7	54.5	-10.8
5.390	18.3	0.7	39.0	50.0	-11.0
0.272	18.8	1.0	39.8	51.0	-11.3
0.932	14.0	0.6	34.6	46.0	-11.4
0.794	13.9	0.7	34.6	46.0	-11.4
3.232	13.9	0.6	34.5	46.0	-11.5
2.960	13.8	0.6	34.4	46.0	-11.6
1.064	13.7	0.6	34.3	46.0	-11.7
2.128	13.6	0.6	34.2	46.0	-11.8
1.592	13.6	0.6	34.2	46.0	-11.8
1.232	13.6	0.6	34.2	46.0	-11.8




EMC



NORTHWEST

EMC

CONDUCTED EMISSIONS

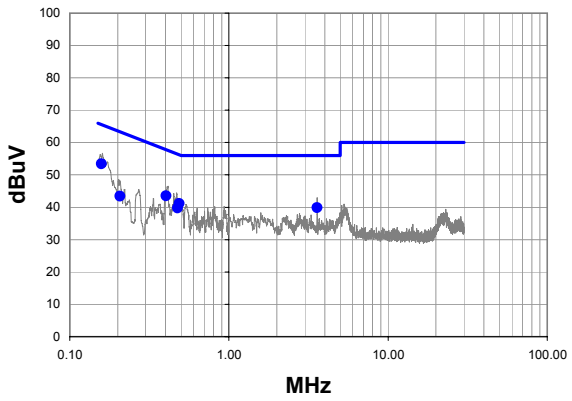
Version 2007.8.27
PSA-ESCI 2007.05.07

Work Order:	MCSO1308	**Date:**	10/18/07		
Project:	None	**Temperature:**	19° C		
Job Site:	SU01	**Humidity:**	49		
Serial Number:	1200023740	**Barometric Pres.:**	1011.70mb	**Tested by:**	Chris Searls
EUT:	Zune (80GB) mn: 1126				
Configuration:	5 - 3A-D				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120V/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Config 3A-D. Build 985. Version 1.6.3 Fix. Delta PS S/N: 00837702227, M/N: DPSN-8CB A REV S3. AV Cable to TV. Solution 2 sync Cable. DV2B Config 3 Draco, Samsung LCD, Toshiba HDD.				

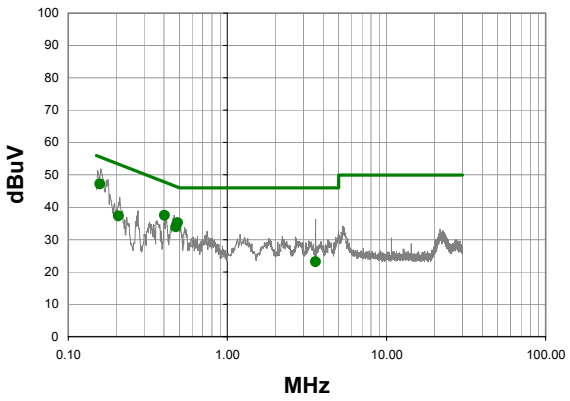
Test Specifications	**Class B**	**Test Method**
FCC 15.107:2006		ANSI C63.4:2003

Run #	3	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.158	31.6	1.8	53.4	65.6	-12.1
0.403	22.6	0.9	43.5	57.8	-14.3
0.487	20.3	0.9	41.2	56.2	-15.1
3.580	19.2	0.7	39.9	56.0	-16.1
0.475	18.9	0.9	39.8	56.4	-16.7
0.207	22.4	1.0	43.4	63.3	-19.9

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.158	25.3	1.8	47.1	55.6	-8.4
0.403	16.6	0.9	37.5	47.8	-10.3
0.487	14.3	0.9	35.2	46.2	-11.1
0.475	13.1	0.9	34.0	46.4	-12.5
0.207	16.3	1.0	37.3	53.3	-16.0
3.580	2.5	0.7	23.2	46.0	-22.8

NORTHWEST

EMC

CONDUCTED EMISSIONS

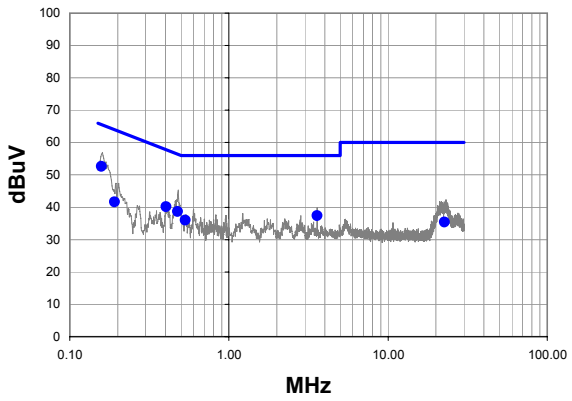
Version 2007.8.27
PSA-ESCI 2007.05.07

Work Order:	MCSO1308	**Date:**	10/18/07		
Project:	None	**Temperature:**	19° C		
Job Site:	SU01	**Humidity:**	49		
Serial Number:	1200023740	**Barometric Pres.:**	1011.70mb	**Tested by:**	Chris Searls
EUT:	Zune (80GB) mn: 1126				
Configuration:	5 - 3A-D				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120V/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Config 3A-D. Build 985. Version 1.6.3 Fix. Delta PS S/N: 00837702227, M/N: DPSN-8CB A REV S3. AV Cable to TV. Solution 2 sync Cable. DV2B Config 3 Draco, Samsung LCD, Toshiba HDD.				

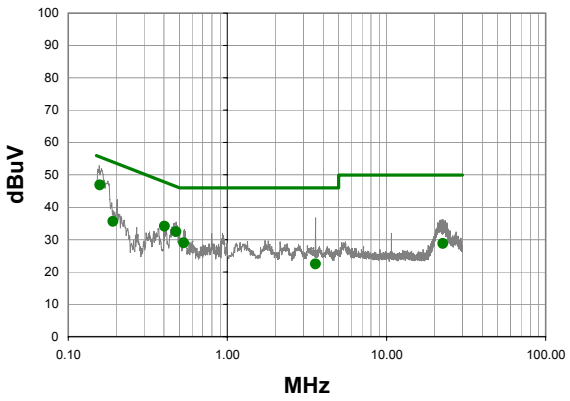
Test Specifications	**Class B**	**Test Method**
FCC 15.107:2006		ANSI C63.4:2003

Run #	4	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

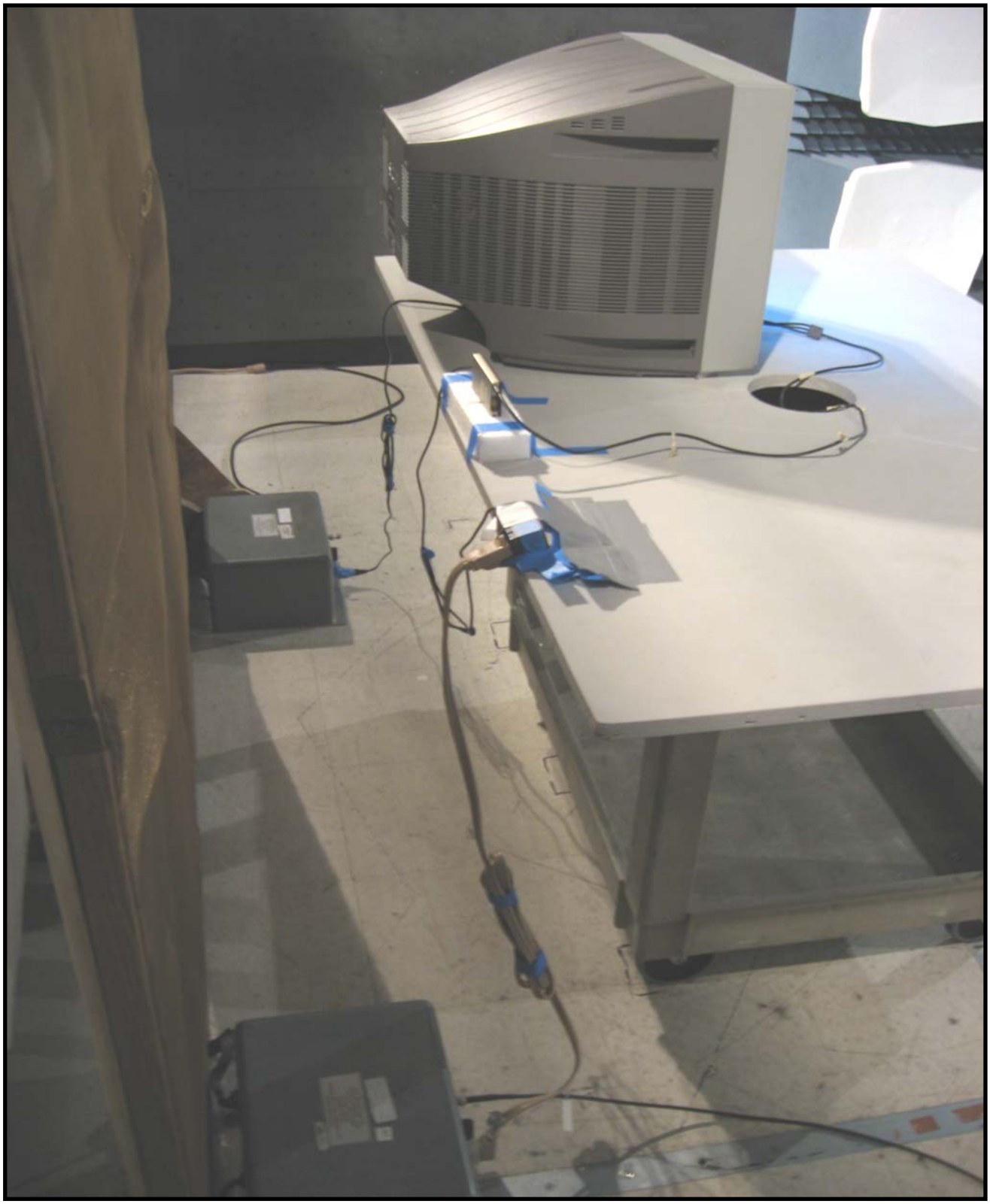


Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.158	30.8	1.8	52.6	65.6	-12.9
0.403	19.3	0.9	40.2	57.8	-17.6
0.476	17.8	0.9	38.7	56.4	-17.7
3.580	16.7	0.7	37.4	56.0	-18.6
0.532	15.2	0.8	36.0	56.0	-20.0
0.191	20.5	1.2	41.7	64.0	-22.3
22.618	14.4	1.0	35.4	60.0	-24.6

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.158	25.0	1.8	46.8	55.6	-8.7
0.403	13.2	0.9	34.1	47.8	-13.7
0.476	11.6	0.9	32.5	46.4	-13.9
0.532	8.1	0.8	28.9	46.0	-17.1
0.191	14.4	1.2	35.6	54.0	-18.4
22.618	7.8	1.0	28.8	50.0	-21.2
3.580	1.8	0.7	22.5	46.0	-23.5



NORTHWEST

EMC

CONDUCTED EMISSIONS

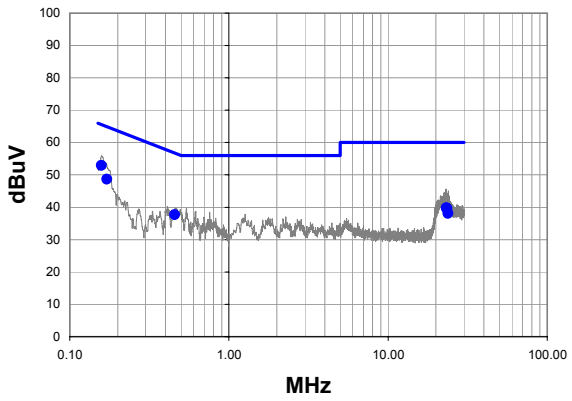
Version 2007.8.27
PSA-ESCI 2007.05.07

Work Order:	MCSO1308	**Date:**	10/18/07		
Project:	None	**Temperature:**	19° C		
Job Site:	SU01	**Humidity:**	49		
Serial Number:	1200023740	**Barometric Pres.:**	1011.70mb	**Tested by:**	Chris Searls
EUT:	Zune (80GB) mn: 1126				
Configuration:	4 - 5A-D-D				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120V/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Config 5A-D-D. Build 985. Version 1.6.3 Fix. DV3 Dock S/N: S7300094. Premium Earbuds. Delta PS S/N: 00837702227, M/N: DPSN-8CB A REV S3. AV Cable to TV. DV2B Config 3 Draco, Samsung LCD, Toshiba HDD.				

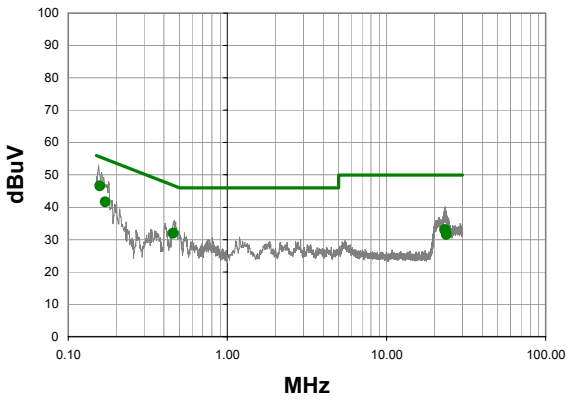
Test Specifications	**Class B**	**Test Method**
FCC 15.107:2006		ANSI C63.4:2003

Run #	5	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.158	31.1	1.8	52.9	65.6	-12.6
0.171	27.1	1.6	48.7	64.9	-16.2
0.457	16.8	0.9	37.7	56.7	-19.1
23.328	18.8	1.0	39.8	60.0	-20.2
23.220	18.8	1.0	39.8	60.0	-20.2
23.428	18.6	1.0	39.6	60.0	-20.4
23.798	17.1	1.0	38.1	60.0	-21.9

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.158	24.7	1.8	46.5	55.6	-9.0
0.171	20.1	1.6	41.7	54.9	-13.2
0.457	11.1	0.9	32.0	46.7	-14.8
23.328	12.0	1.0	33.0	50.0	-17.0
23.220	11.9	1.0	32.9	50.0	-17.1
23.428	11.8	1.0	32.8	50.0	-17.2
23.798	10.6	1.0	31.6	50.0	-18.4

NORTHWEST

EMC

CONDUCTED EMISSIONS

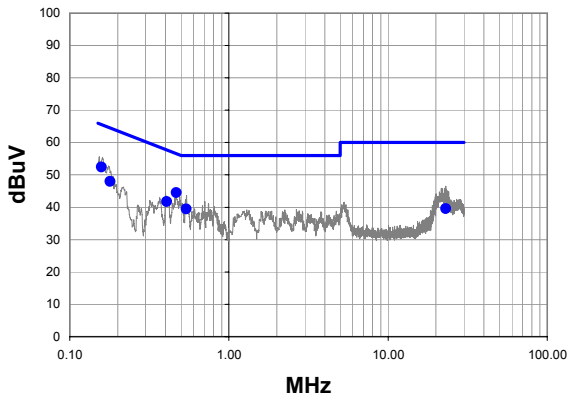
Version 2007.8.27
PSA-ESCI 2007.05.07

Work Order:	MCSO1308	**Date:**	10/18/07		
Project:	None	**Temperature:**	19° C		
Job Site:	SU01	**Humidity:**	49		
Serial Number:	1200023740	**Barometric Pres.:**	1011.70mb	**Tested by:**	Chris Searls
EUT:	Zune (80GB) mn: 1126				
Configuration:	4 - 5A-D-D				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120V/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Config 5A-D-D. Build 985. Version 1.6.3 Fix. DV3 Dock S/N: S7300094. Premium Earbuds. Delta PS S/N: 00837702227, M/N: DPSN-8CB A REV S3. AV Cable to TV. DV2B Config 3 Draco, Samsung LCD, Toshiba HDD.				

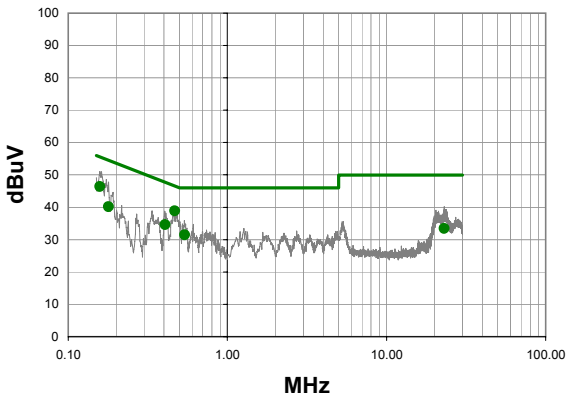
Test Specifications	**Class B**	**Test Method**
FCC 15.107:2006		ANSI C63.4:2003

Run #	6	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit



Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.468	23.6	0.9	44.5	56.5	-12.1
0.158	30.6	1.8	52.4	65.6	-13.1
0.407	20.8	0.9	41.7	57.7	-16.0
0.540	18.6	0.8	39.4	56.0	-16.6
0.179	26.5	1.4	47.9	64.5	-16.6
23.068	18.6	1.0	39.6	60.0	-20.4

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.468	18.0	0.9	38.9	46.5	-7.7
0.158	24.5	1.8	46.3	55.6	-9.2
0.407	13.7	0.9	34.6	47.7	-13.1
0.179	18.7	1.4	40.1	54.5	-14.4
0.540	10.6	0.8	31.4	46.0	-14.6
23.068	12.4	1.0	33.4	50.0	-16.6


NORTHWEST
EMC

NORTHWEST

EMC

CONDUCTED EMISSIONS

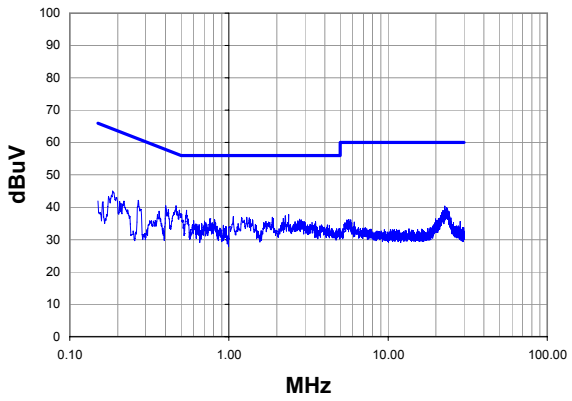
Version 2007.8.27
PSA-ESCI 2007.05.07

Work Order:	MCSO1308	**Date:**	10/18/07		
Project:	None	**Temperature:**	19° C		
Job Site:	SU01	**Humidity:**	49		
Serial Number:	1200023740	**Barometric Pres.:**	1011.70mb	**Tested by:**	Chris Searls
EUT:	Zune (80GB) mn: 1126				
Configuration:	3 - 5A-D-C				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120V/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Config 5A-D-C. Build 985. Version 1.6.3 Fix. DV3 Dock S/N: S7300094. Delta PS S/N: 00837702227, M/N: DPSN-8CB A REV S3. AX Cable to Speakers. DV2B Config 3 Draco, Samsung LCD, Toshiba HDD.				

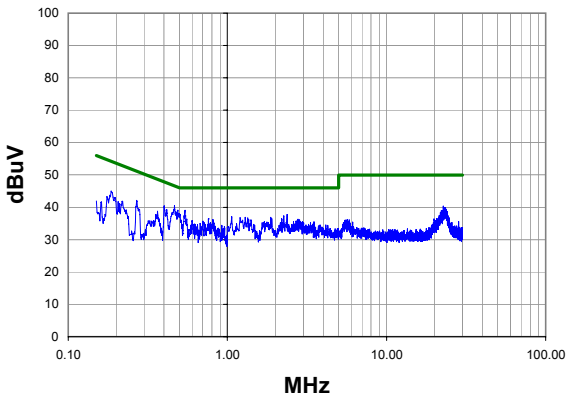
Test Specifications	**Class B**	**Test Method**
FCC 15.107:2006		ANSI C63.4:2003

Run #	7	**Line:**	High Line	**Ext. Attenuation:**	20	**Results**	Pass

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.465	19.6	0.9	40.5	56.6	-16.1
0.541	18.2	0.8	39.0	56.0	-17.0
0.402	19.5	0.9	40.4	57.8	-17.4
2.368	17.2	0.6	37.8	56.0	-18.2
2.264	16.7	0.6	37.3	56.0	-18.7
1.064	16.5	0.6	37.1	56.0	-18.9
0.269	21.2	1.0	42.2	61.1	-19.0
1.872	16.3	0.6	36.9	56.0	-19.1
1.296	16.3	0.6	36.9	56.0	-19.1
1.200	16.2	0.6	36.8	56.0	-19.2
0.186	23.7	1.3	45.0	64.2	-19.2
2.192	15.9	0.6	36.5	56.0	-19.5
0.759	15.7	0.7	36.4	56.0	-19.6
22.770	19.4	1.0	40.4	60.0	-19.6
2.776	15.7	0.6	36.3	56.0	-19.7
0.811	15.5	0.7	36.2	56.0	-19.8
2.840	15.5	0.6	36.1	56.0	-19.9
1.408	15.5	0.6	36.1	56.0	-19.9
0.364	17.8	0.9	38.7	58.6	-19.9
0.599	15.1	0.8	35.9	56.0	-20.1

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.465	19.6	0.9	40.5	46.6	-6.1
0.541	18.2	0.8	39.0	46.0	-7.0
0.402	19.5	0.9	40.4	47.8	-7.4
2.368	17.2	0.6	37.8	46.0	-8.2
2.264	16.7	0.6	37.3	46.0	-8.7
1.064	16.5	0.6	37.1	46.0	-8.9
0.269	21.2	1.0	42.2	51.1	-9.0
1.872	16.3	0.6	36.9	46.0	-9.1
1.296	16.3	0.6	36.9	46.0	-9.1
1.200	16.2	0.6	36.8	46.0	-9.2
0.186	23.7	1.3	45.0	54.2	-9.2
2.192	15.9	0.6	36.5	46.0	-9.5
0.759	15.7	0.7	36.4	46.0	-9.6
22.770	19.4	1.0	40.4	50.0	-9.6
2.776	15.7	0.6	36.3	46.0	-9.7
0.811	15.5	0.7	36.2	46.0	-9.8
2.840	15.5	0.6	36.1	46.0	-9.9
1.408	15.5	0.6	36.1	46.0	-9.9
0.364	17.8	0.9	38.7	48.6	-9.9
0.599	15.1	0.8	35.9	46.0	-10.1

NORTHWEST

EMC

CONDUCTED EMISSIONS

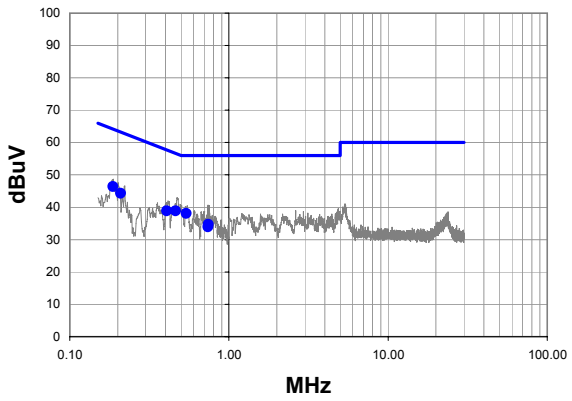
Version 2007.8.27
PSA-ESCI 2007.05.07

Work Order:	MCSO1308	**Date:**	10/18/07		
Project:	None	**Temperature:**	19° C		
Job Site:	SU01	**Humidity:**	49		
Serial Number:	1200023740	**Barometric Pres.:**	1011.70mb	**Tested by:**	Chris Searls
EUT:	Zune (80GB) mn: 1126				
Configuration:	3 - 5A-D-C				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120V/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Config 5A-D-C. Build 985. Version 1.6.3 Fix. DV3 Dock S/N: S7300094. Delta PS S/N: 00837702227, M/N: DPSN-8CB A REV S3. AX Cable to Speakers. DV2B Config 3 Draco, Samsung LCD, Toshiba HDD.				

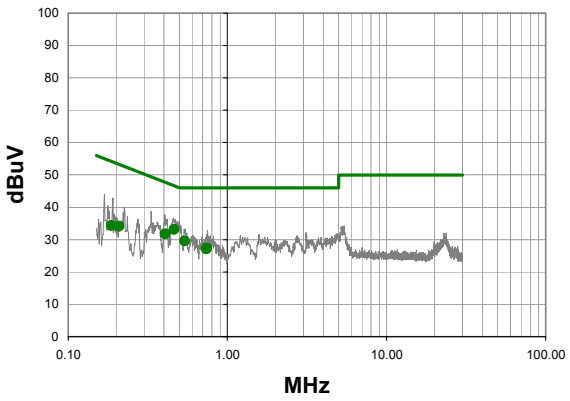
Test Specifications	**Class B**	**Test Method**
FCC 15.107:2006		ANSI C63.4:2003

Run #	9	**Line:**	Neutral	**Ext. Attenuation:**	20	**Results**	Pass

Quasi Peak Data - vs - Quasi Peak Limit



Average Data - vs - Average Limit

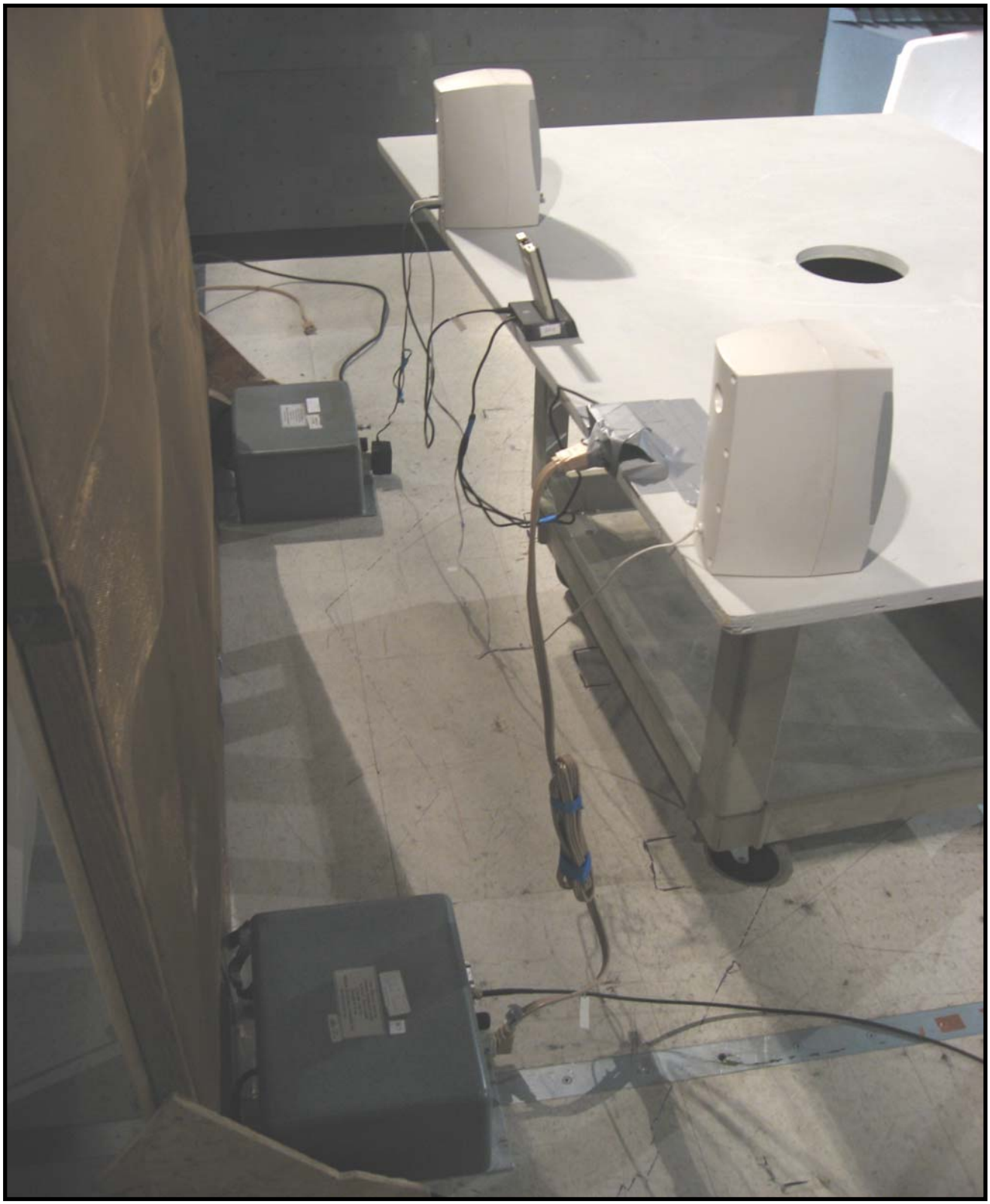


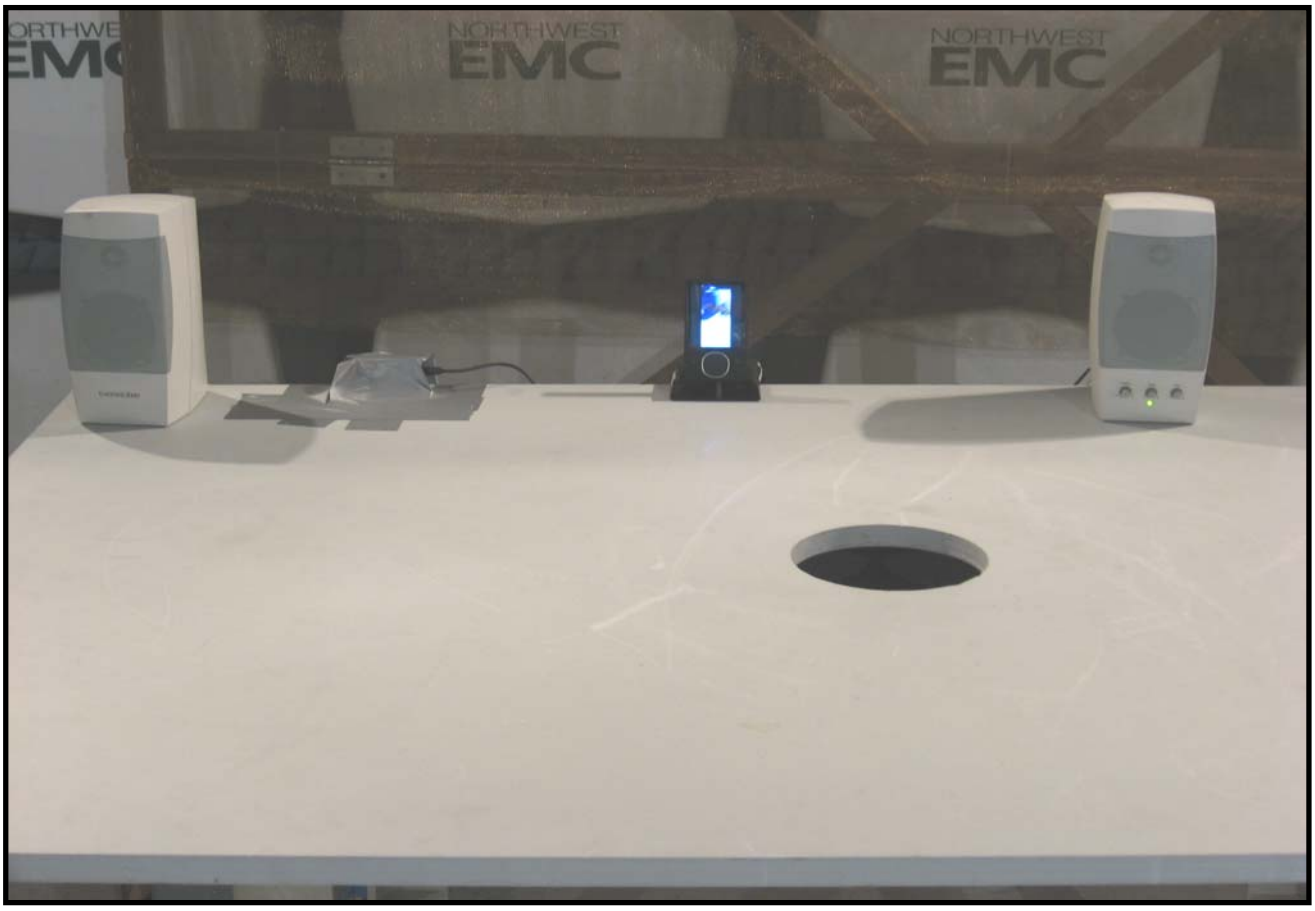
Quasi Peak Data - vs - Quasi Peak Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.463	18.0	0.9	38.9	56.6	-17.8
0.187	25.1	1.3	46.4	64.2	-17.8
0.540	17.2	0.8	38.0	56.0	-18.0
0.407	18.0	0.9	38.9	57.7	-18.8
0.209	23.3	1.0	44.3	63.2	-18.9
0.744	14.0	0.7	34.7	56.0	-21.3
0.738	13.2	0.7	33.9	56.0	-22.1

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.463	12.3	0.9	33.2	46.6	-13.5
0.407	10.8	0.9	31.7	47.7	-16.0
0.540	8.7	0.8	29.5	46.0	-16.5
0.744	6.7	0.7	27.4	46.0	-18.6
0.738	6.4	0.7	27.1	46.0	-18.9
0.209	13.1	1.0	34.1	53.2	-19.1
0.187	13.1	1.3	34.4	54.2	-19.8

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