

Microsoft Corporation

Zune HD

Report No. MCSO1426.1

Report Prepared By



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

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EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test
Last Date of Test: June 05, 2009
Microsoft Corporation
Model: Zune HD

Emissions			
Test Description	Specification	Test Method	Pass/Fail
Radiated Emissions	EN 55022: 2006 + A1:2007 Class B	CISPR 22:2005 (Amended by A1:2005 and A2:2006)	Pass
Radiated Emissions	ICES-003:2004	CISPR 22:2005 (Amended by A1:2005 and A2:2006)	Pass
Radiated Emissions	FCC 15.109(g) (CISPR 22:1997):2009 Class B	ANSI C63.4:2003	Pass
Radiated Emissions	FCC 15.109:2009 Class B	ANSI C63.4:2003	Pass
Conducted Emissions	EN 55022: 2006 + A1:2007 Class B	CISPR 22:2005 (Amended by A1:2005 and A2:2006)	Pass
Conducted Emissions	ICES-003:2004	CISPR 22:2005 (Amended by A1:2005 and A2:2006)	Pass
Conducted Emissions	FCC 15.107:2009 Class B	ANSI C63.4:2003	Pass

Immunity			
Test Description	Specification	Test Method	Performance Criteria
Radiated Immunity	EN 55024:1998 (Amended by A1:2001 and A2:2003)	IEC 61000-4-3:2008	1
Voltage Dips	EN 55024:1998 (Amended by A1:2001 and A2:2003)	IEC 61000-4-11:2004	1
Voltage Interruptions	EN 55024:1998 (Amended by A1:2001 and A2:2003)	IEC 61000-4-11:2004	3
Magnetic Field Immunity	EN 55024:1998 (Amended by A1:2001 and A2:2003)	IEC 61000-4-8:2001	1
EFT	EN 55024:1998 (Amended by A1:2001 and A2:2003)	IEC 61000-4-4:2004	3
Conducted Immunity	EN 55024:1998 (Amended by A1:2001 and A2:2003)	IEC 61000-4-6:2008	1
Surge	EN 55024:1998 (Amended by A1:2001 and A2:2003)	IEC 61000-4-5:2005	1
ESD	EN 55024:1998 (Amended by A1:2001 and A2:2003)	IEC 61000-4-2:2008	3
For explanation of performance criteria, see details on data sheets and in the performance criteria section of the test report.			

Modifications made to the product

See the Modifications section of this report

Test Facility

The measurement facility used to collect the data is located at:

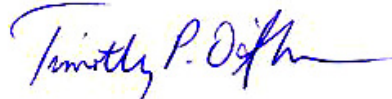
Northwest EMC, Inc.
14128 339th Avenue SE
Sultan, WA 98294

Phone: (503) 844-4066

Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834C-1).

Approved By:



Tim O'Shea, Operation Manager



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.



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Certificate of Test
Last Date of Test: June 05, 2009
Microsoft Corporation
Model: Zune HD

Immunity			
Test Description	Specification	Test Method	Performance Criteria
Radiated Immunity	Microsoft	IEC 61000-4-3:2008	1
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Voltage Interruptions	Microsoft	IEC 61000-4-11:2004	3
Magnetic Field Immunity	Microsoft	IEC 61000-4-8:2001	1
EFT	Microsoft	IEC 61000-4-4:2004	3
Conducted Immunity	Microsoft	IEC 61000-4-6:2008	1
Surge	Microsoft	IEC 61000-4-5:2005	4
ESD	Microsoft	IEC 61000-4-2:2008	3
For explanation of performance criteria, see details on data sheets and in the performance criteria section of the test report.			

Modifications made to the product
See the Modifications section of this report

Test Facility

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Revision History

Revision 05/05/03

Revision Number	Description	Date	Page Number
00	None		

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-Gen, Issue 2 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. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2*)



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.



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 (US0017). 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



KCC: Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)



SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>

How important is it to understand performance criteria?

It is the responsibility of the test laboratory to observe the results of the tests that are performed and to accurately report those results. As the responsible party (manufacturer, importer, etc) it is your responsibility to take those results, compare them against the specifications and standards, then, if appropriate make a declaration of conformity. As the responsible party it makes sense that you are fully aware of the requirements, how your device performs when tested to those requirements, and what information is being used to declare conformity.

To better assist you in making those conformity decisions, Northwest EMC has adopted a very simple, yet very clear performance assessment procedure. The following criteria is used when performing immunity or susceptibility tests:

Performance Criteria 1:

- ❑ The EUT exhibited no change in performance when operating as specified by the manufacturer. In this case no changes were observed during the test.
- ❑ In most cases this would be equivalent to Performance Criteria A. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, no changes were observed. Basically nothing happened.

Performance Criteria 2:

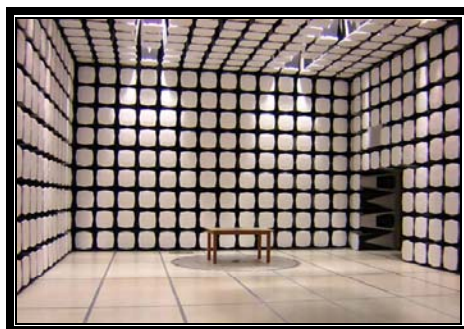
- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment recovered without any operator intervention, once the test signal was removed. The data sheets will detail the exact phenomena observed.
- ❑ In most cases this would be equivalent to Performance Criteria B. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT was able to recover from those changes without any operator intervention, once the test signal was removed.

Performance Criteria 3:

- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment required some operator intervention in order to recover. This intervention may be in the form of changing EUT settings, or even resetting the system. The data sheets will detail the exact phenomena observed.
- ❑ In most cases this would be equivalent to Performance Criteria C. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT required some sort of operator intervention to recover. There was no permanent damage and the EUT appeared to function normally after completion of test.

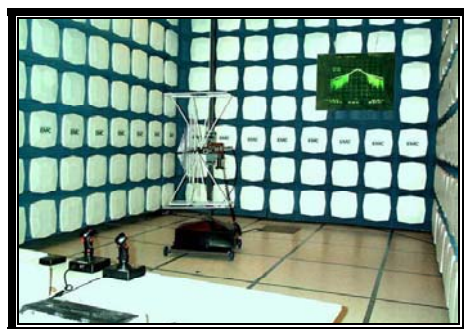
Performance Criteria 4:

- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment was damaged and would not recover. The data sheets will detail the exact phenomena observed.
- ❑ In most cases there is no specific criterion to compare this to; it typically ends the test. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. There was no recovery; the equipment would no longer function as intended.



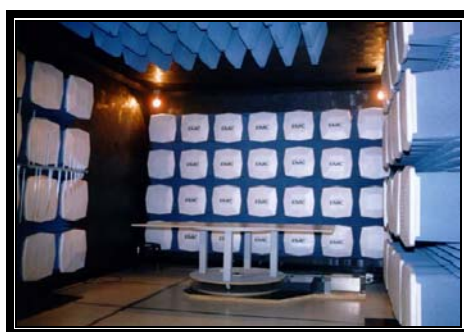
**California – Orange County Facility
Labs OC01 – OC13**

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:	James Wooten
Model:	Zune HD
First Date of Test:	May 21, 2009
Last Date of Test:	June 5 2009
Receipt Date of Samples:	May 20, 2009
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test**Functional Description of the EUT (Equipment Under Test):**

Personal Music Player

Testing Objective:

These tests were selected to satisfy the EMC requirements requested by the client.

EUT Photo



CONFIGURATION 1 MCSO1426**Software/Firmware Running during test**

Description	Version
Zune4	4.0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Zune HD	Microsoft	1395	000334491715
Zune HD	Microsoft	1395	000113291715
Zune HD	Microsoft	1402	000031391815

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Earbuds	No	1.3m	No	Zune HD	Speaker
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 2 MCSO1426**Software/Firmware Running during test**

Description	Version
Zune4	4.0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Zune HD	Microsoft	1395	000334491715
Zune HD	Microsoft	1395	000113291715
Zune HD	Microsoft	1402	000031391815
Power Supply	Delta	1128	00837702385
Power Supply	Delta	1128	002487005752

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Earbuds	No	1.3m	No	Zune HD	Speaker
Sync Cable	Yes	1.5m	No	Zune HD	Power Supply/Laptop
AC Extension Cable	No	0.8m	No	Power Supply	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 3 MCSO1426**Software/Firmware Running during test**

Description	Version
Zune4	4.0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Zune HD	Microsoft	1395	000334491715
Zune HD	Microsoft	1395	000113291715
Zune HD	Microsoft	1402	000031391815

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
Monitor	Dell	UltraScanP991	8164482
Laptop	Lenovo	7674-A16	L3-A6917 07/09
Laptop Power Supply	Lenovo	92P1213	11S92P1213Z1ZBGK79L2AK

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Earbuds	No	1.3m	No	Zune HD	Speaker
Sync Cable	Yes	1.5m	No	Zune HD	Power Supply/Laptop
Monitor AC Mains	Yes	1.8m	No	Monitor	AC Mains
VGA	PA	1.75m	PA	Monitor	Laptop
Laptop DC Leads	PA	1.8m	PA	Laptop	Laptop Power Supply
Laptop AC Mains	No	1.0m	No	Laptop	AC Mains

PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.

CONFIGURATION 4 MCSO1426**Software/Firmware Running during test**

Description	Version
Zune4	4.0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Zune HD	Microsoft	1395	000334491715
Zune HD	Microsoft	1395	000113291715
Zune HD	Microsoft	1402	000031391815
Power Supply	Delta	1128	00837702385
AV Dock	Microsoft	1396	091800099
AV Dock	Microsoft	1396	091800046
AV Dock	Microsoft	1396	091800087

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
Flat Panel Display	Dell	2408WFPb	MX-0G283H-74262-954-1UKS

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AV Dock USB	PA	1.5m	No	AV Dock	Power Supply/Laptop
AV Dock Antenna	PA	1.5m	No	AV Dock	Terminated
AV Cable	Yes	1.5m	No	AV Dock	Flat Panel Display
Flat Panel Display AC Mains	No	1.8m	No	Flat Panel Display	AC Mains
HDMI	Yes	2.0m	PA	AV Dock	Flat Panel Display
AC Extension Cable	No	0.8m	No	Power Supply	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 5 MCSO1426**Software/Firmware Running during test**

Description	Version
Zune4	4.0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Zune HD	Microsoft	1395	000112391715
Zune HD	Microsoft	1395	000113291715
Zune HD	Microsoft	1402	000031391815
Zune HD	Microsoft	1395	000334491715
Power Supply	Delta	1128	00837702385
AV Dock	Microsoft	1396	091800099
AV Dock	Microsoft	1396	091800046
AV Dock	Microsoft	1396	091800087
Power Supply	Delta	1128	002487005752

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
Flat Panel Display	Dell	2408WFPb	MX-0G283H-74262-954-1UKS

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AV Dock USB	PA	1.5m	No	AV Dock	Power Supply/Laptop
AV Dock Antenna	PA	1.5m	No	AV Dock	Terminated
Flat Panel Display AC Mains	No	1.8m	No	Flat Panel Display	AC Mains
HDMI	Yes	2.0m	PA	AV Dock	Flat Panel Display
AC Extension Cable	No	0.8m	No	Power Supply	AC Mains
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 6 MCSO1426**Software/Firmware Running during test**

Description	Version
Zune4	4.0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Zune HD	Microsoft	1395	000334491715
Zune HD	Microsoft	1395	000113291715
Zune HD	Microsoft	1402	000031391815
AV Dock	Microsoft	1396	091800099
AV Dock	Microsoft	1396	091800046
AV Dock	Microsoft	1396	091800087

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
Monitor	Dell	UltraScanP991	8164482
Laptop	Lenovo	7674-A16	L3-A6917 07/09
Laptop Power Supply	Lenovo	92P1213	11S92P1213Z1ZBGK79L2AK
Flat Panel Display	Dell	2408WFPb	MX-0G283H-74262-954-1UKS

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Monitor AC Mains	Yes	1.8m	No	Monitor	AC Mains
VGA	PA	1.75m	PA	Monitor	Laptop
Laptop DC Leads	PA	1.8m	PA	Laptop	Laptop Power Supply
Laptop AC Mains	No	1.0m	No	Laptop	AC Mains
AV Dock USB	PA	1.5m	No	AV Dock	Power Supply/Laptop
AV Dock Antenna	PA	1.5m	No	AV Dock	Terminated
AV Cable	Yes	1.5m	No	AV Dock	Flat Panel Display
Flat Panel Display AC Mains	No	1.8m	No	Flat Panel Display	AC Mains
HDMI	Yes	2.0m	PA	AV Dock	Flat Panel Display
PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown.					

CONFIGURATION 7 MCSO1426**Software/Firmware Running during test**

Description	Version
Zune4	4.0

EUT

Description	Manufacturer	Model/Part Number	Serial Number
Zune HD	Microsoft	1402	000031391815
AV Dock	Microsoft	1396	091800046

Peripherals in test setup boundary

Description	Manufacturer	Model/Part Number	Serial Number
Monitor	Dell	UltraScanP991	8164482
Laptop	Lenovo	7674-A16	L3-A6917 07/09
Laptop Power Supply	Lenovo	92P1213	11S92P1213Z1ZBGK79L2AK
External Speakers	XEOS	N/A	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Monitor AC Mains	Yes	1.8m	No	Monitor	AC Mains
VGA	PA	1.75m	PA	Monitor	Laptop
Laptop DC Leads	PA	1.8m	PA	Laptop	Laptop Power Supply
Laptop AC Mains	No	1.0m	No	Laptop	AC Mains
AV Dock USB	PA	1.5m	No	AV Dock	Power Supply/Laptop
AV Dock Antenna	PA	1.5m	No	AV Dock	Terminated
Ax Cable	No	0.7m	No	AV Dock	External Speakers
Audio Cable	No	0.2m	No	External Speakers	External Speakers

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	5/21/2009	Radiated Emissions – High Frequency	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	5/22/2009	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	5/29/2009	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.
4	5/29/2009	Radiated Immunity	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	6/1/2009	Conducted Immunity	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.
6	6/2/2009	Surge	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.
7	6/4/2009	EFT	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.
8	6/4/2009	Voltage Dips and Interrupts	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.
9	6/4/2009	Magnetic Field Immunity	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.
10	6/5/2009	ESD	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

EMC**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, 720p

AV Playback, Composite out

Syncing to laptop

AV Playback

POWER SETTINGS INVESTIGATED

Battery

120VAC/60Hz

230VAC/50Hz

CONFIGURATIONS INVESTIGATED

MCSO1426-1,2,3,4,5,6

FREQUENCY RANGE INVESTIGATED

Start Frequency

30 MHz

Stop Frequency

1000 MHz

CLOCKS AND OSCILLATORS

None Provided

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
Receiver	Schaffner	SCR 3501	ARD	3/23/2009	24 mo
Antenna, Log Periodic	EMCO	3146	ALE	1/14/2009	13 mo
Antenna, Bicon	EMCO	3104C	ABA	1/14/2009	13 mo

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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation 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.

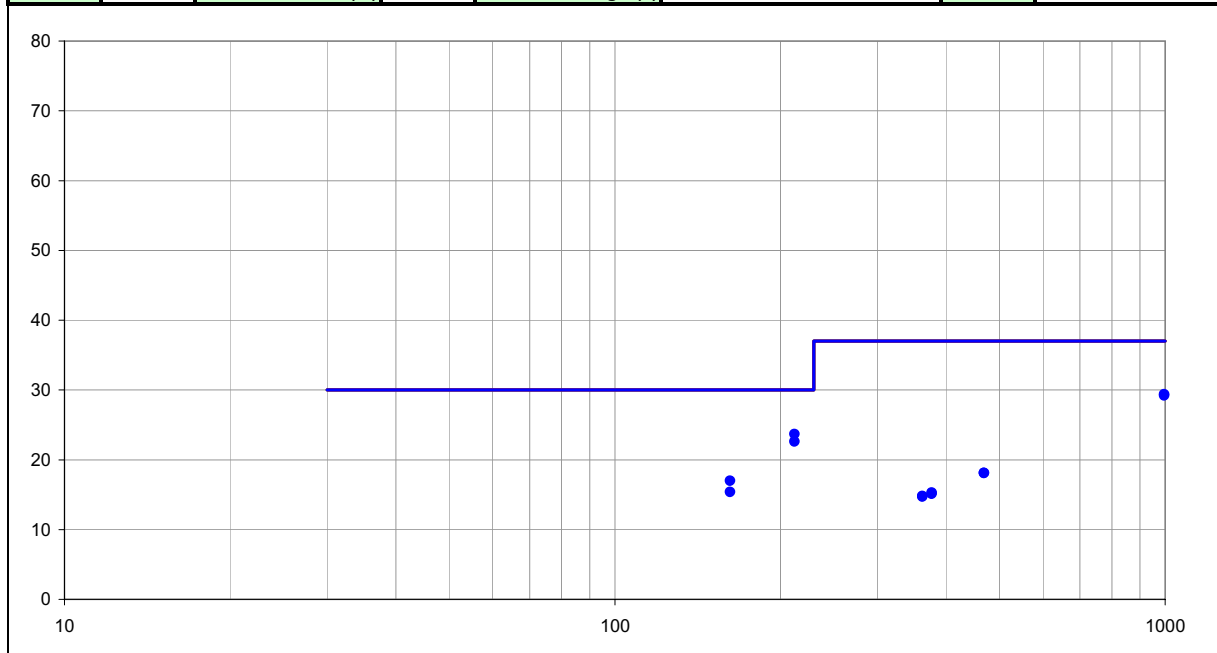
If measurements above 1 GHz were required, the test setup was modified to meet the regulatory requirements for higher frequency measurements. RF absorber was placed on the floor between the measurement antenna and EUT. Measurements were made at a 3 meter test distance with the EUT placed on a 0.8 meter high table. The level of emissions was maximized by varying the measurement antenna height from 1 to 4 meters, and rotating the turntable from 0 to 359 degrees. Both CISPR peak and average measurement detectors were used for comparison of the emissions to the peak and average specification limits.

EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/22/09		
Project:	None	Temperature:	22.6°C		
Job Site:	SU02	Humidity:	41		
Serial Number:	31391815	Barometric Pres.:	1020.5 mb		
				Tested by:	Kevin Cameron
EUT:	Zune HD				
Configuration:	1				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	Battery				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Stand alone device w/ premium earbuds				

Test Specifications				Test Method			
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)			
Run #	4	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



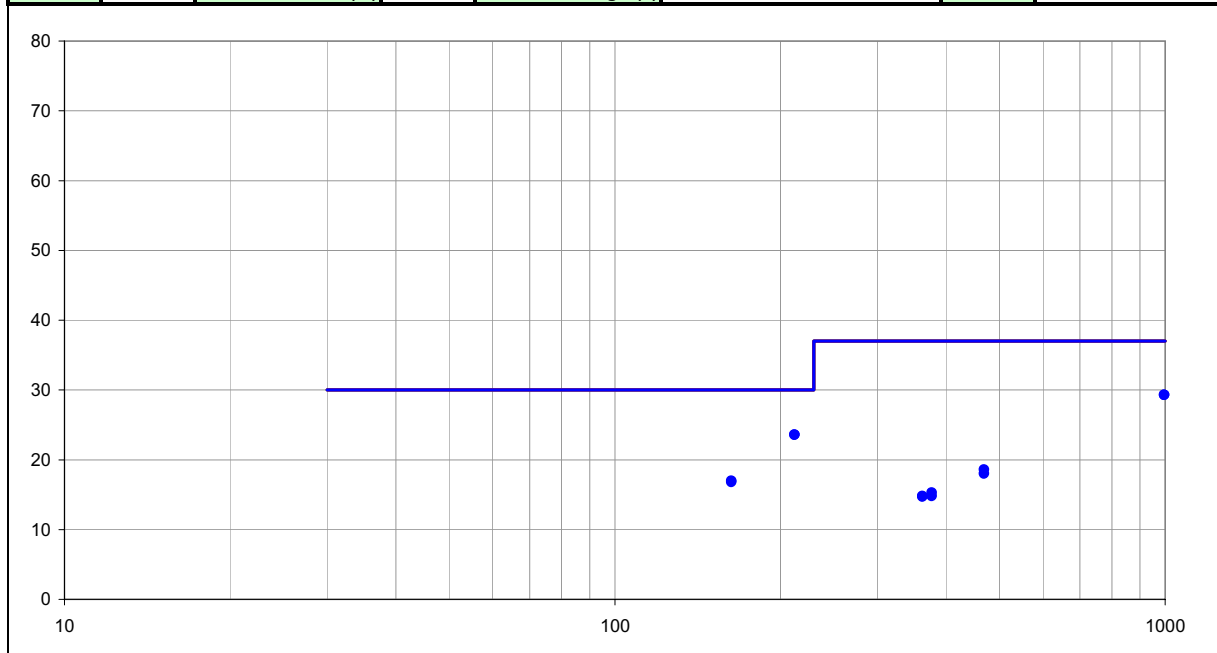
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
212.108	10.2	13.5	1.0	340.0	10.0	0.0	Vert	QP	0.0	23.7	30.0	-6.3
212.108	9.1	13.5	3.0	87.0	10.0	0.0	Horz	QP	0.0	22.6	30.0	-7.4
996.039	1.3	28.1	1.3	121.0	10.0	0.0	Horz	QP	0.0	29.4	37.0	-7.6
996.039	1.1	28.1	1.0	360.0	10.0	0.0	Vert	QP	0.0	29.2	37.0	-7.8
162.000	1.9	15.1	1.0	150.0	10.0	0.0	Vert	QP	0.0	17.0	30.0	-13.0
162.000	0.3	15.1	4.0	345.0	10.0	0.0	Horz	QP	0.0	15.4	30.0	-14.6
468.449	-2.3	20.4	1.5	219.0	10.0	0.0	Horz	QP	0.0	18.1	37.0	-18.9
468.449	-2.3	20.4	1.0	0.0	10.0	0.0	Vert	QP	0.0	18.1	37.0	-18.9
376.666	-3.3	18.6	1.0	130.0	10.0	0.0	Vert	QP	0.0	15.3	37.0	-21.7
376.666	-3.5	18.6	1.9	218.0	10.0	0.0	Horz	QP	0.0	15.1	37.0	-21.9
362.300	-3.6	18.4	2.0	130.0	10.0	0.0	Horz	QP	0.0	14.8	37.0	-22.2
362.300	-3.7	18.4	1.0	360.0	10.0	0.0	Vert	QP	0.0	14.7	37.0	-22.3

EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/22/09	 Tested by: Kevin Cameron
Project:	None	Temperature:	22.6°C	
Job Site:	SU02	Humidity:	41	
Serial Number:	334491715	Barometric Pres.:	1020.5 mb	
EUT:	Zune HD			
Configuration:	1			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	Battery			
Operating Mode:	AV Playback			
Deviations:	No deviations.			
Comments:	Stand alone device w/ premium earbuds			

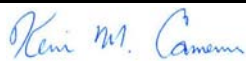
Test Specifications EN 55022: 2006 + A1:2007				Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)			
Run #	4	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



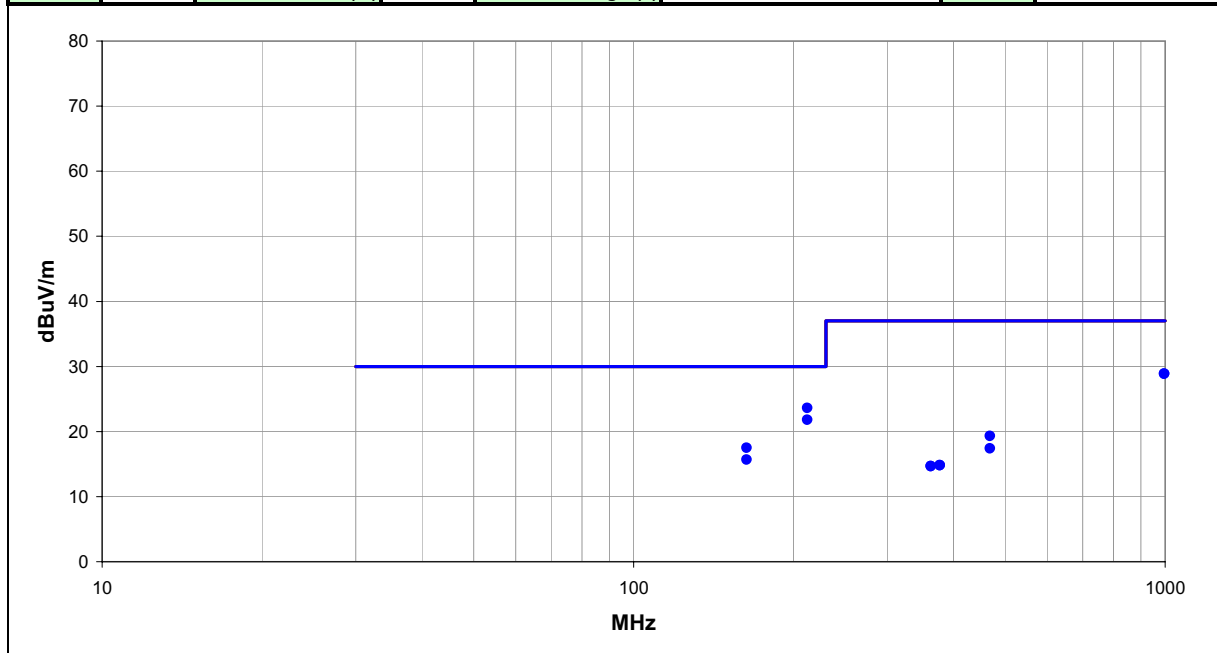
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
212.108	10.1	13.5	1.0	125.0	10.0	0.0	Vert	QP	0.0	23.6	30.0	-6.4
212.108	10.1	13.5	4.0	200.0	10.0	0.0	Horz	QP	0.0	23.6	30.0	-6.4
996.039	1.2	28.1	1.0	360.0	10.0	0.0	Horz	QP	0.0	29.3	37.0	-7.7
996.039	1.2	28.1	1.0	360.0	10.0	0.0	Vert	QP	0.0	29.3	37.0	-7.7
162.815	1.6	15.4	1.0	150.0	10.0	0.0	Vert	QP	0.0	17.0	30.0	-13.0
162.815	1.4	15.4	4.0	180.0	10.0	0.0	Horz	QP	0.0	16.8	30.0	-13.2
468.449	-1.8	20.4	1.0	340.0	10.0	0.0	Vert	QP	0.0	18.6	37.0	-18.4
468.449	-2.4	20.4	1.5	0.0	10.0	0.0	Horz	QP	0.0	18.0	37.0	-19.0
376.666	-3.3	18.6	1.0	79.0	10.0	0.0	Vert	QP	0.0	15.3	37.0	-21.7
362.300	-3.6	18.4	1.0	360.0	10.0	0.0	Vert	QP	0.0	14.8	37.0	-22.2
376.666	-3.8	18.6	1.4	273.0	10.0	0.0	Horz	QP	0.0	14.8	37.0	-22.2
362.300	-3.7	18.4	1.0	45.0	10.0	0.0	Horz	QP	0.0	14.7	37.0	-22.3

EMC

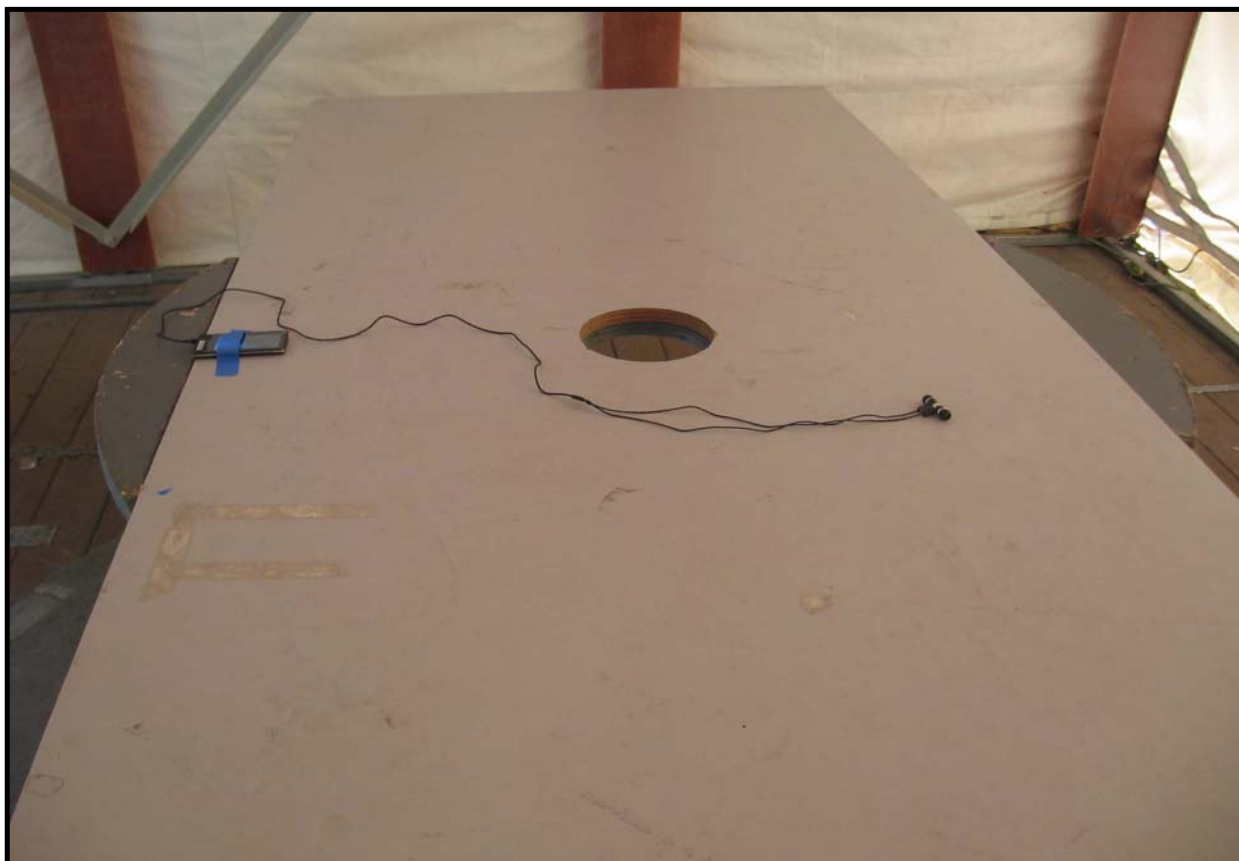
RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/22/09	
Project:	None	Temperature:	22.6°C	
Job Site:	SU02	Humidity:	41	
Serial Number:	113291715	Barometric Pres.:	1020.5 mb	Tested by: Kevin Cameron
EUT:	Zune HD			
Configuration:	1			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	Battery			
Operating Mode:	AV Playback			
Deviations:	No deviations.			
Comments:	Stand alone device w/ premium earbuds			

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	4	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
212.263	10.1	13.5	4.0	62.0	10.0	0.0	Horz	QP	0.0	23.6	30.0	-6.4
996.039	0.8	28.1	1.0	360.0	10.0	0.0	Vert	QP	0.0	28.9	37.0	-8.1
996.039	0.8	28.1	1.8	360.0	10.0	0.0	Horz	QP	0.0	28.9	37.0	-8.1
212.183	8.3	13.5	1.0	162.0	10.0	0.0	Vert	QP	0.0	21.8	30.0	-8.2
163.025	2.1	15.4	1.0	180.0	10.0	0.0	Vert	QP	0.0	17.5	30.0	-12.5
163.025	0.3	15.4	4.0	220.0	10.0	0.0	Horz	QP	0.0	15.7	30.0	-14.3
468.449	-1.1	20.4	1.3	332.0	10.0	0.0	Vert	QP	0.0	19.3	37.0	-17.7
468.449	-3.0	20.4	1.6	360.0	10.0	0.0	Horz	QP	0.0	17.4	37.0	-19.6
376.666	-3.8	18.6	1.0	109.0	10.0	0.0	Vert	QP	0.0	14.8	37.0	-22.2
376.666	-3.8	18.6	3.2	88.0	10.0	0.0	Horz	QP	0.0	14.8	37.0	-22.2
362.300	-3.7	18.4	1.0	109.0	10.0	0.0	Horz	QP	0.0	14.7	37.0	-22.3
362.300	-3.7	18.4	1.0	40.0	10.0	0.0	Vert	QP	0.0	14.7	37.0	-22.3



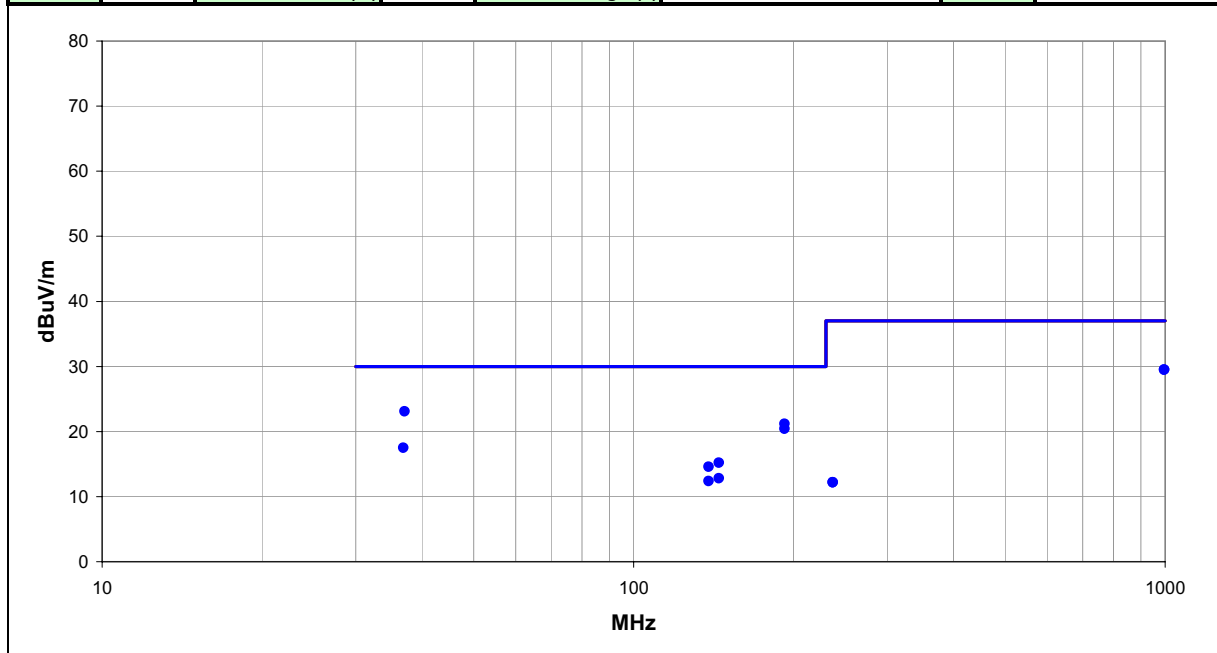


EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/22/09	<i>Kevin M. Cameron</i>
Project:	None	Temperature:	22.6°C	
Job Site:	SU02	Humidity:	41	
Serial Number:	113291715	Barometric Pres.:	1020.5 mb	Tested by: Kevin Cameron
EUT:	Zune HD			
Configuration:	2			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	230VAC/50Hz			
Operating Mode:	AV Playback			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, sync cable, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.			

Test Specifications					Test Method		
EN 55022: 2006 + A1:2007					CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	3	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



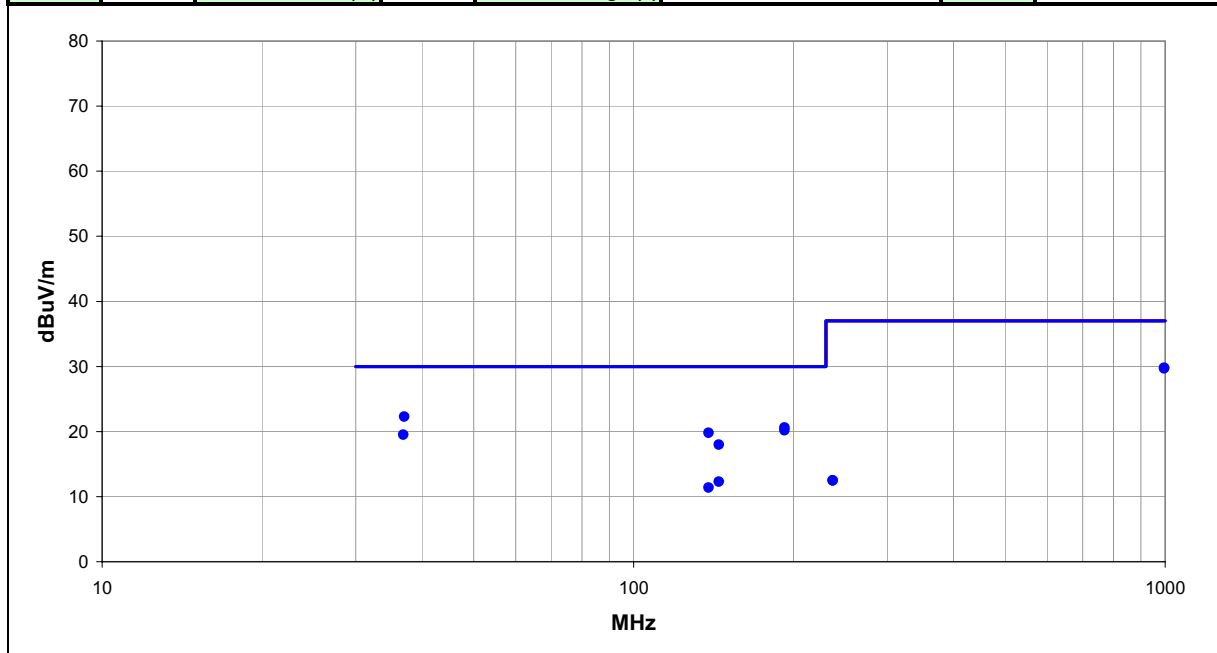
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
37.054	11.5	11.6	1.0	308.0	10.0	0.0	Vert	QP	0.0	23.1	30.0	-6.9
996.039	1.4	28.1	1.3	287.0	10.0	0.0	Vert	QP	0.0	29.5	37.0	-7.5
996.039	1.4	28.1	1.6	220.0	10.0	0.0	Horz	QP	0.0	29.5	37.0	-7.5
192.350	1.9	19.3	4.0	143.0	10.0	0.0	Horz	QP	0.0	21.2	30.0	-8.8
192.350	1.1	19.3	1.0	213.0	10.0	0.0	Vert	QP	0.0	20.4	30.0	-9.6
36.864	5.9	11.6	4.0	159.0	10.0	0.0	Horz	QP	0.0	17.5	30.0	-12.5
144.687	1.6	13.6	1.0	203.0	10.0	0.0	Vert	QP	0.0	15.2	30.0	-14.8
138.325	0.6	14.0	1.0	128.0	10.0	0.0	Vert	QP	0.0	14.6	30.0	-15.4
144.687	-0.8	13.6	4.0	229.0	10.0	0.0	Horz	QP	0.0	12.8	30.0	-17.2
138.325	-1.6	14.0	4.0	129.0	10.0	0.0	Horz	QP	0.0	12.4	30.0	-17.6
237.133	-1.6	13.8	1.0	239.0	10.0	0.0	Vert	QP	0.0	12.2	37.0	-24.8
237.133	-1.6	13.8	3.0	204.0	10.0	0.0	Horz	QP	0.0	12.2	37.0	-24.8

EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/22/09	<i>Kevin M. Cameron</i>
Project:	None	Temperature:	22.6°C	
Job Site:	SU02	Humidity:	41	
Serial Number:	334491715	Barometric Pres.:	1020.5 mb	Tested by: Kevin Cameron
EUT:	Zune HD			
Configuration:	2			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120VAC/60Hz			
Operating Mode:	AV Playback			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, sync cable, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.			

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	3	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
996.039	1.7	28.1	1.7	360.0	10.0	0.0	Vert	QP	0.0	29.8	37.0	-7.2
996.039	1.6	28.1	1.5	82.0	10.0	0.0	Horz	QP	0.0	29.7	37.0	-7.3
37.042	10.7	11.6	1.0	172.0	10.0	0.0	Vert	QP	0.0	22.3	30.0	-7.7
192.350	1.3	19.3	4.0	137.0	10.0	0.0	Horz	QP	0.0	20.6	30.0	-9.4
192.350	0.9	19.3	1.0	174.0	10.0	0.0	Vert	QP	0.0	20.2	30.0	-9.8
138.325	5.8	14.0	1.0	225.0	10.0	0.0	Vert	QP	0.0	19.8	30.0	-10.2
36.864	7.9	11.6	4.0	225.0	10.0	0.0	Horz	QP	0.0	19.5	30.0	-10.5
144.687	4.4	13.6	1.0	195.0	10.0	0.0	Vert	QP	0.0	18.0	30.0	-12.0
144.687	-1.3	13.6	4.0	217.0	10.0	0.0	Horz	QP	0.0	12.3	30.0	-17.7
138.325	-2.6	14.0	4.0	173.0	10.0	0.0	Horz	QP	0.0	11.4	30.0	-18.6
237.133	-1.3	13.8	1.0	360.0	10.0	0.0	Vert	QP	0.0	12.5	37.0	-24.5
237.133	-1.3	13.8	2.5	180.0	10.0	0.0	Horz	QP	0.0	12.5	37.0	-24.5

EMC

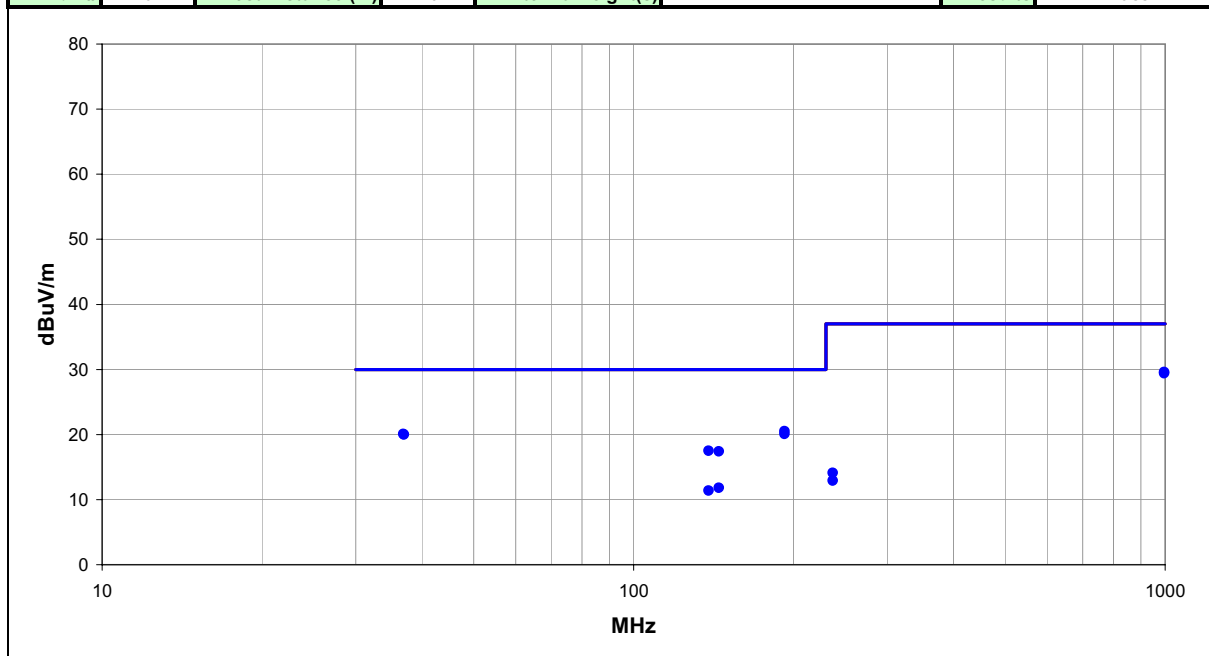
RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/22/09	<i>Kevin M. Cameron</i>
Project:	None	Temperature:	22.6°C	
Job Site:	SU02	Humidity:	41	
Serial Number:	31391815	Barometric Pres.:	1020.5 mb	
				Tested by: Kevin Cameron

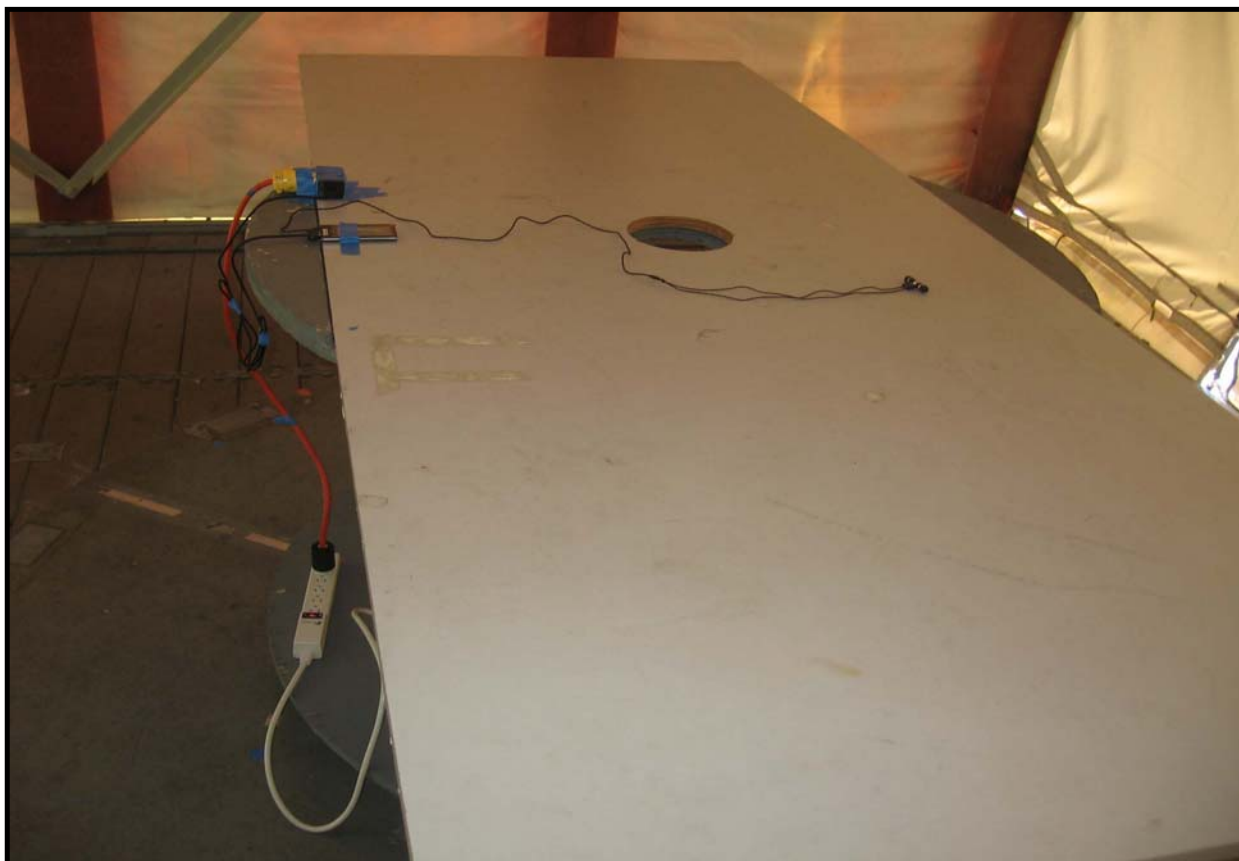
EUT:	Zune HD
Configuration:	2
Customer:	Microsoft Corporation
Attendees:	James Wooten
EUT Power:	120VAC/60Hz
Operating Mode:	AV Playback
Deviations:	No deviations.
Comments:	Device, premium earbuds, sync cable, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.

Test Specifications	Test Method
EN 55022: 2006 + A1:2007	CISPR 22:2005 (Amended by A1:2005 and A2:2006)

Run #	3	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
996.039	1.5	28.1	1.3	137.0	10.0	0.0	Vert	QP	0.0	29.6	37.0	-7.4
996.160	1.3	28.1	1.7	268.0	10.0	0.0	Horz	QP	0.0	29.4	37.0	-7.6
192.268	1.2	19.3	1.0	247.0	10.0	0.0	Vert	QP	0.0	20.5	30.0	-9.5
36.870	8.5	11.6	4.0	268.0	10.0	0.0	Horz	QP	0.0	20.1	30.0	-9.9
192.350	0.8	19.3	4.0	150.0	10.0	0.0	Horz	QP	0.0	20.1	30.0	-9.9
36.965	8.4	11.6	1.0	93.0	10.0	0.0	Vert	QP	0.0	20.0	30.0	-10.0
138.325	3.5	14.0	1.0	236.0	10.0	0.0	Vert	QP	0.0	17.5	30.0	-12.5
144.687	3.8	13.6	1.0	85.0	10.0	0.0	Vert	QP	0.0	17.4	30.0	-12.6
144.687	-1.8	13.6	4.0	113.0	10.0	0.0	Horz	QP	0.0	11.8	30.0	-18.2
138.325	-2.6	14.0	3.8	250.0	10.0	0.0	Horz	QP	0.0	11.4	30.0	-18.6
237.133	0.3	13.8	4.0	132.0	10.0	0.0	Horz	QP	0.0	14.1	37.0	-22.9
237.133	-0.9	13.8	1.0	68.0	10.0	0.0	Vert	QP	0.0	12.9	37.0	-24.1



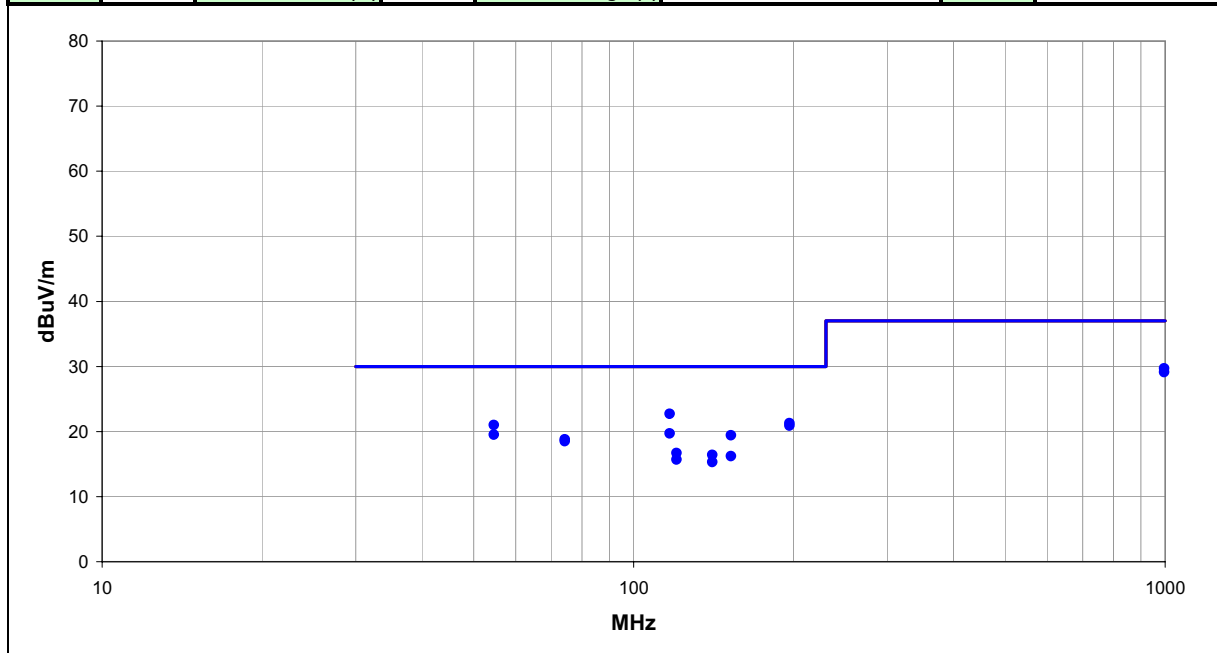


EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/27/09	
Project:	None	Temperature:	23.5°C	
Job Site:	SU02	Humidity:	40.3	
Serial Number:	000031391815	Barometric Pres.:	1024.9 mb	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	3			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120VAC/60Hz			
Operating Mode:	Syncing to laptop			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, sync cable, laptop, and monitor			

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	5	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



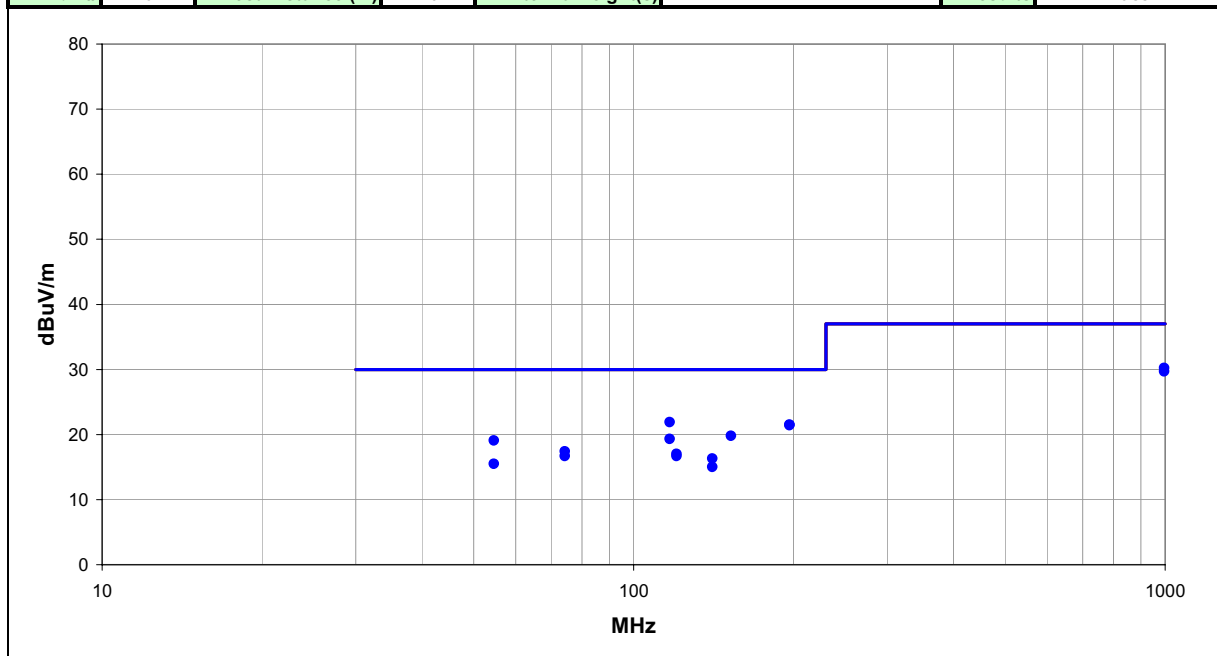
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
116.940	8.0	14.7	1.0	360.0	10.0	0.0	Vert	QP	0.0	22.7	30.0	-7.3
996.111	1.6	28.1	4.0	300.0	10.0	0.0	Horz	QP	0.0	29.7	37.0	-7.3
996.111	1.0	28.1	1.2	360.0	10.0	0.0	Vert	QP	0.0	29.1	37.0	-7.9
196.500	1.9	19.4	1.0	195.0	10.0	0.0	Vert	QP	0.0	21.3	30.0	-8.7
54.622	9.5	11.5	1.0	0.0	10.0	0.0	Vert	QP	0.0	21.0	30.0	-9.0
196.500	1.5	19.4	4.0	170.0	10.0	0.0	Horz	QP	0.0	20.9	30.0	-9.1
116.940	5.0	14.7	4.0	200.0	10.0	0.0	Horz	QP	0.0	19.7	30.0	-10.3
54.622	8.0	11.5	1.0	360.0	10.0	0.0	Horz	QP	0.0	19.5	30.0	-10.5
152.494	5.6	13.8	4.0	150.0	10.0	0.0	Horz	QP	0.0	19.4	30.0	-10.6
74.240	11.0	7.8	1.0	10.0	10.0	0.0	Vert	QP	0.0	18.8	30.0	-11.2
74.240	10.7	7.8	2.5	25.0	10.0	0.0	Horz	QP	0.0	18.5	30.0	-11.5
120.528	2.0	14.7	4.0	350.0	10.0	0.0	Horz	QP	0.0	16.7	30.0	-13.3
140.695	2.5	13.9	1.2	360.0	10.0	0.0	Vert	QP	0.0	16.4	30.0	-13.6
152.494	2.4	13.8	1.0	0.0	10.0	0.0	Vert	QP	0.0	16.2	30.0	-13.8
120.528	1.0	14.7	1.5	80.0	10.0	0.0	Vert	QP	0.0	15.7	30.0	-14.3
140.695	1.4	13.9	1.0	315.0	10.0	0.0	Horz	QP	0.0	15.3	30.0	-14.7

EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/27/09	
Project:	None	Temperature:	23.5°C	
Job Site:	SU07	Humidity:	40.3	
Serial Number:	113291715	Barometric Pres.:	1024.9 mb	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	3			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120VAC/60Hz			
Operating Mode:	Syncing to laptop			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, sync cable, laptop, and monitor			

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	6	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



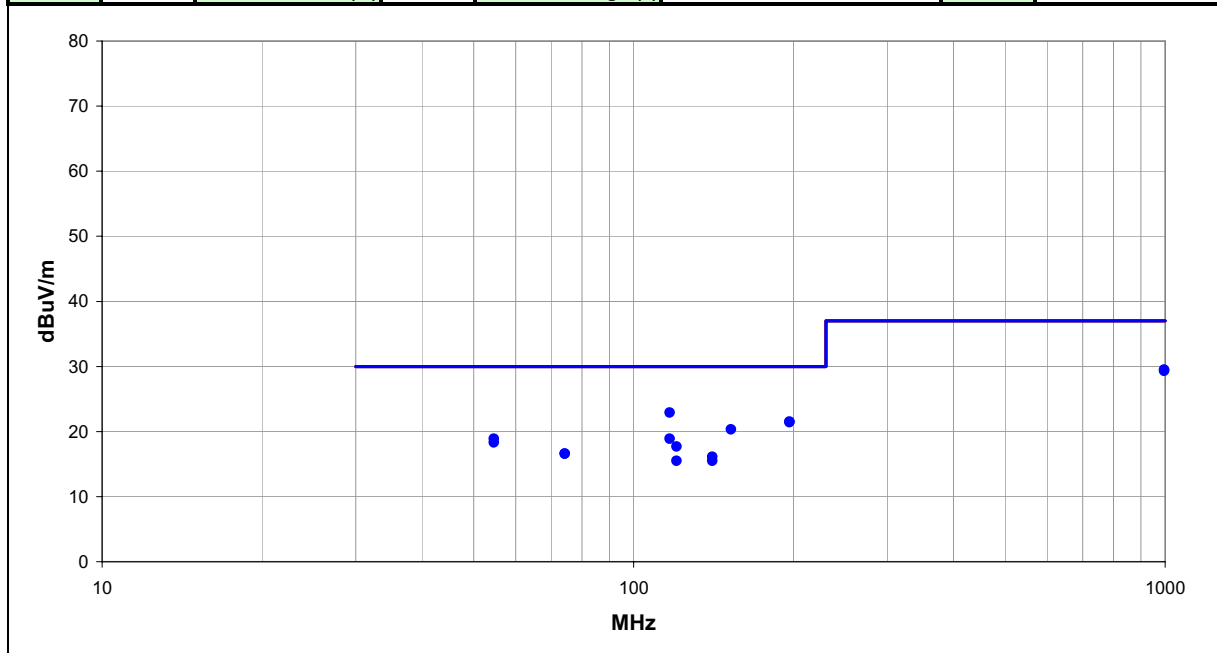
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
996.111	2.1	28.1	1.5	360.0	10.0	0.0	Vert	QP	0.0	30.2	37.0	-6.8
996.111	1.6	28.1	4.0	325.0	10.0	0.0	Vert	QP	0.0	29.7	37.0	-7.3
116.940	7.2	14.7	1.0	360.0	10.0	0.0	Vert	QP	0.0	21.9	30.0	-8.1
196.500	2.1	19.4	1.2	200.0	10.0	0.0	Vert	QP	0.0	21.5	30.0	-8.5
196.500	2.0	19.4	4.0	360.0	10.0	0.0	Horz	QP	0.0	21.4	30.0	-8.6
152.494	6.0	13.8	4.0	0.0	10.0	0.0	Horz	QP	0.0	19.8	30.0	-10.2
116.940	4.6	14.7	4.0	270.0	10.0	0.0	Horz	QP	0.0	19.3	30.0	-10.7
54.622	7.6	11.5	1.0	10.0	10.0	0.0	Vert	QP	0.0	19.1	30.0	-10.9
74.240	9.6	7.8	2.6	0.0	10.0	0.0	Horz	QP	0.0	17.4	30.0	-12.6
120.528	2.3	14.7	1.0	100.0	10.0	0.0	Vert	QP	0.0	17.0	30.0	-13.0
120.528	2.0	14.7	4.0	360.0	10.0	0.0	Horz	QP	0.0	16.7	30.0	-13.3
74.240	8.9	7.8	1.0	0.0	10.0	0.0	Vert	QP	0.0	16.7	30.0	-13.3
140.695	2.4	13.9	1.0	360.0	10.0	0.0	Vert	QP	0.0	16.3	30.0	-13.7
54.622	4.0	11.5	4.0	90.0	10.0	0.0	Horz	QP	0.0	15.5	30.0	-14.5
140.695	1.1	13.9	1.0	300.0	10.0	0.0	Horz	QP	0.0	15.0	30.0	-15.0

EMC

RADIATED EMISSIONS

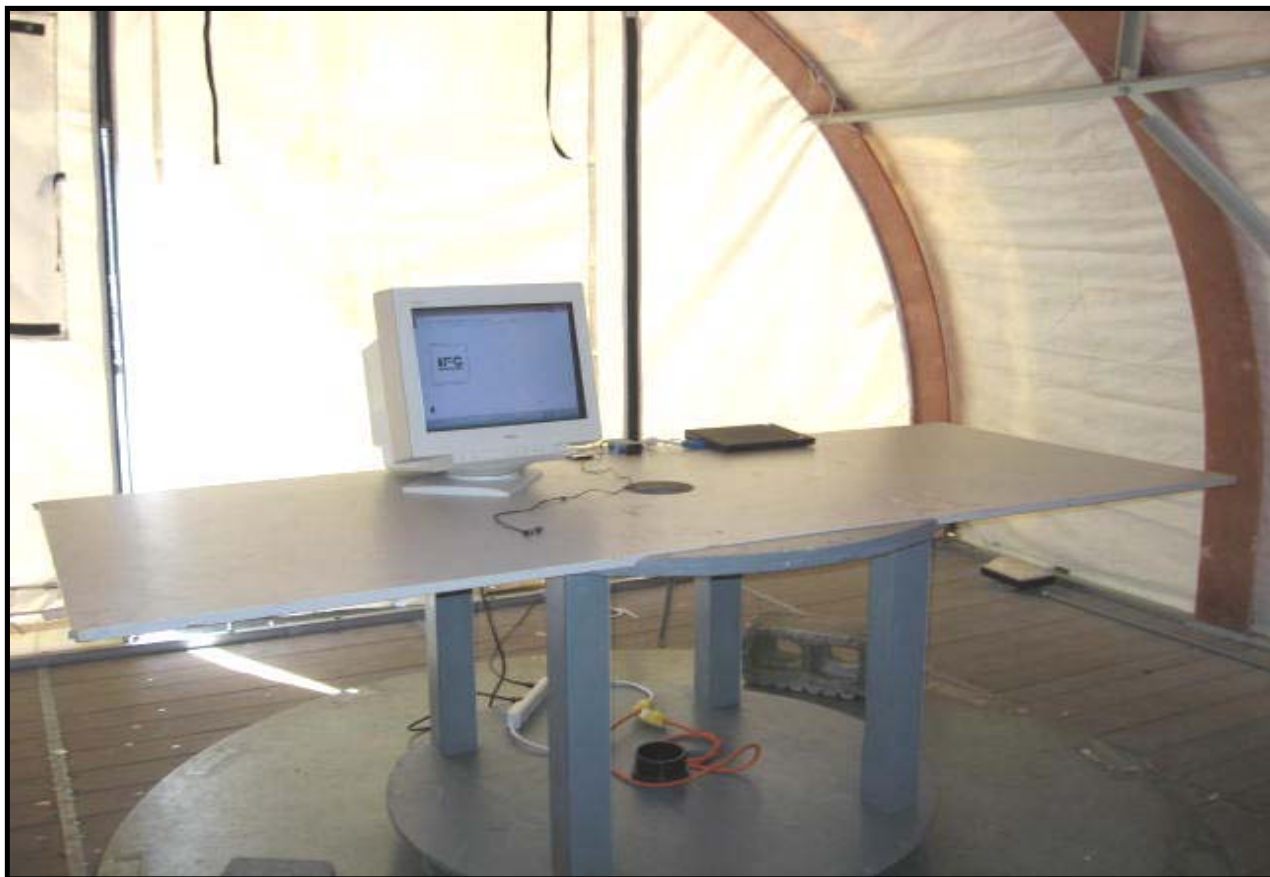
Work Order:	MCSO1426	Date:	05/27/09	
Project:	None	Temperature:	23.5°C	
Job Site:	SU02	Humidity:	40.3	
Serial Number:	000334491715	Barometric Pres.:	1024.9 mb	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	3			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	230VAC/50Hz			
Operating Mode:	Syncing to laptop			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, sync cable, laptop, and monitor			

Test Specifications				Test Method			
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)			
Run #	7	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
116.940	8.2	14.7	1.0	360.0	10.0	0.0	Vert	QP	0.0	22.9	30.0	-7.1
996.111	1.4	28.1	4.0	312.0	10.0	0.0	Horz	QP	0.0	29.5	37.0	-7.5
996.111	1.2	28.1	1.0	360.0	10.0	0.0	Vert	QP	0.0	29.3	37.0	-7.7
196.500	2.1	19.4	4.0	190.0	10.0	0.0	Horz	QP	0.0	21.5	30.0	-8.5
196.500	2.0	19.4	1.0	220.0	10.0	0.0	Vert	QP	0.0	21.4	30.0	-8.6
152.494	6.5	13.8	4.0	200.0	10.0	0.0	Horz	QP	0.0	20.3	30.0	-9.7
54.622	7.4	11.5	1.0	0.0	10.0	0.0	Vert	QP	0.0	18.9	30.0	-11.1
116.940	4.2	14.7	4.0	150.0	10.0	0.0	Horz	QP	0.0	18.9	30.0	-11.1
54.622	6.8	11.5	1.5	360.0	10.0	0.0	Horz	QP	0.0	18.3	30.0	-11.7
120.528	3.0	14.7	1.0	60.0	10.0	0.0	Vert	QP	0.0	17.7	30.0	-12.3
74.240	8.8	7.8	1.2	140.0	10.0	0.0	Vert	QP	0.0	16.6	30.0	-13.4
74.240	8.8	7.8	2.0	0.0	10.0	0.0	Horz	QP	0.0	16.6	30.0	-13.4
140.695	2.2	13.9	1.0	0.0	10.0	0.0	Vert	QP	0.0	16.1	30.0	-13.9
120.528	0.8	14.7	3.0	0.0	10.0	0.0	Horz	QP	0.0	15.5	30.0	-14.5
140.695	1.6	13.9	4.0	350.0	10.0	0.0	Horz	QP	0.0	15.5	30.0	-14.5





EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/28/09	
Project:	None	Temperature:	23.5°C	
Job Site:	SO02	Humidity:	40.3	
Serial Number:	00031391815	Barometric Pres.:	1024.9 mb	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	4			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120VAC/60Hz			
Operating Mode:	AV Playback, Composite out			
Deviations:	No deviations.			
Comments:	Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.			

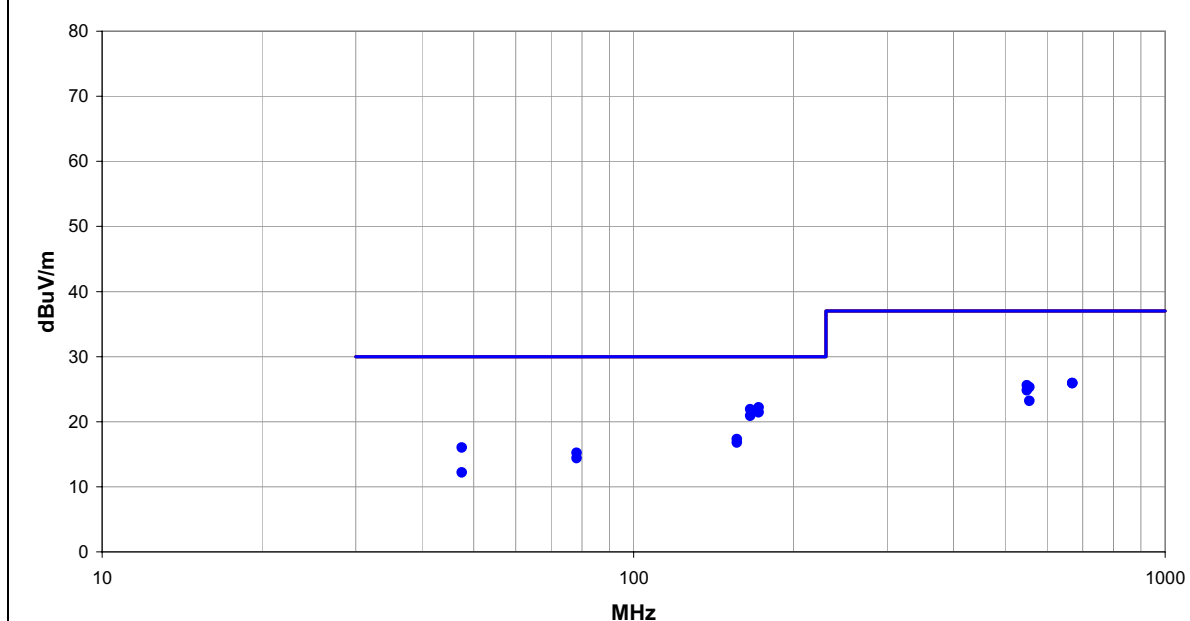
Test Specifications

EN 55022: 2006 + A1:2007

Test Method

CISPR 22:2005 (Amended by A1:2005 and A2:2006)

Run #	Zune HD	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass
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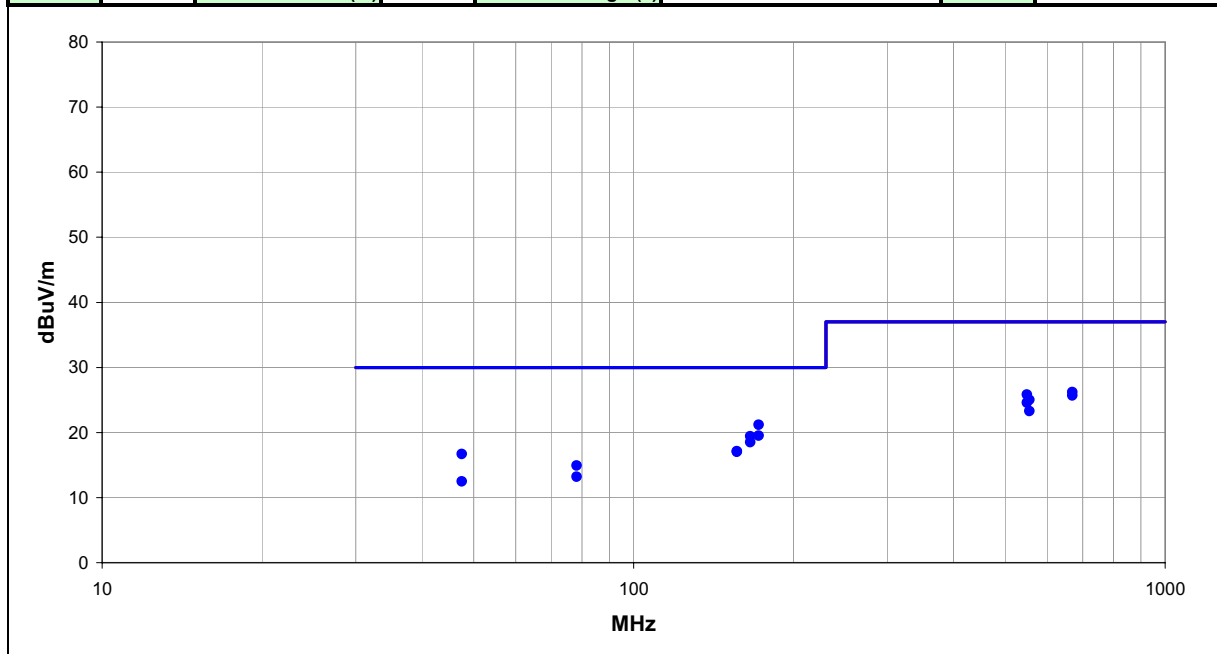
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
172.011	5.2	17.0	1.0	300.0	10.0	0.0	Vert	QP	0.0	22.2	30.0	-7.8
165.890	6.0	15.9	1.2	0.0	10.0	0.0	Vert	QP	0.0	21.9	30.0	-8.1
172.011	4.4	17.0	2.0	180.0	10.0	0.0	Horz	QP	0.0	21.4	30.0	-8.6
165.890	5.0	15.9	3.0	325.0	10.0	0.0	Horz	QP	0.0	20.9	30.0	-9.1
669.557	2.0	23.9	3.0	0.0	10.0	0.0	Horz	QP	0.0	25.9	37.0	-11.1
669.557	2.0	23.9	1.0	55.0	10.0	0.0	Vert	QP	0.0	25.9	37.0	-11.1
549.847	4.0	21.6	4.0	100.0	10.0	0.0	Horz	QP	0.0	25.6	37.0	-11.4
555.921	3.6	21.7	1.2	300.0	10.0	0.0	Vert	QP	0.0	25.3	37.0	-11.7
549.847	3.2	21.6	1.0	0.0	10.0	0.0	Vert	QP	0.0	24.8	37.0	-12.2
156.446	3.1	14.2	1.0	360.0	10.0	0.0	Vert	QP	0.0	17.3	30.0	-12.7
156.446	2.6	14.2	4.0	5.0	10.0	0.0	Horz	QP	0.0	16.8	30.0	-13.2
555.921	1.5	21.7	2.5	210.0	10.0	0.0	Horz	QP	0.0	23.2	37.0	-13.8
47.525	4.0	12.0	1.0	75.0	10.0	0.0	Vert	QP	0.0	16.0	30.0	-14.0
78.134	7.8	7.4	2.0	200.0	10.0	0.0	Horz	QP	0.0	15.2	30.0	-14.8
78.134	7.0	7.4	1.0	360.0	10.0	0.0	Vert	QP	0.0	14.4	30.0	-15.6
47.525	0.2	12.0	4.0	105.0	10.0	0.0	Horz	QP	0.0	12.2	30.0	-17.8

EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/28/09	
Project:	None	Temperature:	23.5°C	
Job Site:	SO02	Humidity:	40.3	
Serial Number:	3344491715	Barometric Pres.:	1024.9 mb	
		Tested by:		Travis Rychener
EUT:	Zune HD			
Configuration:	4			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120VAC/60Hz			
Operating Mode:	AV Playback, Composite out			
Deviations:	No deviations.			
Comments:	Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800099, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.			

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	9	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



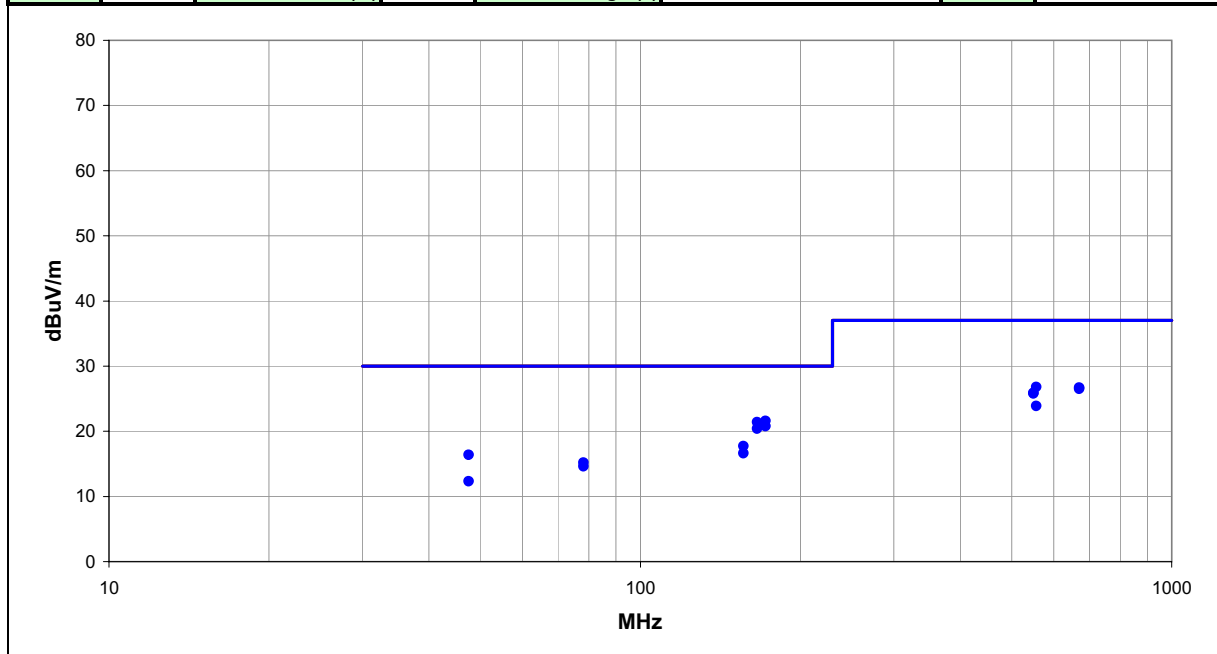
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
172.011	4.2	17.0	2.5	185.0	10.0	0.0	Horz	QP	0.0	21.2	30.0	-8.8
172.011	2.5	17.0	1.0	320.0	10.0	0.0	Vert	QP	0.0	19.5	30.0	-10.5
165.890	3.5	15.9	4.0	330.0	10.0	0.0	Horz	QP	0.0	19.4	30.0	-10.6
669.557	2.3	23.9	4.0	360.0	10.0	0.0	Horz	QP	0.0	26.2	37.0	-10.8
549.847	4.2	21.6	4.0	55.0	10.0	0.0	Horz	QP	0.0	25.8	37.0	-11.2
669.557	1.8	23.9	1.0	55.0	10.0	0.0	Vert	QP	0.0	25.7	37.0	-11.3
165.890	2.6	15.9	1.5	22.0	10.0	0.0	Vert	QP	0.0	18.5	30.0	-11.5
555.921	3.3	21.7	1.0	300.0	10.0	0.0	Vert	QP	0.0	25.0	37.0	-12.0
549.847	3.0	21.6	1.2	360.0	10.0	0.0	Vert	QP	0.0	24.6	37.0	-12.4
156.446	2.9	14.2	1.2	360.0	10.0	0.0	Vert	QP	0.0	17.1	30.0	-12.9
156.446	2.8	14.2	4.0	0.0	10.0	0.0	Horz	QP	0.0	17.0	30.0	-13.0
47.525	4.7	12.0	1.3	80.0	10.0	0.0	Vert	QP	0.0	16.7	30.0	-13.3
555.921	1.6	21.7	4.0	150.0	10.0	0.0	Horz	QP	0.0	23.3	37.0	-13.7
78.134	7.5	7.4	1.0	0.0	10.0	0.0	Vert	QP	0.0	14.9	30.0	-15.1
78.134	5.8	7.4	2.0	150.0	10.0	0.0	Horz	QP	0.0	13.2	30.0	-16.8
47.525	0.5	12.0	4.0	0.0	10.0	0.0	Horz	QP	0.0	12.5	30.0	-17.5

EMC

RADIATED EMISSIONS

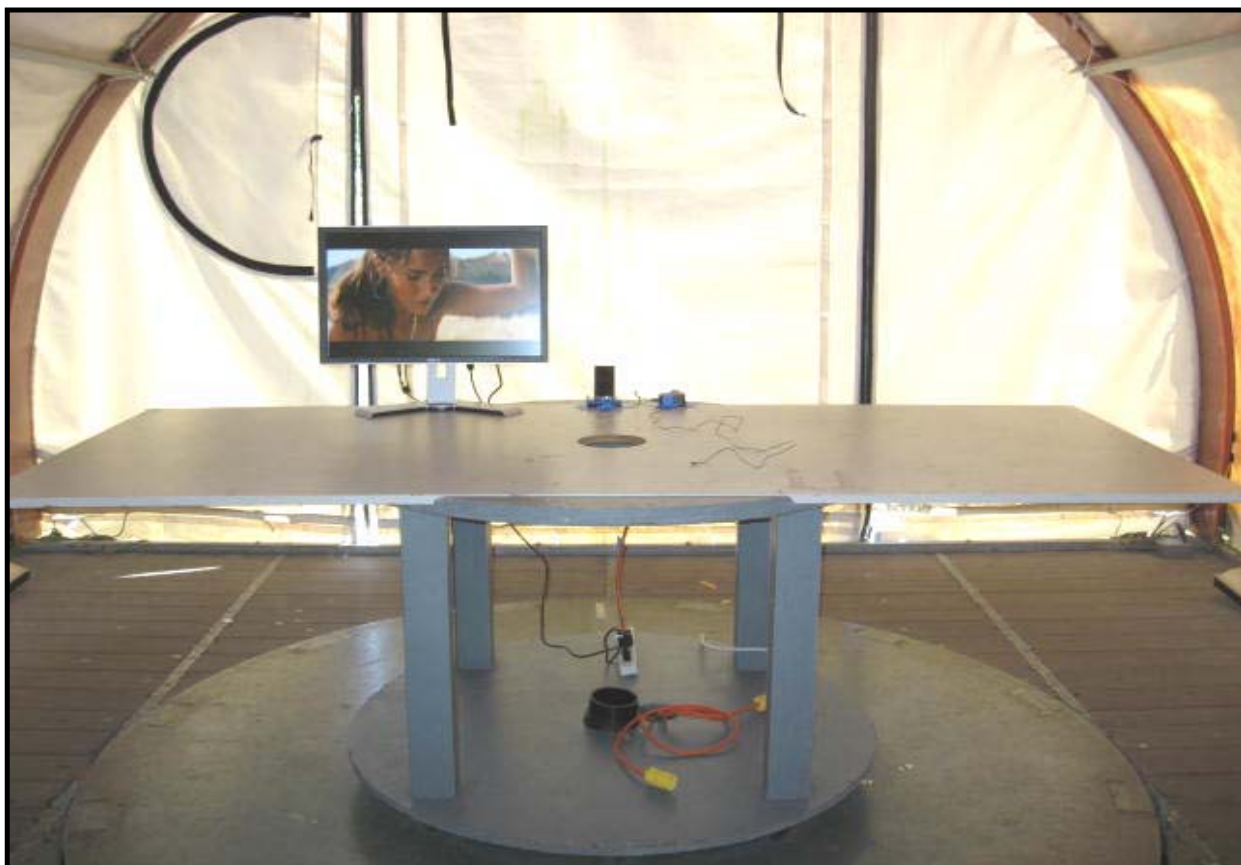
Work Order:	MCSO1426	Date:	05/28/09	
Project:	None	Temperature:	23.5°C	
Job Site:	SO02	Humidity:	40.3	
Serial Number:	113291715	Barometric Pres.:	1024.9 mb	
		Tested by:		Travis Rychener
EUT:	Zune HD			
Configuration:	4			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	230VAC/50Hz			
Operating Mode:	AV Playback, Composite out			
Deviations:	No deviations.			
Comments:	Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800087, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.			

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	10	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
172.011	4.6	17.0	1.0	305.0	10.0	0.0	Vert	QP	0.0	21.6	30.0	-8.4
165.890	5.5	15.9	1.0	360.0	10.0	0.0	Vert	QP	0.0	21.4	30.0	-8.6
172.011	3.8	17.0	4.0	190.0	10.0	0.0	Horz	QP	0.0	20.8	30.0	-9.2
165.890	4.5	15.9	3.5	360.0	10.0	0.0	Horz	QP	0.0	20.4	30.0	-9.6
555.921	5.1	21.7	1.0	280.0	10.0	0.0	Vert	QP	0.0	26.8	37.0	-10.2
669.557	2.8	23.9	4.0	0.0	10.0	0.0	Horz	QP	0.0	26.7	37.0	-10.3
669.557	2.6	23.9	1.0	50.0	10.0	0.0	Vert	QP	0.0	26.5	37.0	-10.5
549.847	4.3	21.6	1.0	300.0	10.0	0.0	Vert	QP	0.0	25.9	37.0	-11.1
549.847	4.2	21.6	4.0	155.0	10.0	0.0	Horz	QP	0.0	25.8	37.0	-11.2
156.446	3.5	14.2	1.0	360.0	10.0	0.0	Vert	QP	0.0	17.7	30.0	-12.3
555.921	2.2	21.7	4.0	215.0	10.0	0.0	Horz	QP	0.0	23.9	37.0	-13.1
156.446	2.4	14.2	4.0	45.0	10.0	0.0	Horz	QP	0.0	16.6	30.0	-13.4
47.525	4.4	12.0	1.5	0.0	10.0	0.0	Vert	QP	0.0	16.4	30.0	-13.6
78.134	7.8	7.4	1.0	360.0	10.0	0.0	Vert	QP	0.0	15.2	30.0	-14.8
78.134	7.2	7.4	4.0	210.0	10.0	0.0	Horz	QP	0.0	14.6	30.0	-15.4
47.525	0.3	12.0	4.0	0.0	10.0	0.0	Horz	QP	0.0	12.3	30.0	-17.7



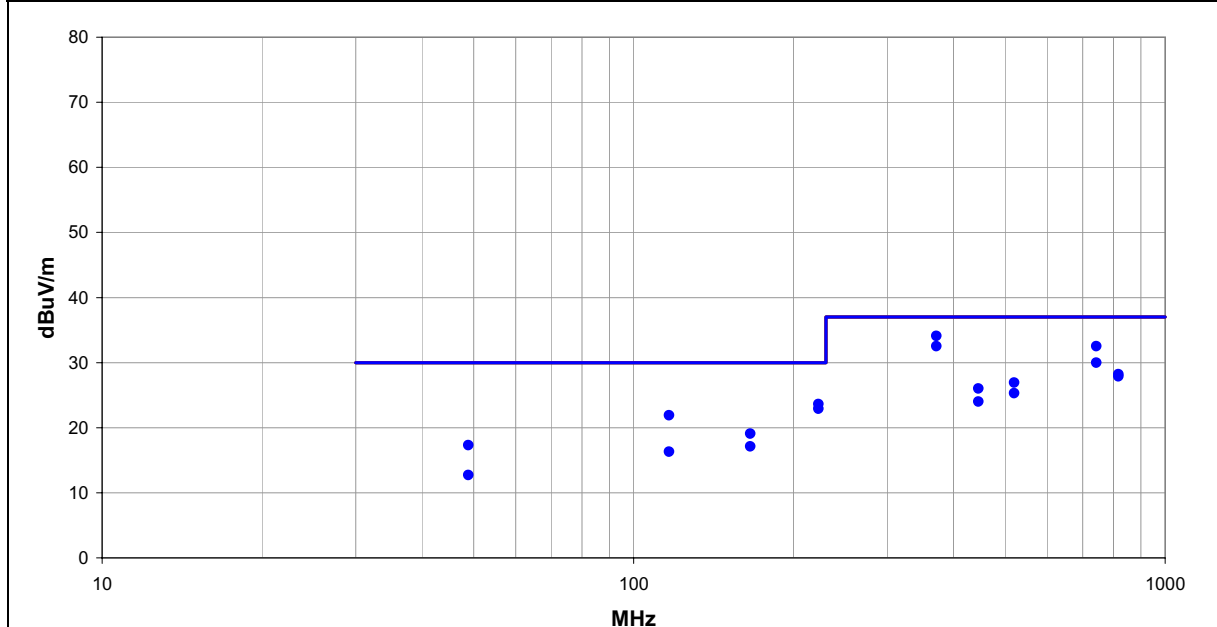


EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/28/09		
Project:	None	Temperature:	22.6°C		
Job Site:	SU02	Humidity:	41		
Serial Number:	31391815	Barometric Pres.:	1020.5 mb		
				Tested by:	Travis Rychener
EUT:	Zune HD				
Configuration:	5				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	230VAC/50Hz				
Operating Mode:	AV Playback, 720p				
Deviations:	Not all ports were populated with cables during the radiated emissions measurements.				
Comments:	Device, HDMI cable to TV, AV dock sn: 091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385. Removed AV cable.				

Test Specifications EN 55022: 2006 + A1:2007	Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)
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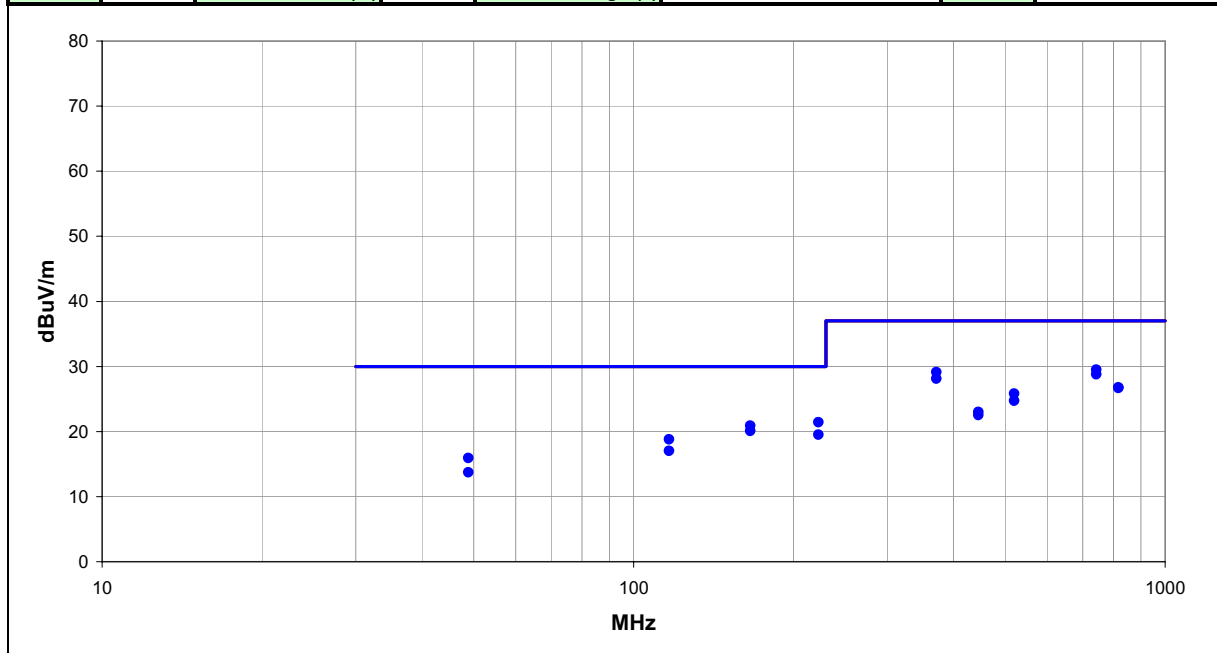
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
371.250	15.5	18.6	1.0	13.0	10.0	0.0	Vert	QP	0.0	34.1	37.0	-2.9
371.248	13.9	18.6	2.5	165.0	10.0	0.0	Horz	QP	0.0	32.5	37.0	-4.5
742.500	7.6	24.9	1.0	40.0	10.0	0.0	Vert	QP	0.0	32.5	37.0	-4.5
222.750	10.3	13.3	1.0	90.0	10.0	0.0	Vert	QP	0.0	23.6	30.0	-6.4
742.500	5.1	24.9	2.0	185.0	10.0	0.0	Horz	QP	0.0	30.0	37.0	-7.0
222.750	9.6	13.3	4.0	55.0	10.0	0.0	Horz	QP	0.0	22.9	30.0	-7.1
116.594	7.2	14.7	1.0	0.0	10.0	0.0	Vert	QP	0.0	21.9	30.0	-8.1
816.750	2.3	25.9	1.2	0.0	10.0	0.0	Horz	QP	0.0	28.2	37.0	-8.8
816.750	2.0	25.9	2.8	0.0	10.0	0.0	Horz	QP	0.0	27.9	37.0	-9.1
519.750	5.6	21.3	1.0	360.0	10.0	0.0	Vert	QP	0.0	26.9	37.0	-10.1
165.888	3.2	15.9	1.0	360.0	10.0	0.0	Vert	QP	0.0	19.1	30.0	-10.9
445.498	6.0	20.0	1.0	70.0	10.0	0.0	Vert	QP	0.0	26.0	37.0	-11.0
519.750	4.0	21.3	2.0	310.0	10.0	0.0	Horz	QP	0.0	25.3	37.0	-11.7
48.849	5.4	11.9	1.0	290.0	10.0	0.0	Vert	QP	0.0	17.3	30.0	-12.7
165.888	1.2	15.9	4.0	85.0	10.0	0.0	Horz	QP	0.0	17.1	30.0	-12.9
445.498	4.0	20.0	4.0	40.0	10.0	0.0	Horz	QP	0.0	24.0	37.0	-13.0
116.594	1.6	14.7	4.0	315.0	10.0	0.0	Horz	QP	0.0	16.3	30.0	-13.7
48.849	0.8	11.9	4.0	0.0	10.0	0.0	Horz	QP	0.0	12.7	30.0	-17.3

EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09		
Project:	None	Temperature:	22.6°C		
Job Site:	SU02	Humidity:	41		
Serial Number:	3344491715	Barometric Pres.:	1020.5 mb		
				Tested by:	Travis Rychener
EUT:	Zune HD				
Configuration:	5				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120VAC/60Hz				
Operating Mode:	AV Playback, 720p				
Deviations:	Not all ports were populated with cables during the radiated emissions measurements.				
Comments:	Device, HDMI cable to TV, AV dock sn: 091800099, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385				

Test Specifications					Test Method		
EN 55022: 2006 + A1:2007					CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	15	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



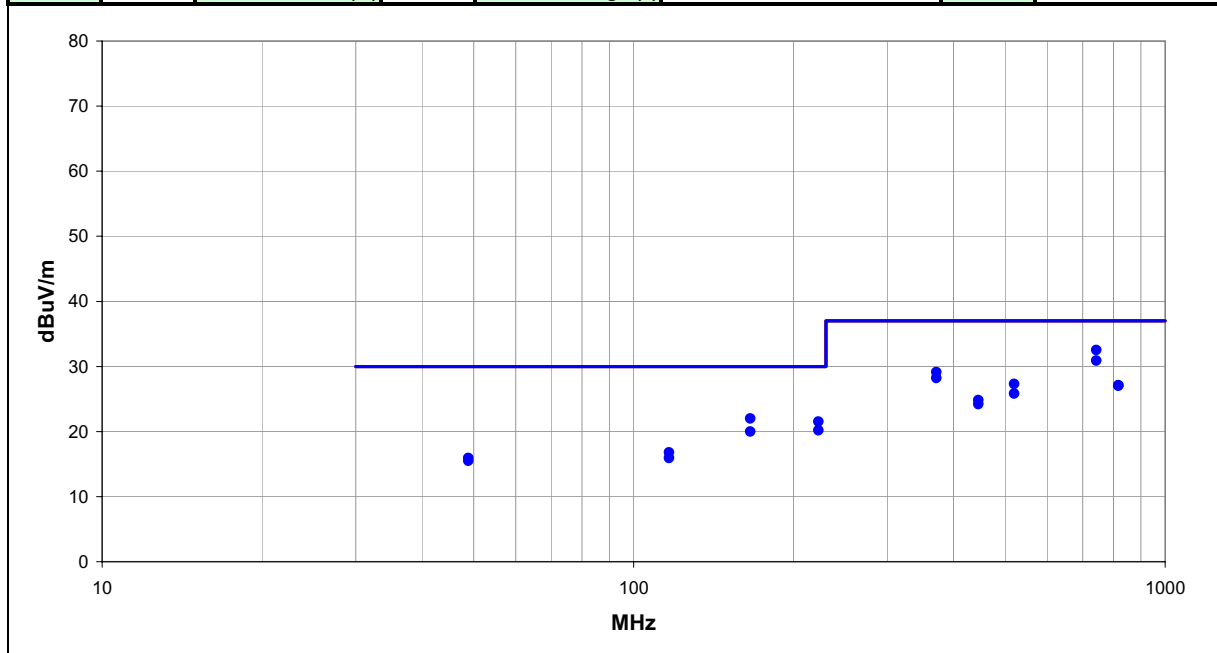
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
742.500	4.6	24.9	1.5	320.0	10.0	0.0	Vert	QP	0.0	29.5	37.0	-7.5
371.250	10.5	18.6	1.0	85.0	10.0	0.0	Vert	QP	0.0	29.1	37.0	-7.9
742.500	3.9	24.9	4.0	160.0	10.0	0.0	Horz	QP	0.0	28.8	37.0	-8.2
222.750	8.1	13.3	1.0	300.0	10.0	0.0	Vert	QP	0.0	21.4	30.0	-8.6
371.250	9.5	18.6	3.0	50.0	10.0	0.0	Horz	QP	0.0	28.1	37.0	-8.9
165.888	5.0	15.9	1.0	360.0	10.0	0.0	Vert	QP	0.0	20.9	30.0	-9.1
165.888	4.2	15.9	4.0	195.0	10.0	0.0	Horz	QP	0.0	20.1	30.0	-9.9
816.750	0.9	25.9	4.0	30.0	10.0	0.0	Horz	QP	0.0	26.8	37.0	-10.2
816.750	0.8	25.9	1.2	110.0	10.0	0.0	Vert	QP	0.0	26.7	37.0	-10.3
222.750	6.2	13.3	4.0	45.0	10.0	0.0	Horz	QP	0.0	19.5	30.0	-10.5
116.594	4.1	14.7	1.0	0.0	10.0	0.0	Vert	QP	0.0	18.8	30.0	-11.2
519.750	4.5	21.3	1.0	75.0	10.0	0.0	Vert	QP	0.0	25.8	37.0	-11.2
519.750	3.4	21.3	3.0	200.0	10.0	0.0	Horz	QP	0.0	24.7	37.0	-12.3
116.594	2.3	14.7	4.0	0.0	10.0	0.0	Horz	QP	0.0	17.0	30.0	-13.0
445.455	3.0	20.0	1.0	190.0	10.0	0.0	Vert	QP	0.0	23.0	37.0	-14.0
48.849	4.0	11.9	1.5	300.0	10.0	0.0	Vert	QP	0.0	15.9	30.0	-14.1
445.455	2.5	20.0	4.0	230.0	10.0	0.0	Horz	QP	0.0	22.5	37.0	-14.5
48.849	1.8	11.9	4.0	0.0	10.0	0.0	Horz	QP	0.0	13.7	30.0	-16.3

EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09		
Project:	None	Temperature:	22.6°C		
Job Site:	SU02	Humidity:	41		
Serial Number:	113291715	Barometric Pres.:	1020.5 mb		
				Tested by:	Travis Rychener
EUT:	Zune HD				
Configuration:	5				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120VAC/60Hz				
Operating Mode:	AV Playback, 720p				
Deviations:	Not all ports were populated with cables during the radiated emissions measurements.				
Comments:	Device, HDMI cable to TV, AV dock sn: 091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385				

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	16	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
742.500	7.6	24.9	1.0	125.0	10.0	0.0	Horz	QP	0.0	32.5	37.0	-4.5
742.500	6.0	24.9	1.0	350.0	10.0	0.0	Vert	QP	0.0	30.9	37.0	-6.1
371.250	10.5	18.6	1.0	245.0	10.0	0.0	Vert	QP	0.0	29.1	37.0	-7.9
165.888	6.1	15.9	1.5	100.0	10.0	0.0	Vert	QP	0.0	22.0	30.0	-8.0
222.750	8.2	13.3	1.0	190.0	10.0	0.0	Vert	QP	0.0	21.5	30.0	-8.5
371.250	9.6	18.6	2.5	360.0	10.0	0.0	Horz	QP	0.0	28.2	37.0	-8.8
519.750	6.0	21.3	2.5	175.0	10.0	0.0	Horz	QP	0.0	27.3	37.0	-9.7
222.750	6.9	13.3	4.0	60.0	10.0	0.0	Horz	QP	0.0	20.2	30.0	-9.8
816.750	1.2	25.9	1.0	150.0	10.0	0.0	Vert	QP	0.0	27.1	37.0	-9.9
165.888	4.1	15.9	4.0	280.0	10.0	0.0	Horz	QP	0.0	20.0	30.0	-10.0
816.750	1.1	25.9	2.0	225.0	10.0	0.0	Horz	QP	0.0	27.0	37.0	-10.0
519.750	4.5	21.3	1.0	360.0	10.0	0.0	Vert	QP	0.0	25.8	37.0	-11.2
445.501	4.8	20.0	1.0	60.0	10.0	0.0	Vert	QP	0.0	24.8	37.0	-12.2
445.501	4.2	20.0	3.0	70.0	10.0	0.0	Horz	QP	0.0	24.2	37.0	-12.8
116.594	2.1	14.7	1.2	230.0	10.0	0.0	Vert	QP	0.0	16.8	30.0	-13.2
48.849	4.0	11.9	1.0	140.0	10.0	0.0	Vert	QP	0.0	15.9	30.0	-14.1
116.594	1.2	14.7	4.0	0.0	10.0	0.0	Horz	QP	0.0	15.9	30.0	-14.1
48.849	3.6	11.9	3.2	50.0	10.0	0.0	Horz	QP	0.0	15.5	30.0	-14.5

EMC

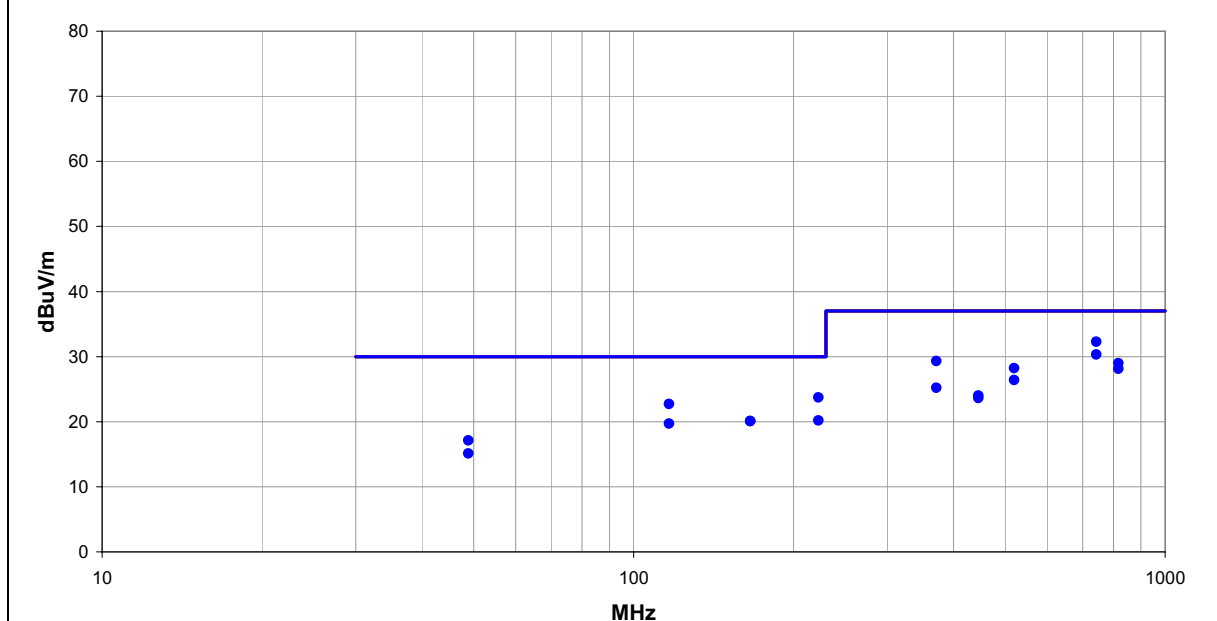
RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	06/02/09	
Project:	None	Temperature:	22.6°C	
Job Site:	SU02	Humidity:	41	
Serial Number:	000112391715	Barometric Pres.:	1020.5 mb	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	5			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	Battery			
Operating Mode:	AV Playback, 720p			
Deviations:	No deviations.			
Comments:	Device, AV cable to TV, HDMI cable to TV, AV dock sn: 091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			

Test Specifications
EN 55022: 2006 + A1:2007

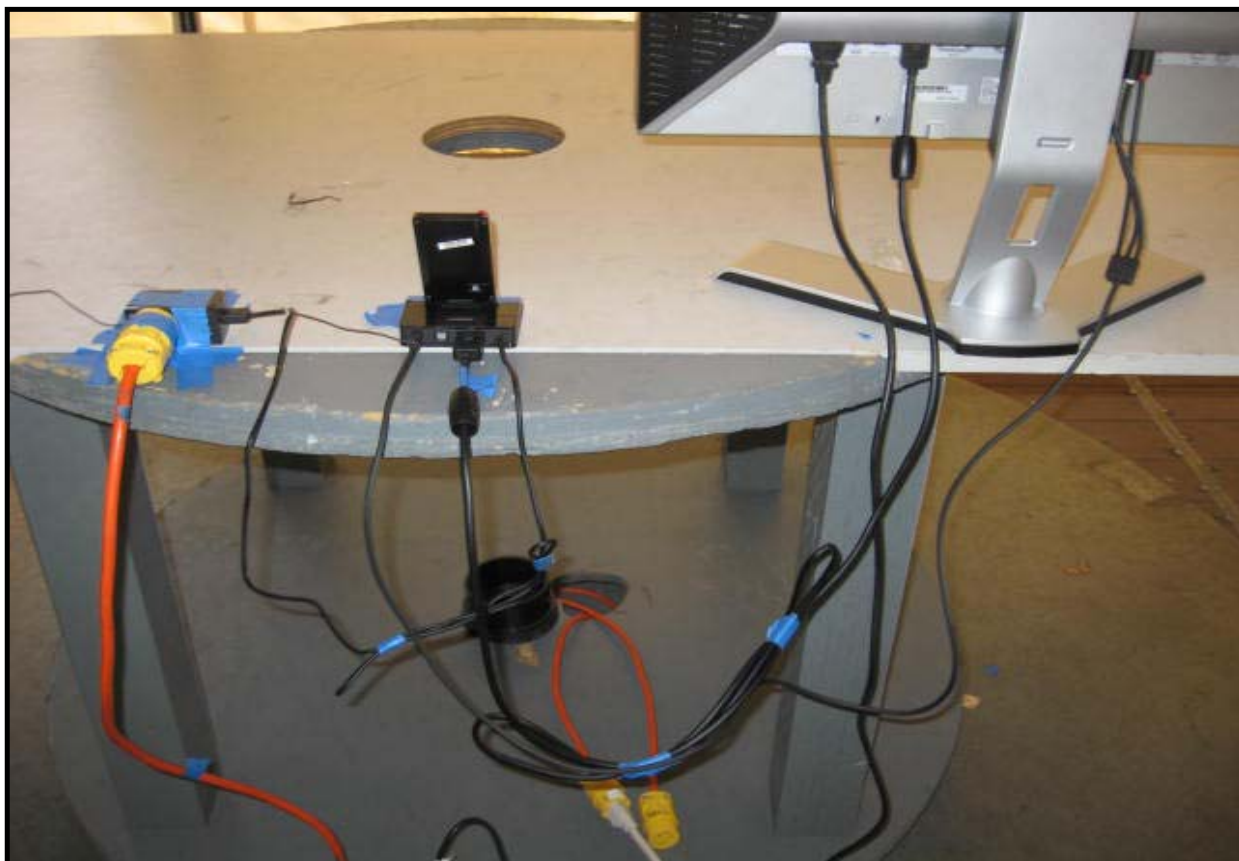
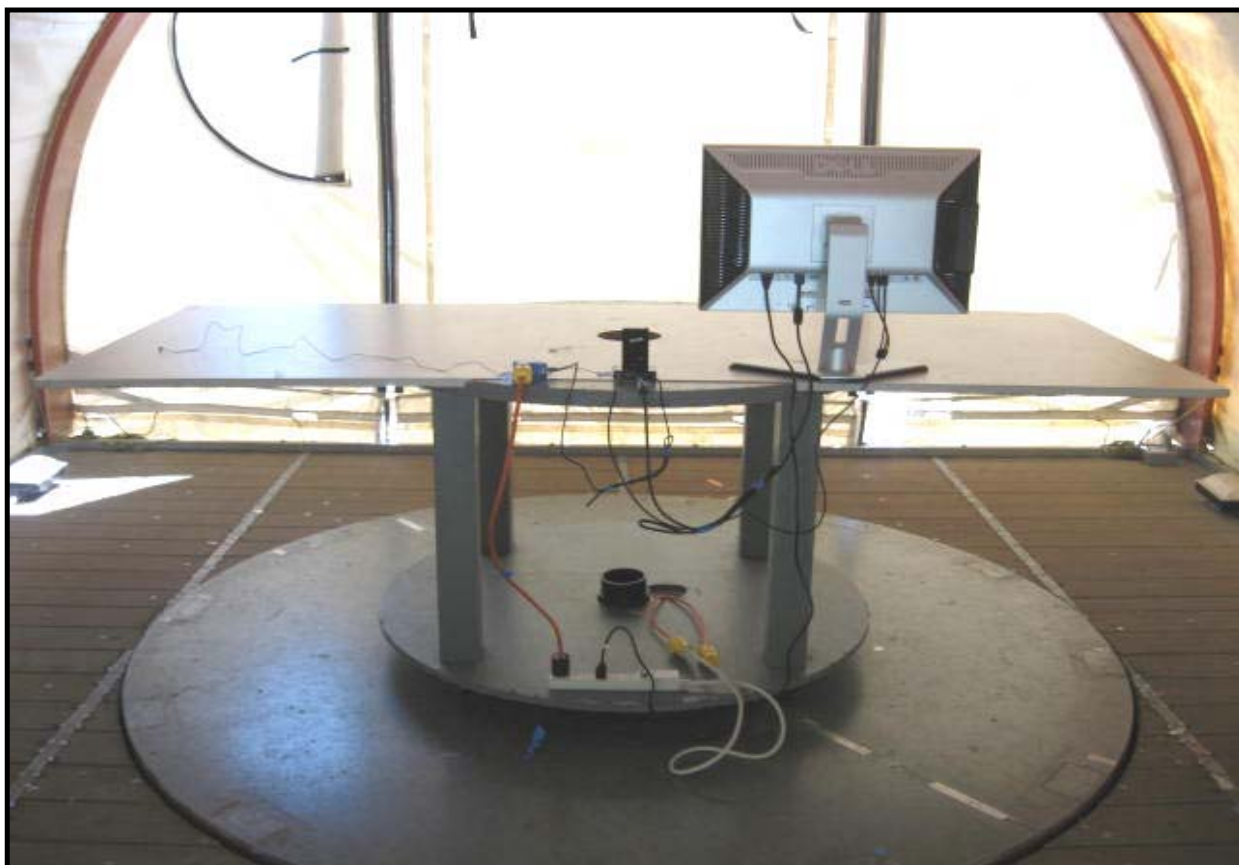
Test Method
CISPR 22:2005 (Amended by A1:2005 and A2:2006)

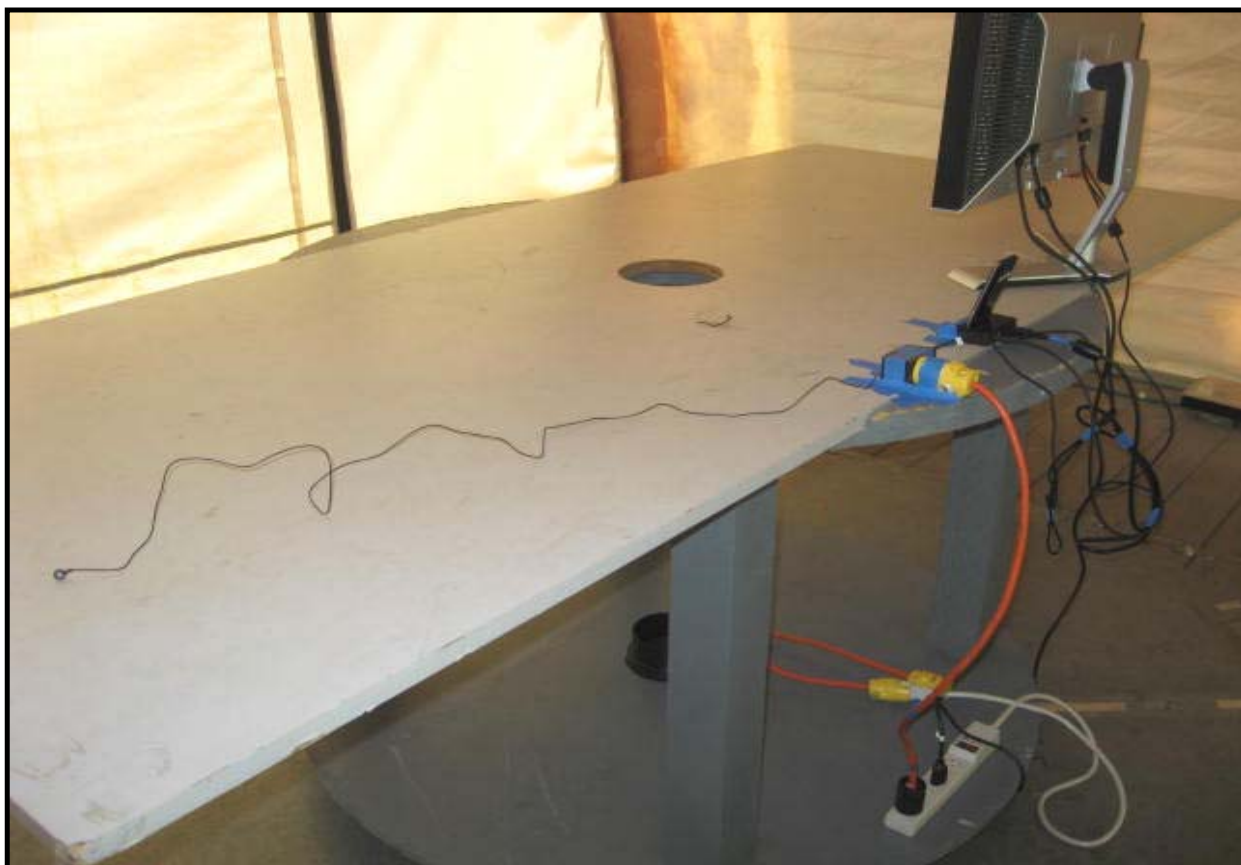
Run #	17	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass
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Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
742.499	7.4	24.9	2.5	180.0	10.0	0.0	Vert	QP	0.0	32.3	37.0	-4.7
222.750	10.4	13.3	1.0	245.0	10.0	0.0	Vert	QP	0.0	23.7	30.0	-6.3
742.500	5.4	24.9	4.0	360.0	10.0	0.0	Horz	QP	0.0	30.3	37.0	-6.7
116.594	8.0	14.7	1.0	360.0	10.0	0.0	Vert	QP	0.0	22.7	30.0	-7.3
371.250	10.7	18.6	3.0	100.0	10.0	0.0	Horz	QP	0.0	29.3	37.0	-7.7
816.750	3.1	25.9	4.0	0.0	10.0	0.0	Horz	QP	0.0	29.0	37.0	-8.0
519.750	6.9	21.3	1.0	160.0	10.0	0.0	Vert	QP	0.0	28.2	37.0	-8.8
816.750	2.2	25.9	1.0	235.0	10.0	0.0	Vert	QP	0.0	28.1	37.0	-8.9
222.750	6.9	13.3	3.5	190.0	10.0	0.0	Horz	QP	0.0	20.2	30.0	-9.8
165.888	4.2	15.9	4.0	0.0	10.0	0.0	Horz	QP	0.0	20.1	30.0	-9.9
165.888	4.2	15.9	1.2	330.0	10.0	0.0	Vert	QP	0.0	20.1	30.0	-9.9
116.594	5.0	14.7	4.0	100.0	10.0	0.0	Horz	QP	0.0	19.7	30.0	-10.3
519.750	5.1	21.3	4.0	135.0	10.0	0.0	Horz	QP	0.0	26.4	37.0	-10.6
371.250	6.6	18.6	1.0	325.0	10.0	0.0	Vert	QP	0.0	25.2	37.0	-11.8
48.849	5.2	11.9	1.0	25.0	10.0	0.0	Vert	QP	0.0	17.1	30.0	-12.9
445.455	4.0	20.0	4.0	200.0	10.0	0.0	Horz	QP	0.0	24.0	37.0	-13.0
445.500	3.6	20.0	1.0	200.0	10.0	0.0	Vert	QP	0.0	23.6	37.0	-13.4
48.849	3.2	11.9	4.0	305.0	10.0	0.0	Horz	QP	0.0	15.1	30.0	-14.9





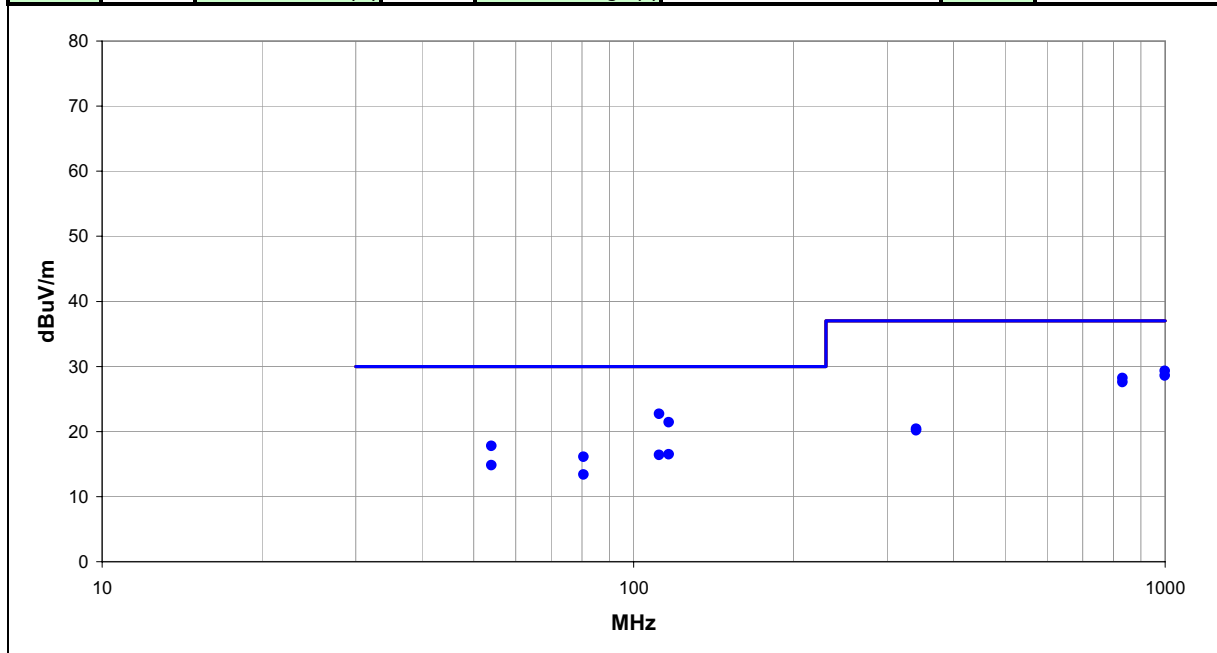


EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/28/09	
Project:	None	Temperature:	23.5°C	
Job Site:	SU02	Humidity:	40	
Serial Number:	31391815	Barometric Pres.:	1024.9 mb	
		Tested by:	Travis Rychener	
EUT:	Zune HD			
Configuration:	6			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120VAC/60Hz			
Operating Mode:	Syncing to laptop			
Deviations:	No deviations.			
Comments:	Device, AV cable to TV, AV dock sn:091800046, laptop, monitor			

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	11	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



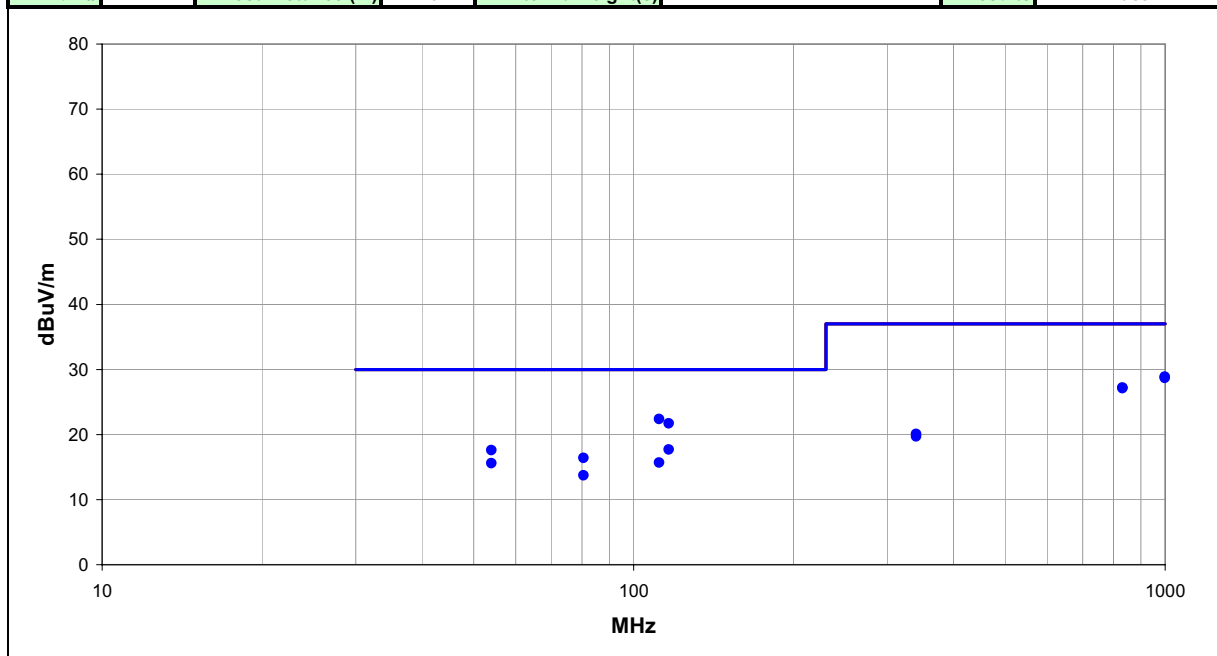
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
111.712	8.3	14.4	1.0	360.0	10.0	0.0	Vert	QP	0.0	22.7	30.0	-7.3
999.000	1.2	28.1	4.0	280.0	10.0	0.0	Horz	QP	0.0	29.3	37.0	-7.7
999.000	0.5	28.1	1.5	180.0	10.0	0.0	Vert	QP	0.0	28.6	37.0	-8.4
116.449	6.7	14.7	1.0	80.0	10.0	0.0	Vert	QP	0.0	21.4	30.0	-8.6
831.840	2.1	26.1	3.0	360.0	10.0	0.0	Horz	QP	0.0	28.2	37.0	-8.8
831.840	1.5	26.1	1.0	88.0	10.0	0.0	Vert	QP	0.0	27.6	37.0	-9.4
54.040	6.2	11.6	1.0	360.0	10.0	0.0	Vert	QP	0.0	17.8	30.0	-12.2
116.449	1.8	14.7	4.0	285.0	10.0	0.0	Horz	QP	0.0	16.5	30.0	-13.5
111.712	2.0	14.4	3.5	100.0	10.0	0.0	Horz	QP	0.0	16.4	30.0	-13.6
80.448	8.7	7.4	4.0	90.0	10.0	0.0	Horz	QP	0.0	16.1	30.0	-13.9
54.040	3.2	11.6	3.0	225.0	10.0	0.0	Horz	QP	0.0	14.8	30.0	-15.2
80.448	6.0	7.4	1.2	225.0	10.0	0.0	Vert	QP	0.0	13.4	30.0	-16.6
340.000	2.3	18.1	4.0	10.0	10.0	0.0	Horz	QP	0.0	20.4	37.0	-16.6
340.000	2.1	18.1	1.0	40.0	10.0	0.0	Vert	QP	0.0	20.2	37.0	-16.8

EMC

RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/28/09	
Project:	None	Temperature:	23.5°C	
Job Site:	SU02	Humidity:	40	
Serial Number:	0003344491715	Barometric Pres.:	1024.9 mb	
		Tested by:		Travis Rychener
EUT:	Zune HD			
Configuration:	6			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120VAC/60Hz			
Operating Mode:	Syncing to laptop			
Deviations:	No deviations.			
Comments:	Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800099, laptop, monitor			

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	12	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



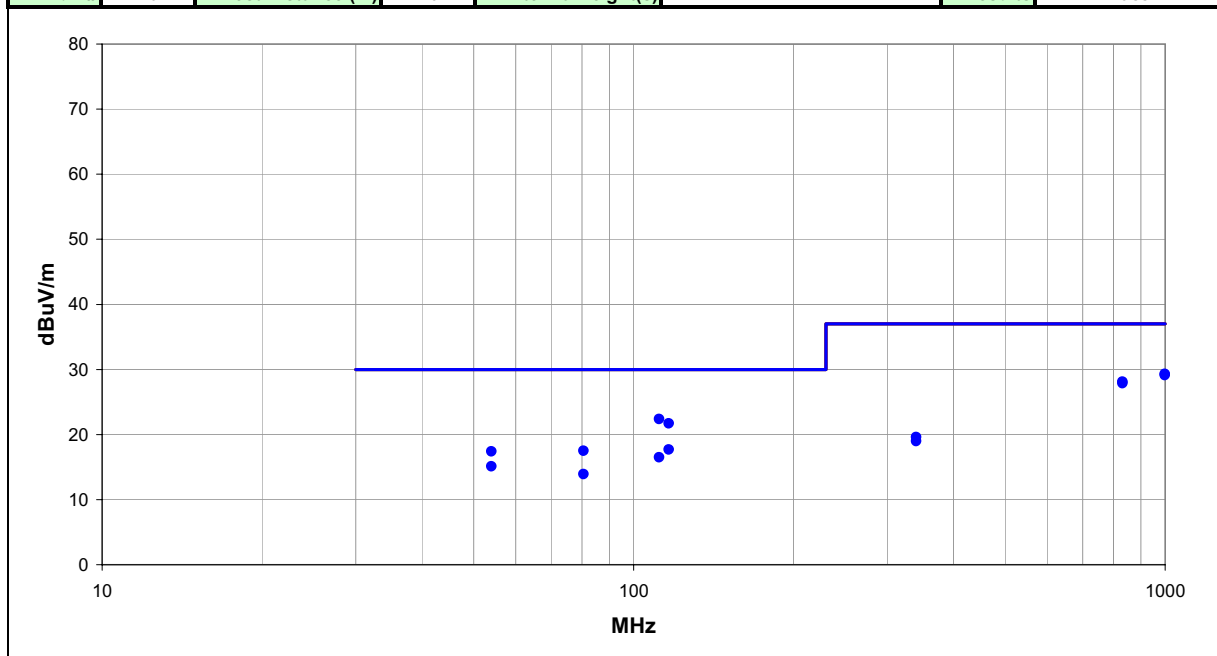
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
111.712	8.0	14.4	1.2	300.0	10.0	0.0	Vert	QP	0.0	22.4	30.0	-7.6
999.000	0.8	28.1	4.0	360.0	10.0	0.0	Horz	QP	0.0	28.9	37.0	-8.1
999.000	0.6	28.1	1.0	210.0	10.0	0.0	Vert	QP	0.0	28.7	37.0	-8.3
116.449	7.0	14.7	1.0	100.0	10.0	0.0	Vert	QP	0.0	21.7	30.0	-8.3
831.840	1.1	26.1	1.0	30.0	10.0	0.0	Vert	QP	0.0	27.2	37.0	-9.8
831.840	1.0	26.1	4.0	33.0	10.0	0.0	Horz	QP	0.0	27.1	37.0	-9.9
116.449	3.0	14.7	4.0	280.0	10.0	0.0	Horz	QP	0.0	17.7	30.0	-12.3
54.040	6.0	11.6	1.0	80.0	10.0	0.0	Vert	QP	0.0	17.6	30.0	-12.4
80.448	9.0	7.4	4.0	0.0	10.0	0.0	Horz	QP	0.0	16.4	30.0	-13.6
111.712	1.3	14.4	4.0	75.0	10.0	0.0	Horz	QP	0.0	15.7	30.0	-14.3
54.040	4.0	11.6	4.0	200.0	10.0	0.0	Horz	QP	0.0	15.6	30.0	-14.4
80.448	6.3	7.4	1.0	200.0	10.0	0.0	Vert	QP	0.0	13.7	30.0	-16.3
340.000	2.0	18.1	1.0	360.0	10.0	0.0	Vert	QP	0.0	20.1	37.0	-16.9
340.000	1.6	18.1	3.5	220.0	10.0	0.0	Horz	QP	0.0	19.7	37.0	-17.3

EMC

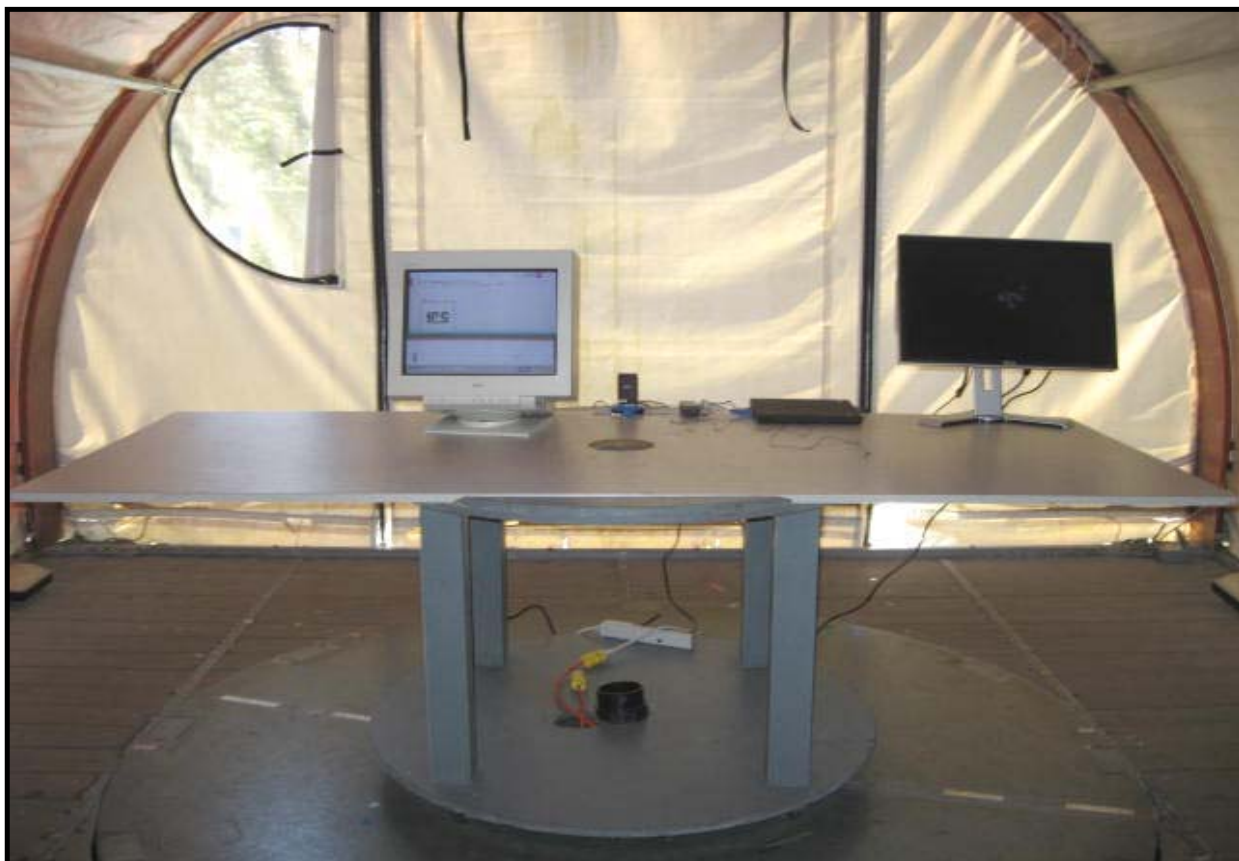
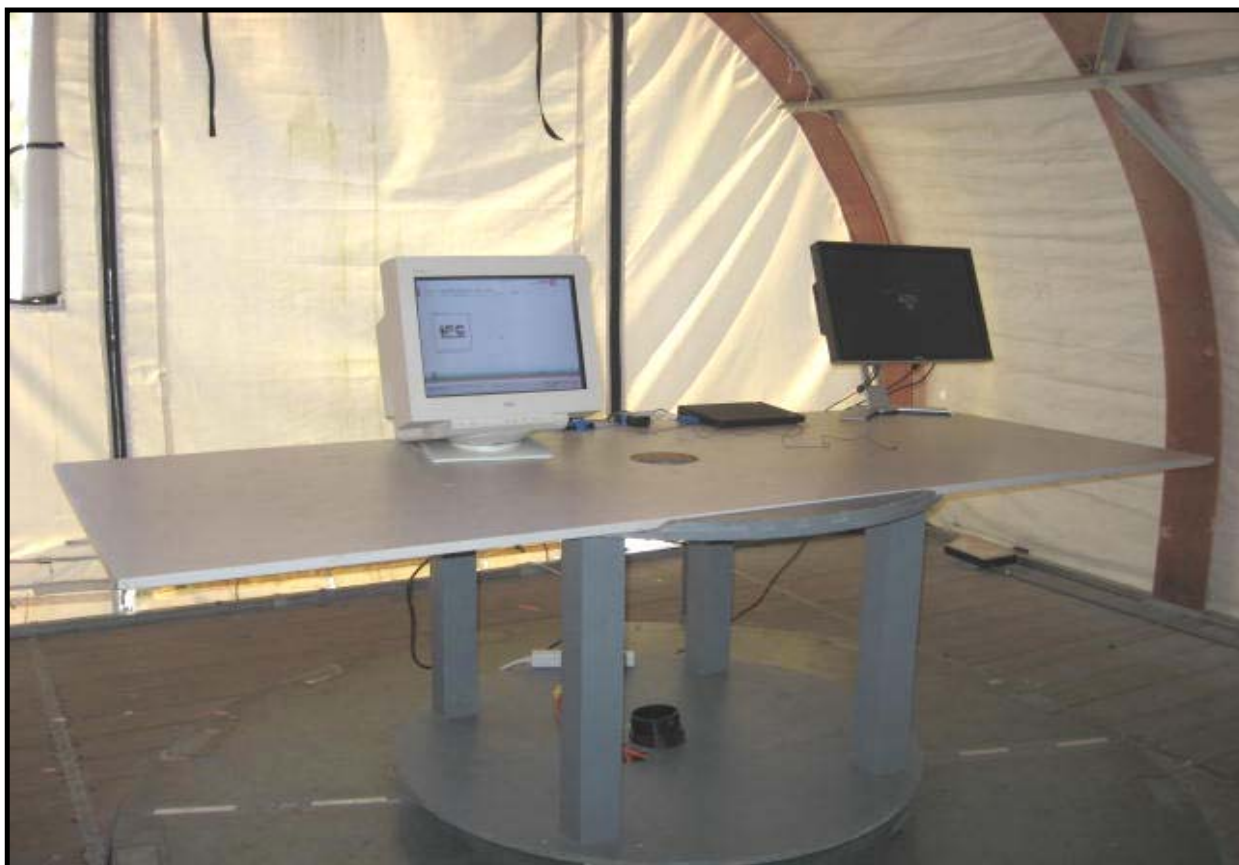
RADIATED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09		
Project:	None	Temperature:	23.5°C		
Job Site:	SU02	Humidity:	40		
Serial Number:	000113291715	Barometric Pres.:	1024.9 mb		
				Tested by:	Travis Rychener
EUT:	Zune HD				
Configuration:	6				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	230VAC/50Hz				
Operating Mode:	Syncing to laptop				
Deviations:	No deviations.				
Comments:	Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800087, laptop, monitor				

Test Specifications EN 55022: 2006 + A1:2007					Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
Run #	13	Test Distance (m)	10	Antenna Height(s)	1-4m	Results	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
111.712	8.0	14.4	1.0	0.0	10.0	0.0	Vert	QP	0.0	22.4	30.0	-7.6
999.000	1.2	28.1	1.3	150.0	10.0	0.0	Vert	QP	0.0	29.3	37.0	-7.7
999.000	1.0	28.1	4.0	275.0	10.0	0.0	Horz	QP	0.0	29.1	37.0	-7.9
116.449	7.0	14.7	1.0	110.0	10.0	0.0	Vert	QP	0.0	21.7	30.0	-8.3
831.840	2.0	26.1	1.0	40.0	10.0	0.0	Vert	QP	0.0	28.1	37.0	-8.9
831.840	1.8	26.1	4.0	320.0	10.0	0.0	Horz	QP	0.0	27.9	37.0	-9.1
116.449	3.0	14.7	4.0	150.0	10.0	0.0	Horz	QP	0.0	17.7	30.0	-12.3
80.448	10.1	7.4	4.0	0.0	10.0	0.0	Horz	QP	0.0	17.5	30.0	-12.5
54.040	5.8	11.6	1.0	120.0	10.0	0.0	Vert	QP	0.0	17.4	30.0	-12.6
111.712	2.1	14.4	3.0	75.0	10.0	0.0	Horz	QP	0.0	16.5	30.0	-13.5
54.040	3.5	11.6	2.5	200.0	10.0	0.0	Horz	QP	0.0	15.1	30.0	-14.9
80.448	6.5	7.4	1.3	250.0	10.0	0.0	Vert	QP	0.0	13.9	30.0	-16.1
340.000	1.5	18.1	1.5	70.0	10.0	0.0	Vert	QP	0.0	19.6	37.0	-17.4
340.000	0.9	18.1	4.0	0.0	10.0	0.0	Horz	QP	0.0	19.0	37.0	-18.0





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

Syncing to laptop

AV Playback, 720p

AV Playback, Composite out

AV Playback

POWER SETTINGS INVESTIGATED

230VAC/50Hz

Battery

FREQUENCY RANGE INVESTIGATED

Start Frequency

1000

Stop Frequency

6000

CLOCKS AND OSCILLATORS

None

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-4D-005180-24-10P	APJ	1/14/2009	13
Antenna, Horn	EMCO	3115	AHM	6/18/2008	24
SU07 cables a,h,c			SUB	1/14/2009	13
Spectrum Analyzer	Agilent	E4440A	AAW	1/15/2009	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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation 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.

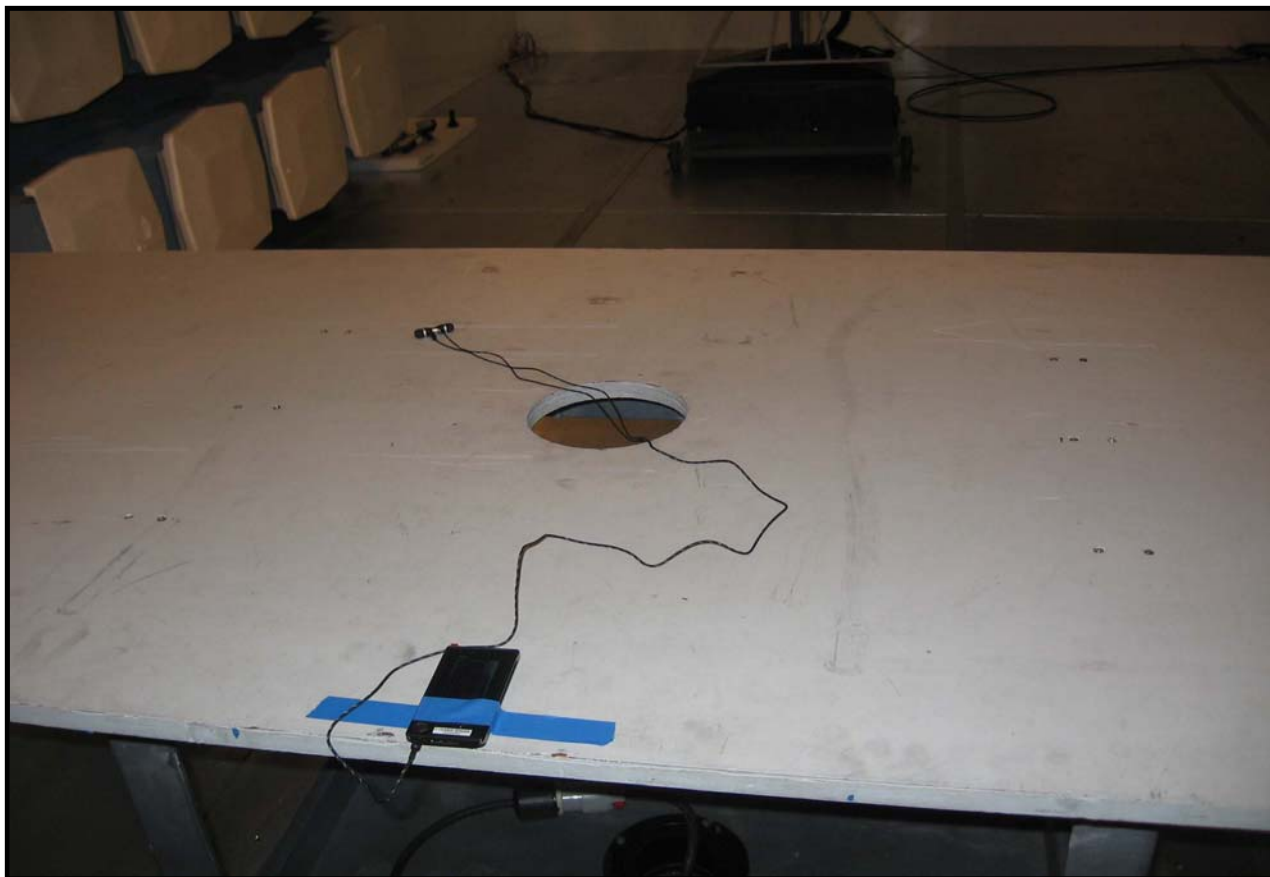
If measurements above 1 GHz were required, the test setup was modified to meet the regulatory requirements for higher frequency measurements. RF absorber was placed on the floor between the measurement antenna and EUT. Measurements were made at a 3 meter test distance with the EUT placed on a 0.8 meter high table. The level of emissions was maximized by varying the measurement antenna height from 1 to 4 meters, and rotating the turntable from 0 to 359 degrees. Both CISPR peak and average measurement detectors were used for comparison of the emissions to the peak and average specification limits.

NORTHWEST		RADIATED EMISSIONS DATA SHEET		PSA 2008.07.21 EMI 2008.1.9								
EMC												
EUT: Zune HD		Work Order: MCSO1426										
Serial Number: 000031391815		Date: 05/21/09										
Customer: Microsoft Corporation		Temperature: 22.6										
Attendees: James Wooten		Humidity: 36%										
Project: None		Barometric Pres.: 1023.4										
Tested by: Kevin Cameron		Power: Battery		Job Site: SU07								
TEST SPECIFICATIONS												
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B			Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)									
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m) 3								
COMMENTS												
Stand alone device w/ premium earbuds												
EUT OPERATING MODES												
AV Playback												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	12		Signature									
Configuration #	1											
Results	Pass											
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)
1660.052	42.0	-5.3	179.0	1.0	3.0	0.0	V-Horn	AV	0.0	36.7	50.0	-13.3
1328.033	41.1	-7.0	235.0	1.0	3.0	0.0	V-Horn	AV	0.0	34.1	50.0	-15.9
1328.033	59.2	-7.0	235.0	1.0	3.0	0.0	V-Horn	PK	0.0	52.2	70.0	-17.8
1660.052	50.6	-5.3	179.0	1.0	3.0	0.0	V-Horn	PK	0.0	45.3	70.0	-24.7
1660.052	29.5	-5.3	200.0	1.0	3.0	0.0	H-Horn	AV	0.0	24.2	50.0	-25.8
1328.033	28.2	-7.0	202.0	1.0	3.0	0.0	H-Horn	AV	0.0	21.2	50.0	-28.8
1328.033	44.3	-7.0	202.0	1.0	3.0	0.0	H-Horn	PK	0.0	37.3	70.0	-32.7
1660.052	41.5	-5.3	200.0	1.0	3.0	0.0	H-Horn	PK	0.0	36.2	70.0	-33.8

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET		PSA 2008.07.21 EMI 2008.1.9								
EUT: Zune HD		Work Order: MCSO1426										
Serial Number: 00031391815		Date: 05/21/09										
Customer: Microsoft Corporation		Temperature: 22.6 °C										
Attendees: James Wooten		Humidity: 41%										
Project: None		Barometric Pres.: 1020.5										
Tested by: Kevin Cameron		Power: 230VAC/50Hz		Job Site: SU07								
TEST SPECIFICATIONS			Test Method									
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B			CISPR 22:2005 (Amended by A1:2005 and A2:2006)									
TEST PARAMETERS												
Antenna Height(s) (m)		1.0-4.0		Test Distance (m) 3								
COMMENTS												
Stand alone device w/ premium earbuds												
EUT OPERATING MODES												
AV Playback												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		65		Signature <i>Kevin M. Cameron</i>								
Configuration #		1										
Results		Pass										
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.



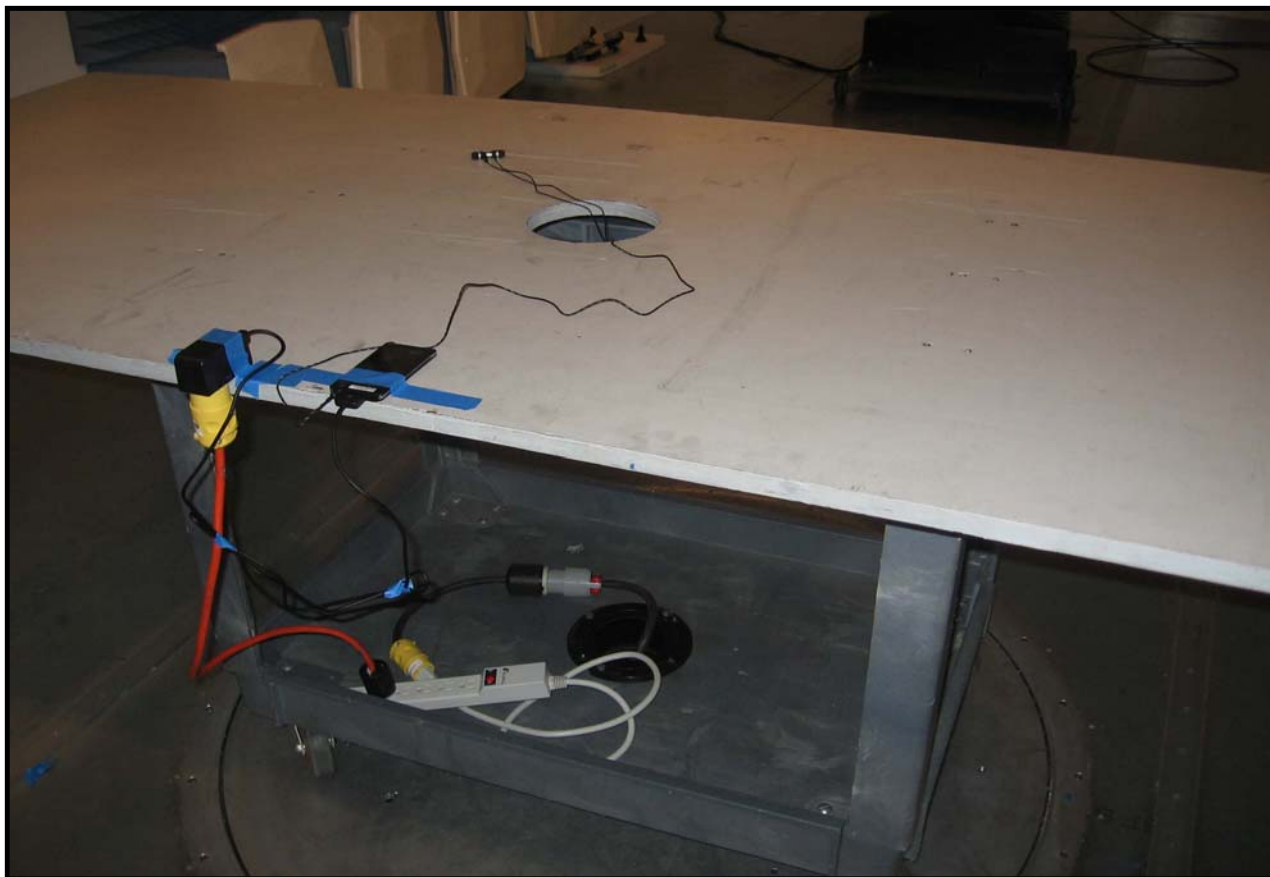


NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD						Work Order: MCSO1426							
Serial Number: 000031391815						Date: 05/21/09							
Customer: Microsoft Corporation						Temperature: 22.6							
Attendees: James Wooten						Humidity: 36%							
Project: None						Barometric Pres.: 1023.4							
Tested by: Kevin Cameron				Power: 230VAC/50Hz		Job Site: SU07							
TEST SPECIFICATIONS													
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B						Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)							
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4				Test Distance (m)		3					
COMMENTS													
Device, premium earbuds, sync cable, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.													
EUT OPERATING MODES													
AV Playback													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		11				<i>Kevin M. Cameron</i> Signature							
Configuration #		2											
Results		Pass											
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)	
1328.075	44.2	-7.0	275.0	1.0	3.0	0.0	V-Horn	AV	0.0	37.2	50.0	-12.8	
1990.855	39.6	-4.0	165.0	1.0	3.0	0.0	V-Horn	AV	0.0	35.6	50.0	-14.4	
1660.045	39.1	-5.3	360.0	1.0	3.0	0.0	V-Horn	AV	0.0	33.8	50.0	-16.2	
1328.075	58.8	-7.0	275.0	1.0	3.0	0.0	V-Horn	PK	0.0	51.8	70.0	-18.2	
1660.045	34.3	-5.3	180.0	1.0	3.0	0.0	H-Horn	AV	0.0	29.0	50.0	-21.0	
1990.855	31.2	-4.0	204.0	1.0	3.0	0.0	H-Horn	AV	0.0	27.2	50.0	-22.8	
1990.855	49.9	-4.0	165.0	1.0	3.0	0.0	V-Horn	PK	0.0	45.9	70.0	-24.1	
1328.075	32.0	-7.0	195.0	1.0	3.0	0.0	H-Horn	AV	0.0	25.0	50.0	-25.0	
1660.045	49.2	-5.3	360.0	1.0	3.0	0.0	V-Horn	PK	0.0	43.9	70.0	-26.1	
1990.855	44.4	-4.0	204.0	1.0	3.0	0.0	H-Horn	PK	0.0	40.4	70.0	-29.6	
1660.045	45.0	-5.3	180.0	1.0	3.0	0.0	H-Horn	PK	0.0	39.7	70.0	-30.3	
1328.075	45.2	-7.0	195.0	1.0	3.0	0.0	H-Horn	PK	0.0	38.2	70.0	-31.8	

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD						Work Order: MCSO1426							
Serial Number: 00031391815						Date: 05/21/09							
Customer: Microsoft Corporation						Temperature: 22.6 °C							
Attendees: James Wooten						Humidity: 41%							
Project: None						Barometric Pres.: 1020.5							
Tested by: Kevin Cameron						Power: 230VAC/50Hz						Job Site: SU07	
TEST SPECIFICATIONS												Test Method	
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B										CISPR 22:2005 (Amended by A1:2005 and A2:2006)			
TEST PARAMETERS													
Antenna Height(s) (m)		1.0-4.0				Test Distance (m)		3					
COMMENTS													
Device, premium earbuds, sync cable, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.													
EUT OPERATING MODES													
AV Playback													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		64				<i>Kevin M. Cameron</i> Signature							
Configuration #		2											
Results		Pass											
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)	

All emissions were greater than 10db below the limit.

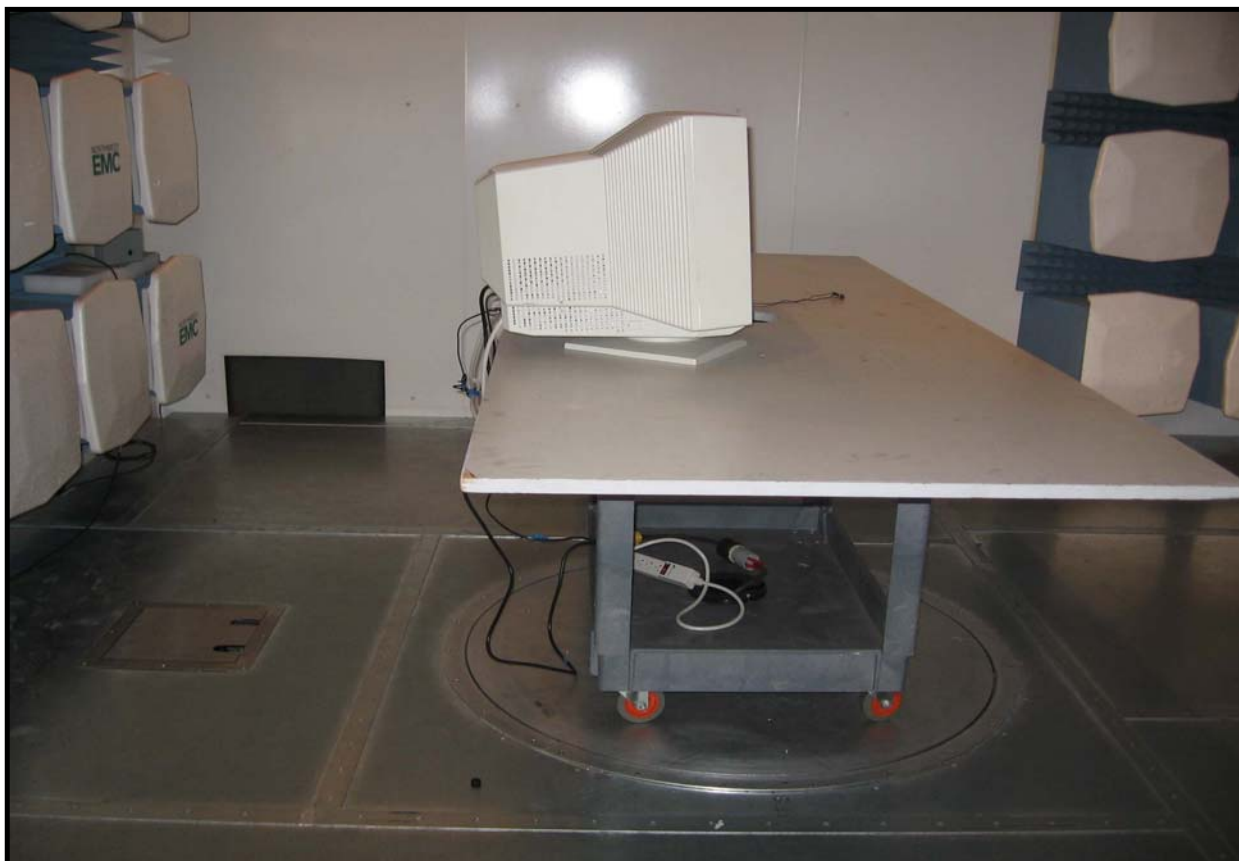




NORTHWEST		RADIATED EMISSIONS - EVALUATION ONLY				PSA 2008.07.21 EMI 2008.1.9						
EMC												
EUT: Zune HD				Work Order: MCSO1426								
Serial Number: 000031391815				Date: 05/21/09								
Customer: Microsoft Corporation				Temperature: 22.6								
Attendees: James Wooten				Humidity: 36%								
Project: None				Barometric Pres.: 1023.4								
Tested by: Kevin Cameron			Power: 230VAC/50Hz		Job Site: SU07							
TEST SPECIFICATIONS						Test Method						
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B						CISPR 22:2005 (Amended by A1:2005 and A2:2006)						
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m)		3						
COMMENTS												
Device, premium earbuds, sync cable, laptop, monitor												
EUT OPERATING MODES												
Syncing to laptop												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		10		Kevin M. Cameron Signature								
Configuration #		3										
Results		Evaluation										
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)
1593.266	66.9	-5.6	151.0	1.0	3.0	0.0	V-Horn	PK	0.0	61.3	70.0	-8.7
1593.266	45.9	-5.6	151.0	1.0	3.0	0.0	V-Horn	AV	0.0	40.3	50.0	-9.7
1328.909	60.1	-7.0	296.0	1.0	3.0	0.0	V-Horn	PK	0.0	53.1	70.0	-16.9
1593.266	58.6	-5.6	219.0	1.0	3.0	0.0	H-Horn	PK	0.0	53.0	70.0	-17.0
1593.266	36.7	-5.6	219.0	1.0	3.0	0.0	H-Horn	AV	0.0	31.1	50.0	-18.9
1328.909	37.4	-7.0	296.0	1.0	3.0	0.0	V-Horn	AV	0.0	30.4	50.0	-19.6
1328.909	32.0	-7.0	53.0	1.0	3.0	0.0	H-Horn	AV	0.0	25.0	50.0	-25.0
1328.909	49.2	-7.0	53.0	1.0	3.0	0.0	H-Horn	PK	0.0	42.2	70.0	-27.8

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET		PSA 2008.07.21 EMI 2008.1.9								
EUT: Zune HD		Work Order: MCSO1426										
Serial Number: 00031391815		Date: 05/21/09										
Customer: Microsoft Corporation		Temperature: 22.6 °C										
Attendees: James Wooten		Humidity: 41%										
Project: None		Barometric Pres.: 1020.5										
Tested by: Kevin Cameron		Power: 230VAC/50Hz		Job Site: SU07								
TEST SPECIFICATIONS			Test Method									
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B			CISPR 22:2005 (Amended by A1:2005 and A2:2006)									
TEST PARAMETERS												
Antenna Height(s) (m)		1.0-4.0		Test Distance (m) 3								
COMMENTS												
Device, premium earbuds, sync cable, laptop, monitor												
EUT OPERATING MODES												
Syncing to laptop												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		63		<i>Kevin M. Cameron</i> Signature								
Configuration #		3										
Results		Pass										
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.

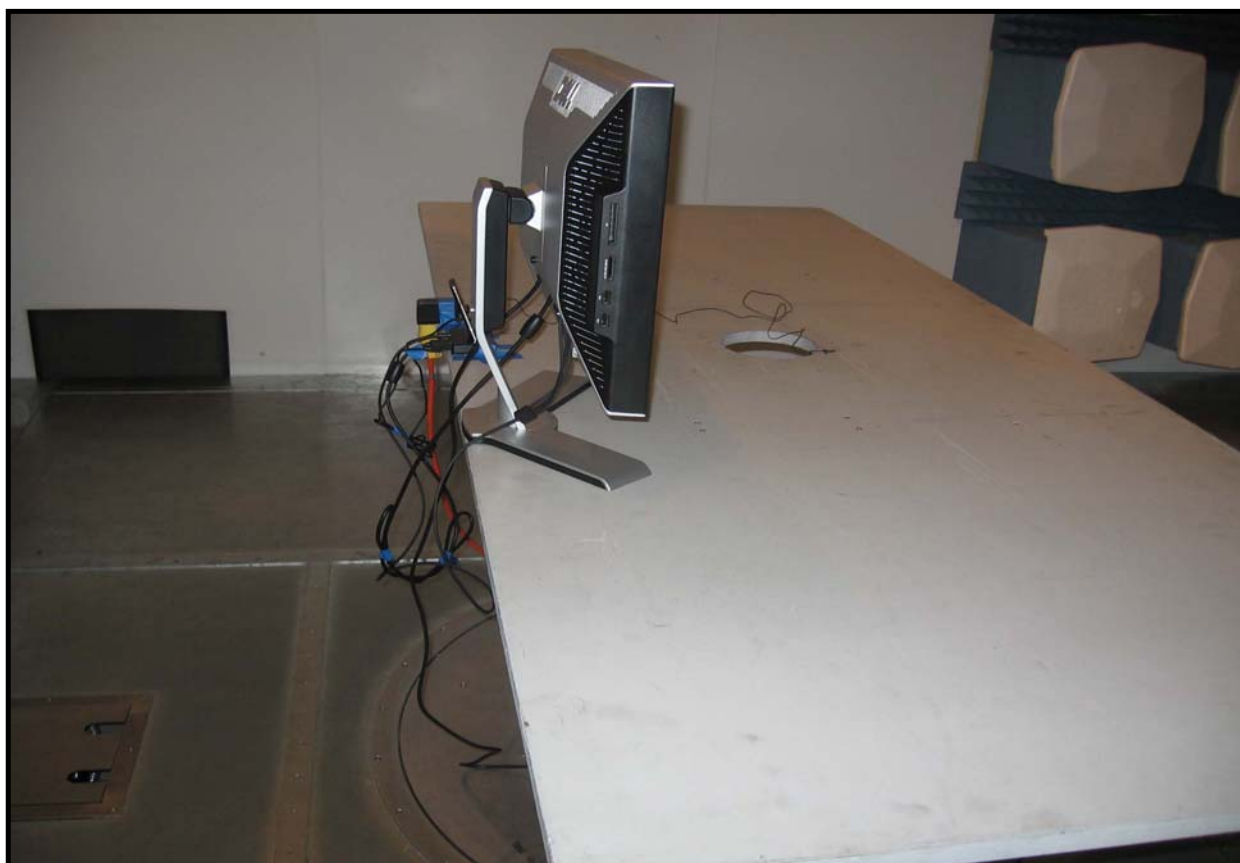


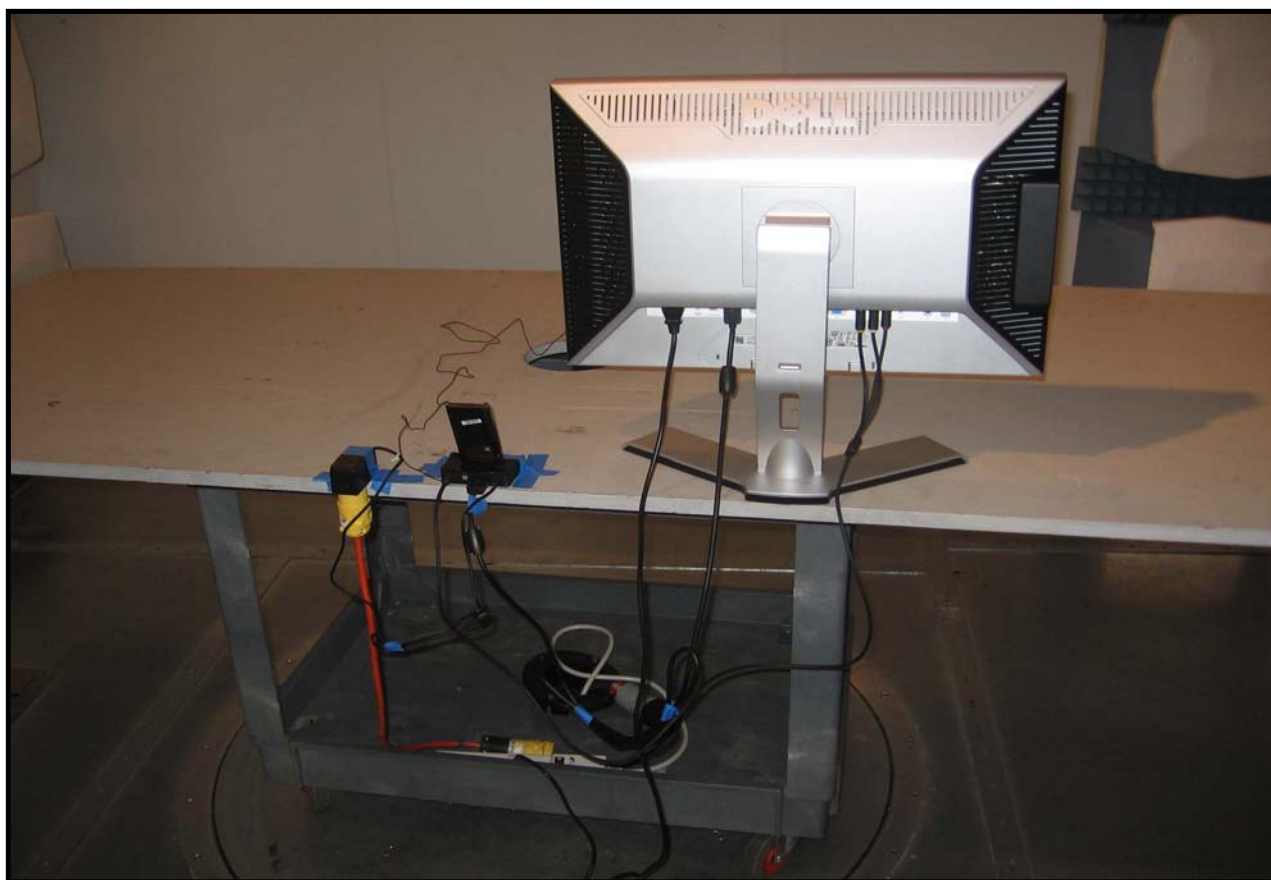


NORTHWEST		RADIATED EMISSIONS DATA SHEET				PSA 2008.07.21 EMI 2008.1.9						
EMC												
EUT: Zune HD				Work Order: MCSO1426								
Serial Number: 000031391815				Date: 05/21/09								
Customer: Microsoft Corporation				Temperature: 22.6								
Attendees: James Wooten				Humidity: 36%								
Project: None				Barometric Pres.: 1023.4								
Tested by: Kevin Cameron				Power: 230VAC/50Hz		Job Site: SU07						
TEST SPECIFICATIONS				Test Method								
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B				CISPR 22:2005 (Amended by A1:2005 and A2:2006)								
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m)		3						
COMMENTS												
Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.												
EUT OPERATING MODES												
AV Playback, Composite out												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	7		<i>Kevin M. Cameron</i> Signature									
Configuration #	4											
Results	Pass											
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)
1548.309	39.5	-5.8	189.0	1.7	3.0	0.0	V-Horn	AV	0.0	33.7	50.0	-16.3
1992.752	37.0	-4.0	207.0	1.0	3.0	0.0	H-Horn	AV	0.0	33.0	50.0	-17.0
1659.469	36.3	-5.3	220.0	1.0	3.0	0.0	H-Horn	AV	0.0	31.0	50.0	-19.0
1992.752	34.3	-4.0	188.0	1.1	3.0	0.0	V-Horn	AV	0.0	30.3	50.0	-19.7
1659.469	35.6	-5.3	194.0	1.4	3.0	0.0	V-Horn	AV	0.0	30.3	50.0	-19.7
1548.466	54.1	-5.8	189.0	1.7	3.0	0.0	V-Horn	PK	0.0	48.3	70.0	-21.7
1548.309	32.0	-5.8	224.0	1.4	3.0	0.0	H-Horn	AV	0.0	26.2	50.0	-23.8
1992.752	48.8	-4.0	188.0	1.1	3.0	0.0	V-Horn	PK	0.0	44.8	70.0	-25.2
1659.469	49.7	-5.3	194.0	1.4	3.0	0.0	V-Horn	PK	0.0	44.4	70.0	-25.6
1992.752	48.4	-4.0	207.0	1.0	3.0	0.0	H-Horn	PK	0.0	44.4	70.0	-25.6
1659.469	49.0	-5.3	220.0	1.0	3.0	0.0	H-Horn	PK	0.0	43.7	70.0	-26.3
1548.309	45.4	-5.8	224.0	1.4	3.0	0.0	H-Horn	PK	0.0	39.6	70.0	-30.4

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD						Work Order: MCSO1426							
Serial Number: 00031391815						Date: 06/05/09							
Customer: Microsoft Corporation						Temperature: 22.6 °C							
Attendees: James Wooten						Humidity: 41%							
Project: None						Barometric Pres.: 1020.5							
Tested by: Kevin Cameron						Power: 230VAC/50Hz						Job Site: SU07	
TEST SPECIFICATIONS												Test Method	
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B										CISPR 22:2005 (Amended by A1:2005 and A2:2006)			
TEST PARAMETERS													
Antenna Height(s) (m)		1.0-4.0				Test Distance (m)		3					
COMMENTS													
Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.													
EUT OPERATING MODES													
AV Playback, Composite Out													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		63				<i>Kevin M. Cameron</i> Signature							
Configuration #		4											
Results		Pass											
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)	

All emissions were greater than 10db below the limit.

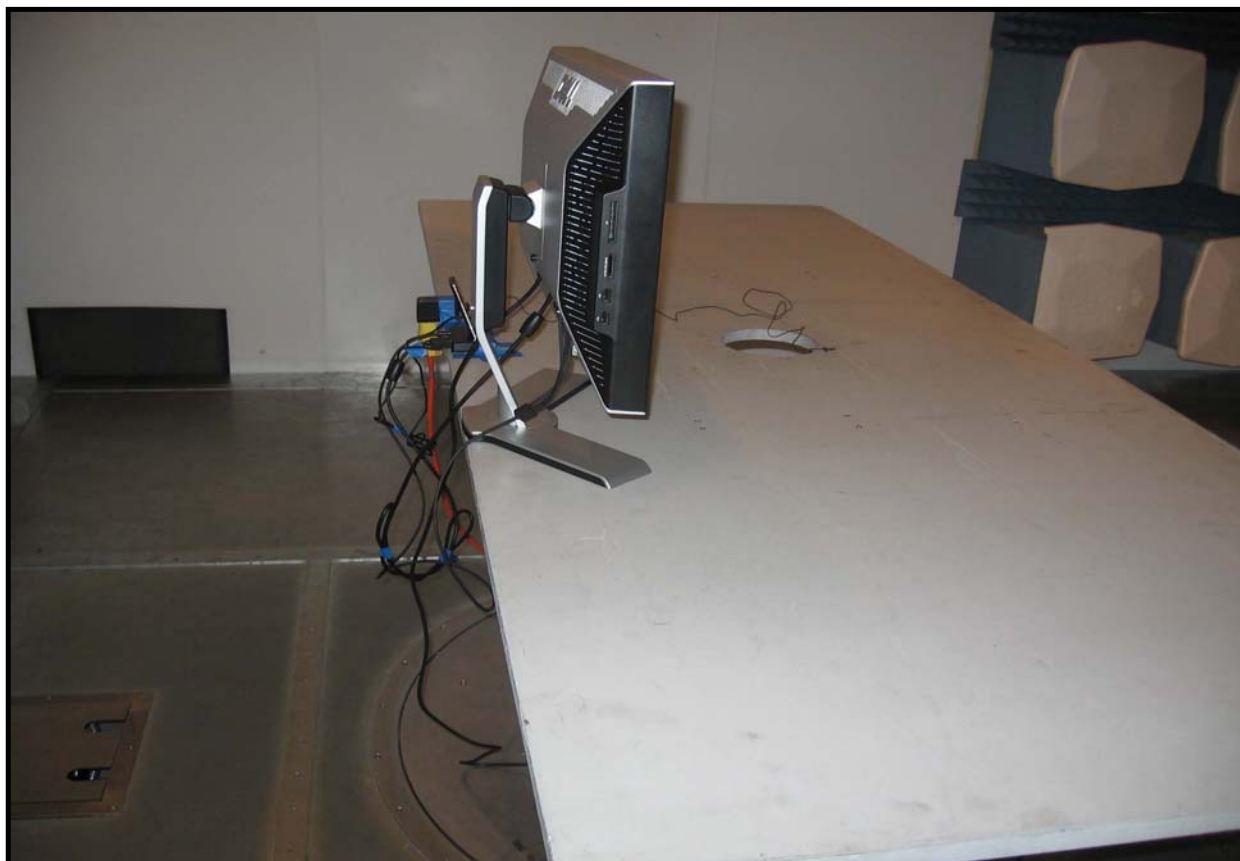


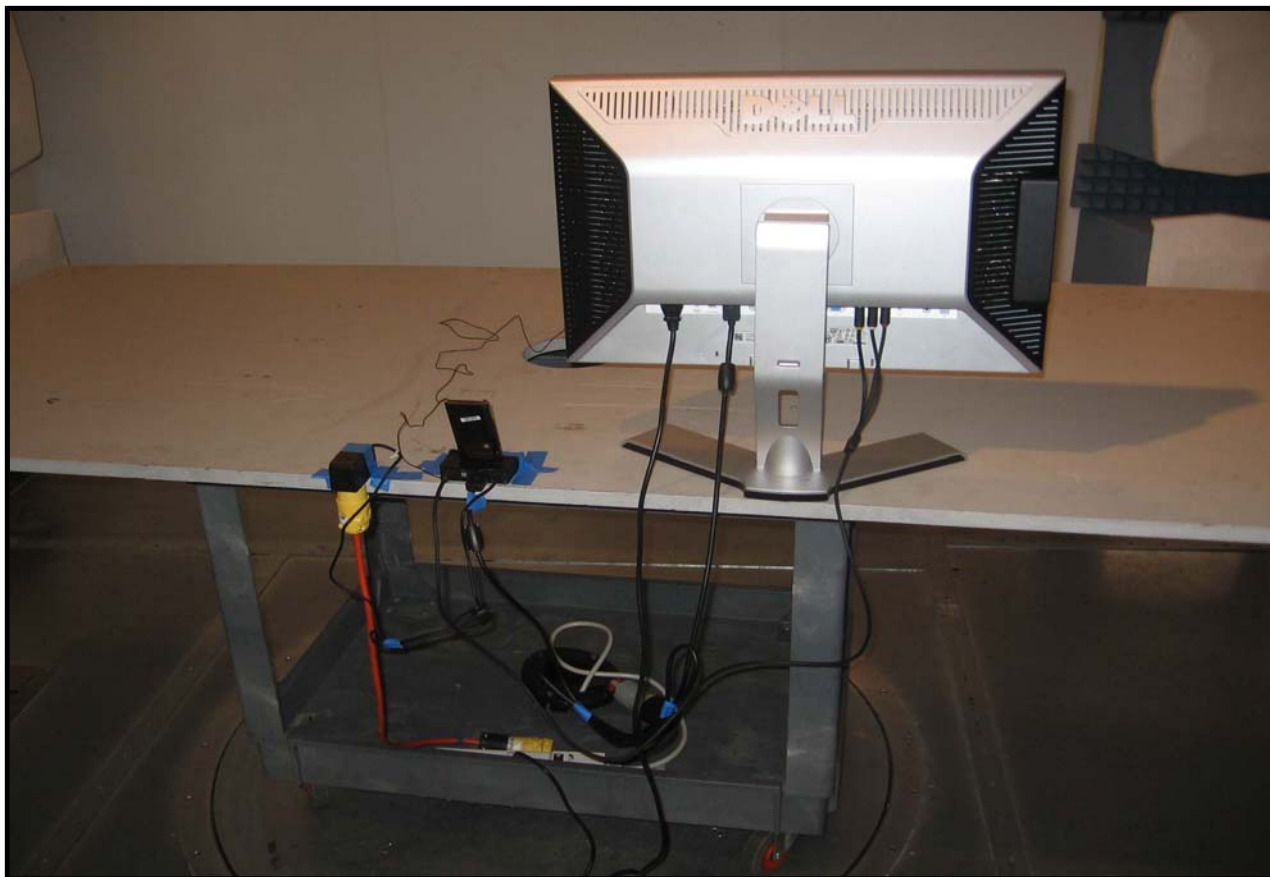


NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD						Work Order: MCSO1426							
Serial Number: 000031391815						Date: 05/21/09							
Customer: Microsoft Corporation						Temperature: 22.6							
Attendees: James Wooten						Humidity: 36%							
Project: None						Barometric Pres.: 1023.4							
Tested by: Kevin Cameron				Power: 230VAC/50Hz		Job Site: SU07							
TEST SPECIFICATIONS													
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B						Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)							
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4				Test Distance (m)		3					
COMMENTS													
Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.													
EUT OPERATING MODES													
AV Playback, 720p													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		8				<i>Kevin M. Cameron</i> Signature							
Configuration #		5											
Results		Pass											
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)	
1856.404	44.6	-4.3	196.0	1.0	3.0	0.0	H-Horn	AV	0.0	40.3	50.0	-9.7	
1484.801	46.0	-6.1	188.0	1.0	3.0	0.0	V-Horn	AV	0.0	39.9	50.0	-10.1	
1856.404	43.6	-4.3	225.0	1.2	3.0	0.0	V-Horn	AV	0.0	39.3	50.0	-10.7	
1484.801	44.5	-6.1	199.0	1.0	3.0	0.0	H-Horn	AV	0.0	38.4	50.0	-11.6	
1930.583	40.7	-4.1	209.0	1.0	3.0	0.0	H-Horn	AV	0.0	36.6	50.0	-13.4	
1113.629	44.8	-8.3	227.0	1.2	3.0	0.0	H-Horn	AV	0.0	36.5	50.0	-13.5	
1113.629	42.5	-8.3	181.0	1.0	3.0	0.0	V-Horn	AV	0.0	34.2	50.0	-15.8	
1930.583	37.8	-4.1	219.0	1.0	3.0	0.0	V-Horn	AV	0.0	33.7	50.0	-16.3	
1113.629	58.5	-8.3	227.0	1.2	3.0	0.0	H-Horn	PK	0.0	50.2	70.0	-19.8	
1856.404	54.1	-4.3	225.0	1.2	3.0	0.0	V-Horn	PK	0.0	49.8	70.0	-20.2	
1856.404	53.9	-4.3	196.0	1.0	3.0	0.0	H-Horn	PK	0.0	49.6	70.0	-20.4	
1113.629	57.5	-8.3	181.0	1.0	3.0	0.0	V-Horn	PK	0.0	49.2	70.0	-20.8	
1484.801	54.6	-6.1	188.0	1.0	3.0	0.0	V-Horn	PK	0.0	48.5	70.0	-21.5	
1484.801	53.7	-6.1	199.0	1.0	3.0	0.0	H-Horn	PK	0.0	47.6	70.0	-22.4	
1930.583	50.2	-4.1	209.0	1.0	3.0	0.0	H-Horn	PK	0.0	46.1	70.0	-23.9	
1930.583	49.3	-4.1	219.0	1.0	3.0	0.0	V-Horn	PK	0.0	45.2	70.0	-24.8	

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET		PSA 2008.07.21 EMI 2008.1.9								
EUT: Zune HD		Work Order: MCSO1426										
Serial Number: 00031391815		Date: 06/05/09										
Customer: Microsoft Corporation		Temperature: 22.6 °C										
Attendees: James Wooten		Humidity: 41%										
Project: None		Barometric Pres.: 1020.5										
Tested by: Kevin Cameron		Power: 230VAC/50Hz		Job Site: SU07								
TEST SPECIFICATIONS			Test Method									
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B			CISPR 22:2005 (Amended by A1:2005 and A2:2006)									
TEST PARAMETERS												
Antenna Height(s) (m)		1.0-4.0		Test Distance (m) 3								
COMMENTS												
Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.												
EUT OPERATING MODES												
AV Playback, 720p												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		63		<i>Kevin M. Cameron</i> Signature								
Configuration #		5										
Results		Pass										
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.

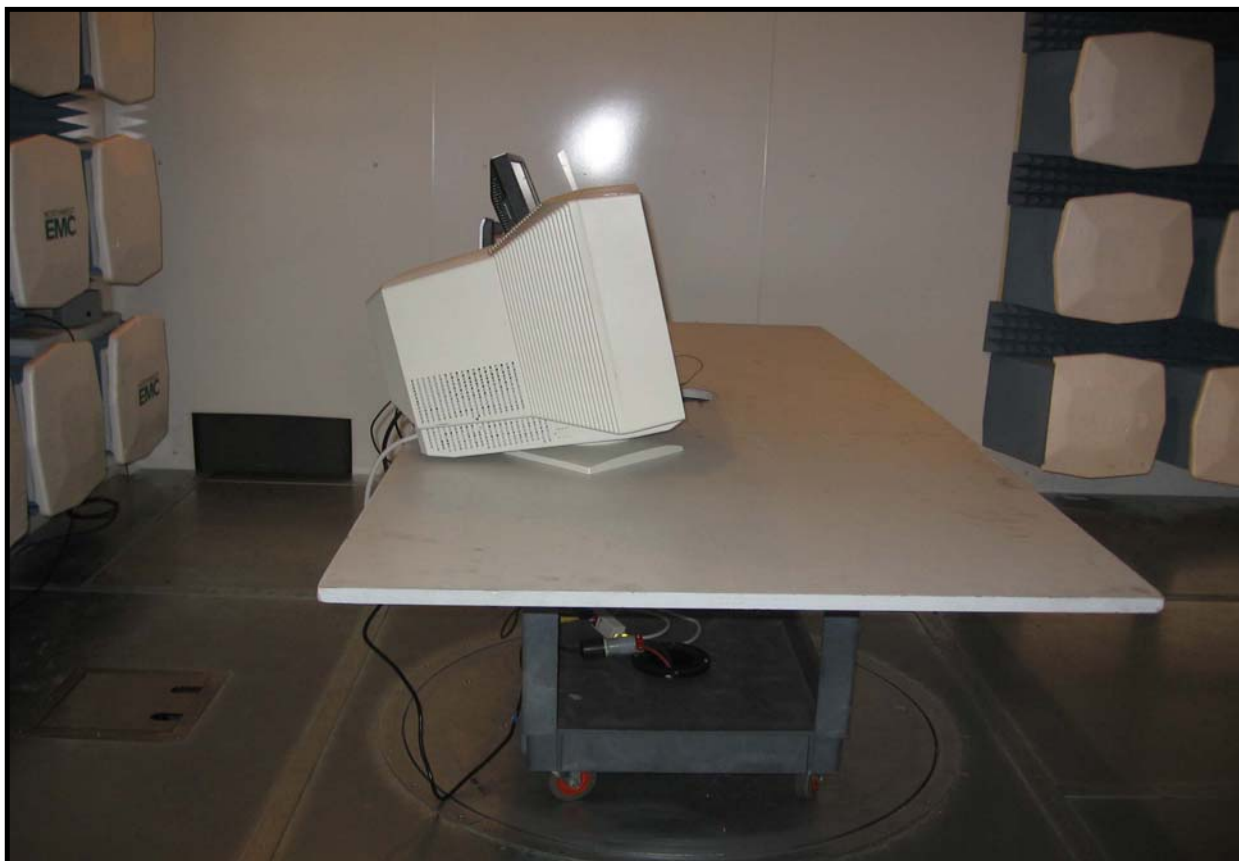




NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD						Work Order: MCSO1426							
Serial Number: 000031391815						Date: 05/21/09							
Customer: Microsoft Corporation						Temperature: 22.6							
Attendees: James Wooten						Humidity: 36%							
Project: None						Barometric Pres.: 1023.4							
Tested by: Kevin Cameron				Power: 230VAC/50Hz		Job Site: SU07							
TEST SPECIFICATIONS						Test Method							
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B						CISPR 22:2005 (Amended by A1:2005 and A2:2006)							
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4				Test Distance (m)		3					
COMMENTS													
Device, AV cable to TV, AV dock sn:091800046, laptop, monitor													
EUT OPERATING MODES													
Syncing to laptop													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		9				<i>Kevin M. Cameron</i> Signature							
Configuration #		6											
Results		Pass											
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)	
1594.950	68.6	-5.6	133.0	1.0	3.0	0.0	V-Horn	PK	0.0	63.0	70.0	-7.0	
1594.950	43.9	-5.6	133.0	1.0	3.0	0.0	V-Horn	AV	0.0	38.3	50.0	-11.7	
1327.980	41.1	-7.0	360.0	1.0	3.0	0.0	V-Horn	AV	0.0	34.1	50.0	-15.9	
1594.950	59.2	-5.6	155.0	1.0	3.0	0.0	H-Horn	PK	0.0	53.6	70.0	-16.4	
1594.950	38.9	-5.6	155.0	1.0	3.0	0.0	H-Horn	AV	0.0	33.3	50.0	-16.7	
1327.980	57.7	-7.0	360.0	1.0	3.0	0.0	V-Horn	PK	0.0	50.7	70.0	-19.3	
1992.330	30.8	-4.0	157.0	1.3	3.0	0.0	V-Horn	AV	0.0	26.8	50.0	-23.2	
2390.910	50.4	-4.1	153.0	1.0	3.0	0.0	V-Horn	PK	0.0	46.3	70.0	-23.7	
1327.980	32.1	-7.0	45.0	1.0	3.0	0.0	H-Horn	AV	0.0	25.1	50.0	-24.9	
2390.910	29.0	-4.1	153.0	1.0	3.0	0.0	V-Horn	AV	0.0	24.9	50.0	-25.1	
1327.980	51.4	-7.0	45.0	1.0	3.0	0.0	H-Horn	PK	0.0	44.4	70.0	-25.6	
1992.330	27.8	-4.0	201.0	1.0	3.0	0.0	H-Horn	AV	0.0	23.8	50.0	-26.2	
2390.910	27.4	-4.1	200.0	1.0	3.0	0.0	H-Horn	AV	0.0	23.3	50.0	-26.7	
1992.330	45.7	-4.0	157.0	1.3	3.0	0.0	V-Horn	PK	0.0	41.7	70.0	-28.3	
1992.330	44.1	-4.0	201.0	1.0	3.0	0.0	H-Horn	PK	0.0	40.1	70.0	-29.9	
2390.910	40.6	-4.1	200.0	1.0	3.0	0.0	H-Horn	PK	0.0	36.5	70.0	-33.5	

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD		Work Order: MCSO1426											
Serial Number: 00031391815		Date: 06/05/09											
Customer: Microsoft Corporation		Temperature: 22.6 °C											
Attendees: James Wooten		Humidity: 41%											
Project: None		Barometric Pres.: 1020.5											
Tested by: Kevin Cameron		Power: 230VAC/50Hz		Job Site: SU07									
TEST SPECIFICATIONS												Test Method	
CISPR 22:2005 (Amended by A1:2005 and A2:2006) Class B												CISPR 22:2005 (Amended by A1:2005 and A2:2006)	
TEST PARAMETERS													
Antenna Height(s) (m)		1.0-4.0				Test Distance (m)		3					
COMMENTS													
Device, AV cable to TV, AV dock sn:091800046, laptop, monitor													
EUT OPERATING MODES													
Syncing to Laptop													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		63		<i>Kevin M. Cameron</i> Signature									
Configuration #		6											
Results		Pass											
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)	

All emissions were greater than 10db below the limit.





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
AV Playback, Composite
AV Playback, 720p
Syncing to laptop

MODE USED FOR FINAL DATA

AV Playback
AV Playback, Composite
AV Playback, 720p
Syncing to laptop

POWER SETTINGS INVESTIGATED

Battery
120VAC/60Hz

POWER SETTINGS USED FOR FINAL DATA

Battery
120VAC/60Hz

FREQUENCY RANGE INVESTIGATED

Start Frequency	1000	Stop Frequency	8000
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CLOCKS AND OSCILLATORS

None Provided

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-4D-005180-24-10P	APJ	1/14/2009	13
Antenna, Horn	EMCO	3115	AHM	6/18/2008	24
SU07 cables a,h,c			SUB	1/14/2009	13
Spectrum Analyzer	Agilent	E4440A	AAW	1/15/2009	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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation 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.

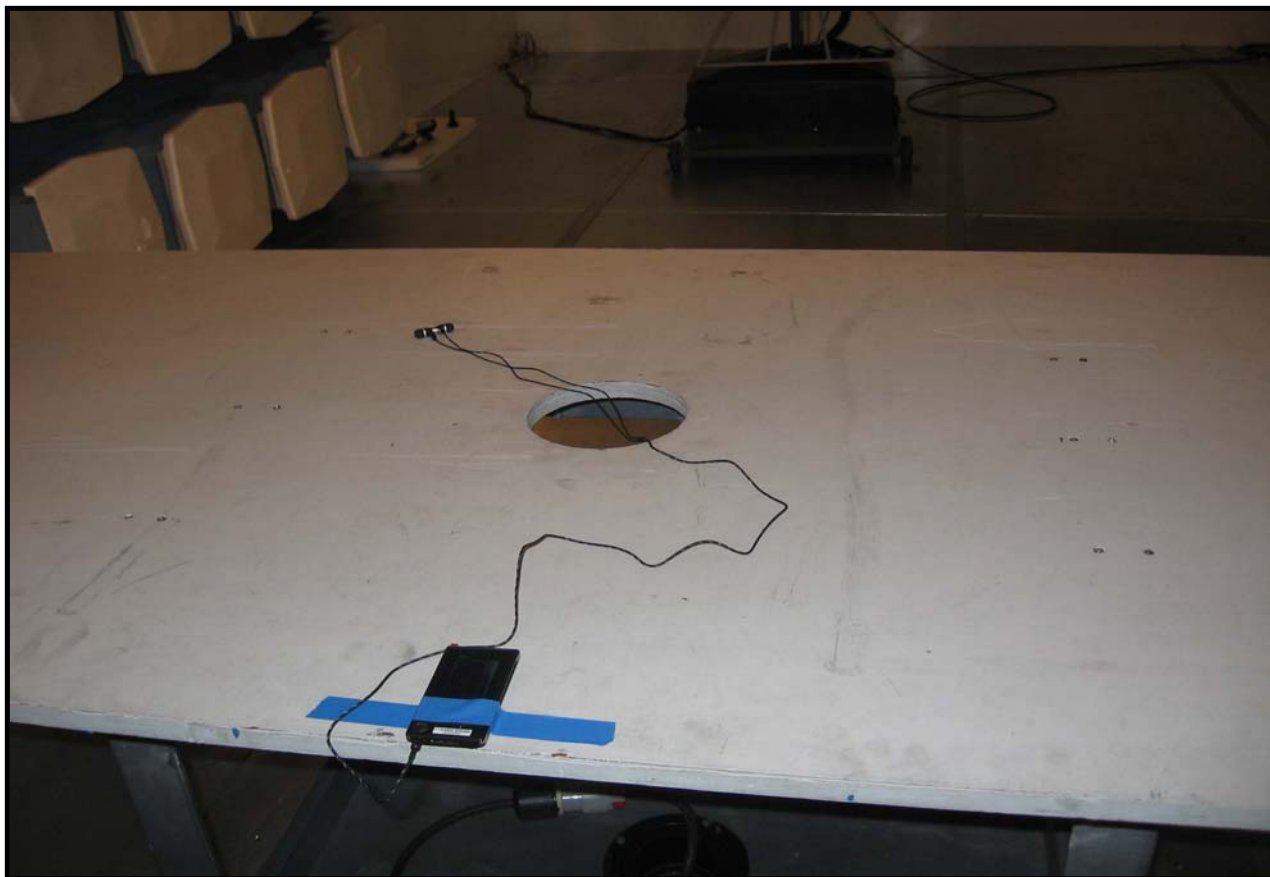
Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At 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		RADIATED EMISSIONS DATA SHEET		PSA 2008.07.21 EMI 2008.1.9								
EMC												
EUT: Zune HD			Work Order: MCSO1426									
Serial Number: 000031391815			Date: 05/21/09									
Customer: Microsoft Corporation			Temperature: 22.6									
Attendees: James Wooten			Humidity: 36%									
Project: None			Barometric Pres.: 1023.4									
Tested by: Kevin Cameron		Power: Battery	Job Site: SU07									
TEST SPECIFICATIONS			Test Method									
FCC 15.109:2009 Class B			ANSI C63.4:2003									
TEST PARAMETERS												
Antenna Height(s) (m)	1 - 4		Test Distance (m)	3								
COMMENTS												
Stand alone device w/ premium earbuds												
EUT OPERATING MODES												
AV Playback												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	6		<i>Kevin M. Cameron</i> Signature									
Configuration #	1											
Results	Pass											
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)
1991.417	42.5	-4.0	281.0	1.0	3.0	0.0	V-Horn	AV	0.0	38.5	54.0	-15.5
1991.417	60.0	-4.0	281.0	1.0	3.0	0.0	V-Horn	PK	0.0	56.0	74.0	-18.0
1327.756	42.9	-7.0	284.0	1.1	3.0	0.0	V-Horn	AV	0.0	35.9	54.0	-18.1
1327.756	60.7	-7.0	284.0	1.1	3.0	0.0	V-Horn	PK	0.0	53.7	74.0	-20.3
1991.417	30.3	-4.0	40.0	1.1	3.0	0.0	H-Horn	AV	0.0	26.3	54.0	-27.7
1327.756	31.3	-7.0	324.0	1.0	3.0	0.0	H-Horn	AV	0.0	24.3	54.0	-29.7
1991.417	47.5	-4.0	40.0	1.1	3.0	0.0	H-Horn	PK	0.0	43.5	74.0	-30.5
1327.756	44.0	-7.0	324.0	1.0	3.0	0.0	H-Horn	PK	0.0	37.0	74.0	-37.0

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD						Work Order: MCSO1426							
Serial Number: 00031391815						Date: 06/05/09							
Customer: Microsoft Corporation						Temperature: 22.6 °C							
Attendees: James Wooten						Humidity: 41%							
Project: None						Barometric Pres.: 1020.5							
Tested by: Kevin Cameron						Power: Battery		Job Site: SU07					
TEST SPECIFICATIONS												Test Method	
FCC 15.109:2009 Class B												ANSI C63.4:2003	
TEST PARAMETERS													
Antenna Height(s) (m)		1.0-4.0				Test Distance (m)		3					
COMMENTS													
Stand alone device w/ premium earbuds													
EUT OPERATING MODES													
AV Playback													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		66		<i>Kevin M. Cameron</i> Signature									
Configuration #		1											
Results		Pass											
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)	

All emissions were greater than 10db below the limit.



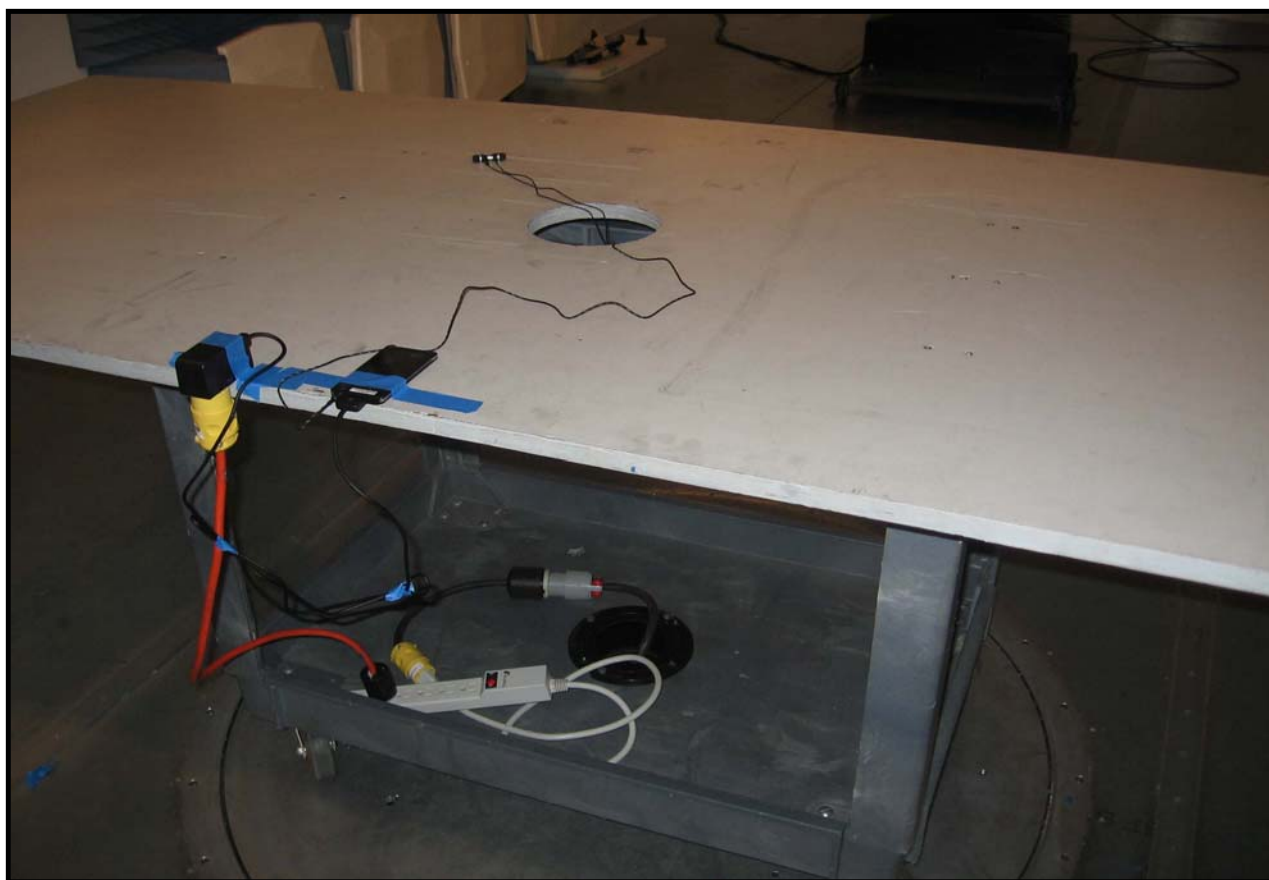


NORTHWEST		RADIATED EMISSIONS DATA SHEET				PSA 2008.07.21 EMI 2008.1.9						
EMC												
EUT: Zune HD				Work Order: MCSO1426								
Serial Number: 000031391815				Date: 05/21/09								
Customer: Microsoft Corporation				Temperature: 22.6								
Attendees: James Wooten				Humidity: 36%								
Project: None				Barometric Pres.: 1023.4								
Tested by: Kevin Cameron			Power: 120VAC/60Hz		Job Site: SU07							
TEST SPECIFICATIONS				Test Method								
FCC 15.109:2009 Class B				ANSI C63.4:2003								
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m)		3						
COMMENTS												
Device, premium earbuds, sync cable, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.												
EUT OPERATING MODES												
AV Playback												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		5		Signature								
Configuration #		2										
Results		Pass										
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)
1327.824	61.3	-7.0	299.0	1.1	3.0	0.0	V-Horn	PK	0.0	54.3	74.0	-19.7
1327.824	38.2	-7.0	299.0	1.1	3.0	0.0	V-Horn	AV	0.0	31.2	54.0	-22.8
1327.824	29.2	-7.0	187.0	1.2	3.0	0.0	H-Horn	AV	0.0	22.2	54.0	-31.8
1327.824	47.9	-7.0	187.0	1.2	3.0	0.0	H-Horn	PK	0.0	40.9	74.0	-33.1

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET				PSA 2008.07.21 EMI 2008.1.9						
EUT: Zune HD				Work Order: MCSO1426								
Serial Number: 00031391815				Date: 06/05/09								
Customer: Microsoft Corporation				Temperature: 22.6 °C								
Attendees: James Wooten				Humidity: 41%								
Project: None				Barometric Pres.: 1020.5								
Tested by: Kevin Cameron		Power: 120VAC/60Hz		Job Site: SU07								
TEST SPECIFICATIONS				Test Method								
FCC 15.109:2009 Class B				ANSI C63.4:2003								
TEST PARAMETERS												
Antenna Height(s) (m)		1.0-4.0		Test Distance (m)		3						
COMMENTS												
Device, premium earbuds, sync cable, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.												
EUT OPERATING MODES												
AV Playback												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		65		<i>Kevin M. Cameron</i> Signature								
Configuration #		2										
Results		Pass										
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.

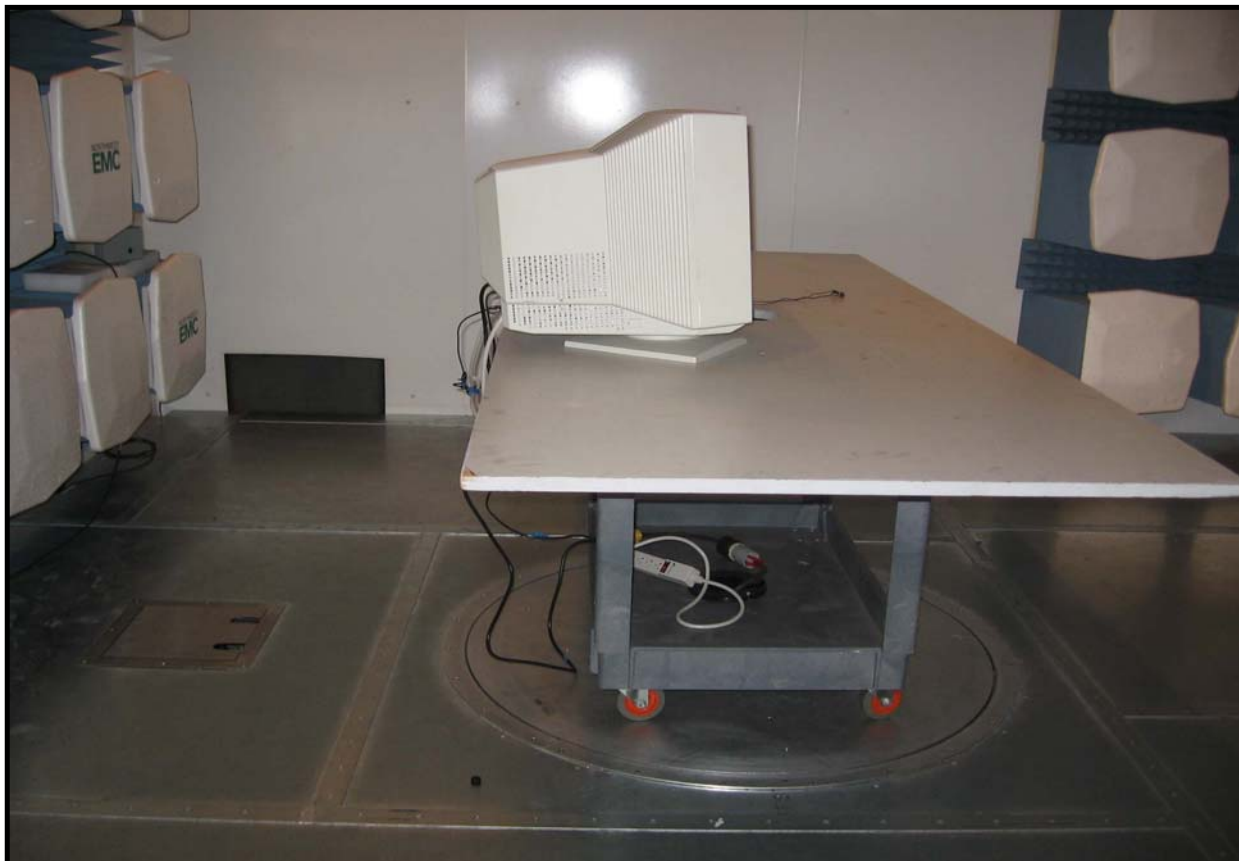


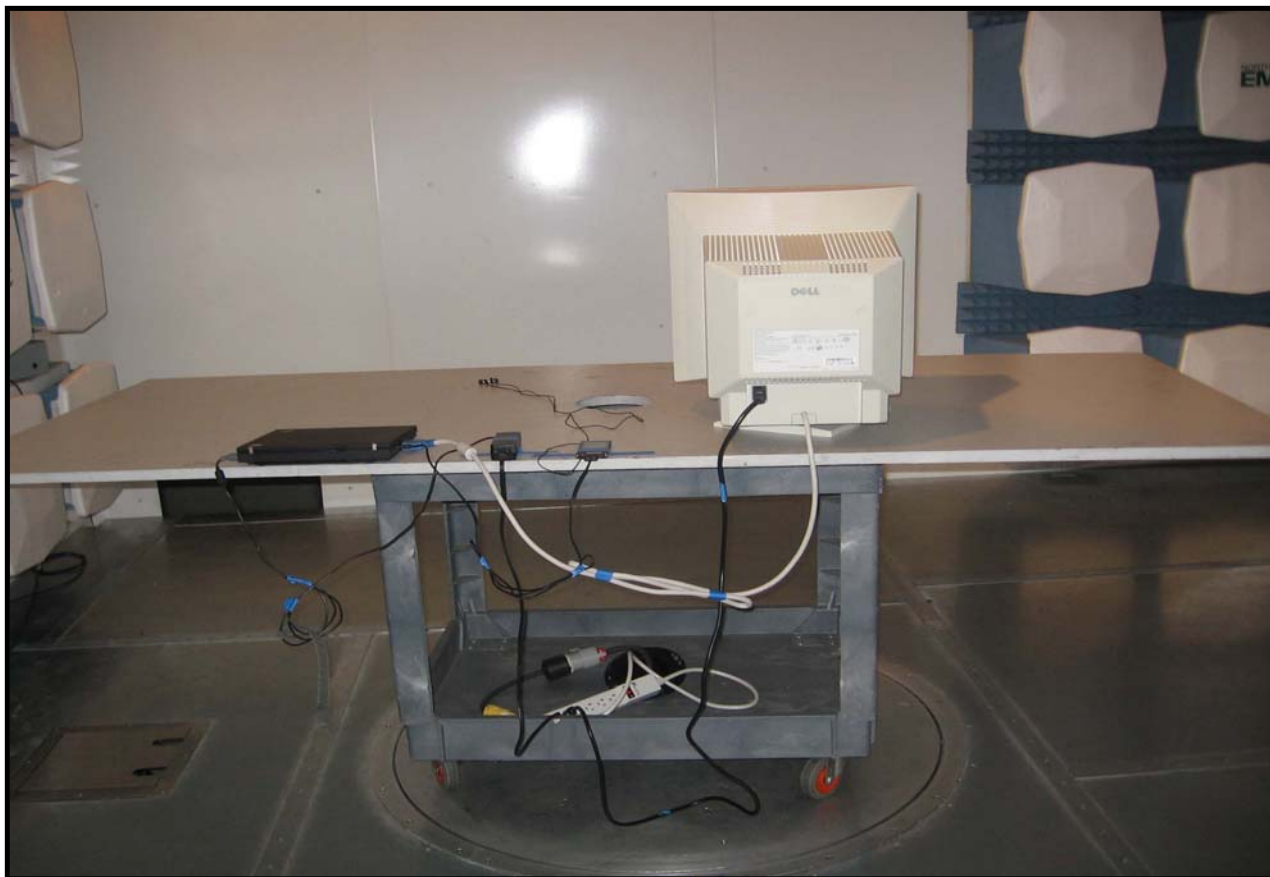


NORTHWEST		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EMC													
EUT: Zune HD		Work Order: MCSO1426											
Serial Number: 000031391815		Date: 05/21/09											
Customer: Microsoft Corporation		Temperature: 22.6											
Attendees: James Wooten		Humidity: 36%											
Project: None		Barometric Pres.: 1023.4											
Tested by: Kevin Cameron		Power: 120VAC/60Hz										Job Site: SU07	
TEST SPECIFICATIONS												Test Method	
FCC 15.109:2009 Class B												ANSI C63.4:2003	
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4				Test Distance (m)		3					
COMMENTS													
Device, premium earbuds, sync cable, laptop													
EUT OPERATING MODES													
Syncing to laptop													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		4		<i>Kevin M. Cameron</i> Signature									
Configuration #		3											
Results		Pass											
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)	
1597.587	68.1	-5.6	201.0	1.1	3.0	0.0	V-Horn	PK	0.0	62.5	74.0	-11.5	
1597.587	45.7	-5.6	201.0	1.1	3.0	0.0	V-Horn	AV	0.0	40.1	54.0	-13.9	
1330.546	62.1	-7.0	0.0	1.0	3.0	0.0	V-Horn	PK	0.0	55.1	74.0	-18.9	
1597.587	59.8	-5.6	56.0	1.1	3.0	0.0	H-Horn	PK	0.0	54.2	74.0	-19.8	
1330.546	40.8	-7.0	0.0	1.0	3.0	0.0	V-Horn	AV	0.0	33.8	54.0	-20.2	
1597.587	38.3	-5.6	56.0	1.1	3.0	0.0	H-Horn	AV	0.0	32.7	54.0	-21.3	
1991.377	55.0	-4.0	272.0	1.2	3.0	0.0	V-Horn	PK	0.0	51.0	74.0	-23.0	
1330.546	57.6	-7.0	50.0	1.2	3.0	0.0	H-Horn	PK	0.0	50.6	74.0	-23.4	
1330.546	37.3	-7.0	50.0	1.2	3.0	0.0	H-Horn	AV	0.0	30.3	54.0	-23.7	
1991.377	30.0	-4.0	272.0	1.2	3.0	0.0	V-Horn	AV	0.0	26.0	54.0	-28.0	
1991.377	49.6	-4.0	181.0	1.2	3.0	0.0	H-Horn	PK	0.0	45.6	74.0	-28.4	
1991.377	29.4	-4.0	181.0	1.2	3.0	0.0	H-Horn	AV	0.0	25.4	54.0	-28.6	

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET				PSA 2008.07.21 EMI 2008.1.9						
EUT: Zune HD		Work Order: MCSO1426										
Serial Number: 00031391815		Date: 06/05/09										
Customer: Microsoft Corporation		Temperature: 22.6 °C										
Attendees: James Wooten		Humidity: 41%										
Project: None		Barometric Pres.: 1020.5										
Tested by: Kevin Cameron		Power: 120VAC/60Hz		Job Site: SU07								
TEST SPECIFICATIONS				Test Method								
FCC 15.109:2009 Class B				ANSI C63.4:2003								
TEST PARAMETERS												
Antenna Height(s) (m)		1.0-4.0		Test Distance (m)		3						
COMMENTS												
Device, premium earbuds, sync cable, laptop												
EUT OPERATING MODES												
Syncing to Laptop												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		64		<i>Kevin M. Cameron</i> Signature								
Configuration #		3										
Results		Pass										
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.

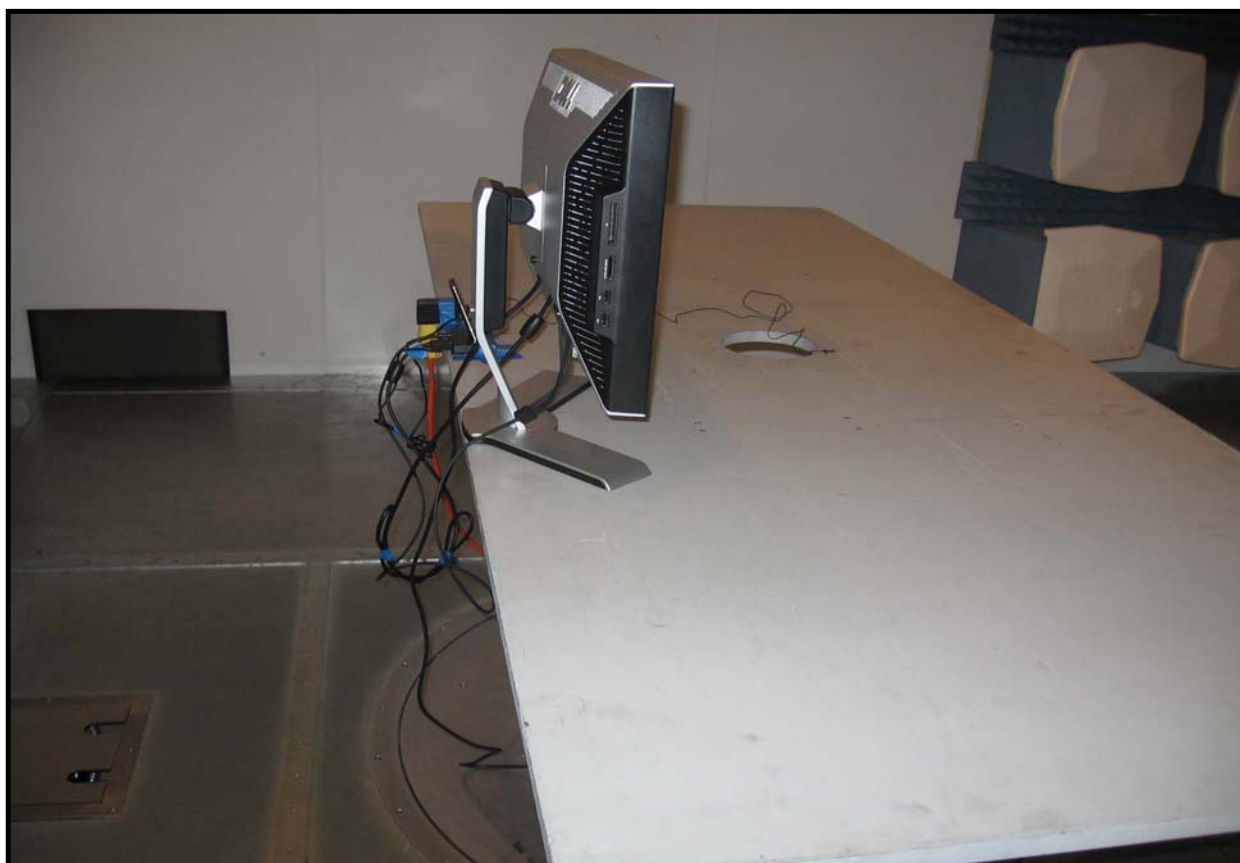


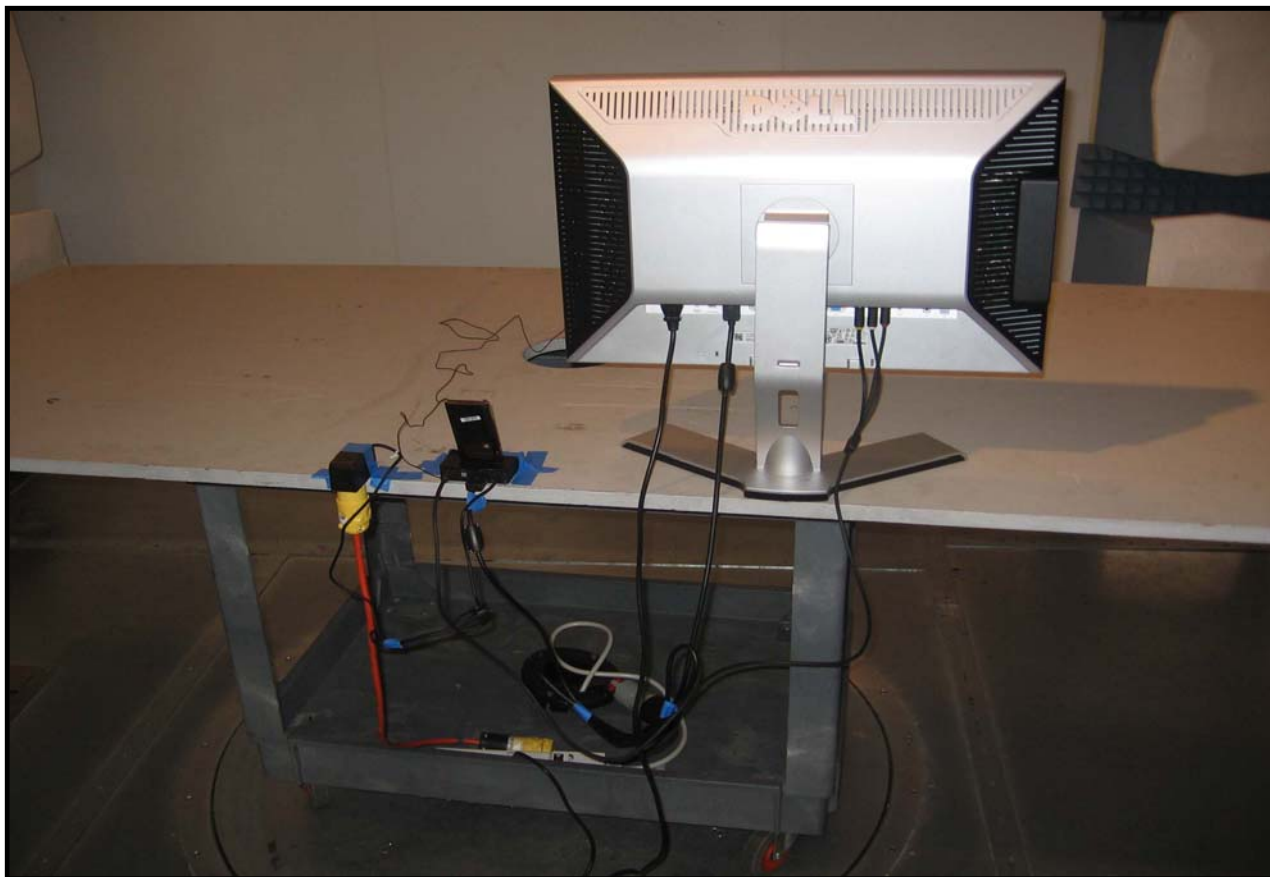


NORTHWEST		RADIATED EMISSIONS DATA SHEET				PSA 2008.07.21 EMI 2008.1.9						
EMC												
EUT: Zune HD				Work Order: MCSO1426								
Serial Number: 000031391815				Date: 05/20/09								
Customer: Microsoft Corporation				Temperature: 23.5								
Attendees: James Wooten				Humidity: 40%								
Project: None				Barometric Pres.: 1024.9								
Tested by: Kevin Cameron			Power: 120VAC/60Hz		Job Site: SU07							
TEST SPECIFICATIONS						Test Method						
FCC 15.109:2009 Class B						ANSI C63.4:2003						
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m)		3						
COMMENTS												
Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.												
EUT OPERATING MODES												
AV Playback, Composite out												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	1		Signature									
Configuration #	4											
Results	Pass											
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)
1587.933	58.2	-5.6	207.0	1.2	3.0	0.0	V-Horn	PK	0.0	52.6	74.0	-21.4
1588.437	32.6	-5.6	207.0	1.2	3.0	0.0	V-Horn	AV	0.0	27.0	54.0	-27.0
1589.204	31.3	-5.6	171.0	1.2	3.0	0.0	H-Horn	AV	0.0	25.7	54.0	-28.3
1588.367	47.1	-5.6	171.0	1.2	3.0	0.0	H-Horn	PK	0.0	41.5	74.0	-32.5

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD						Work Order: MCSO1426							
Serial Number: 00031391815						Date: 06/05/09							
Customer: Microsoft Corporation						Temperature: 22.6 °C							
Attendees: James Wooten						Humidity: 41%							
Project: None						Barometric Pres.: 1020.5							
Tested by: Kevin Cameron				Power: 120VAC/60Hz		Job Site: SU07							
TEST SPECIFICATIONS												Test Method	
FCC 15.109:2009 Class B												ANSI C63.4:2003	
TEST PARAMETERS													
Antenna Height(s) (m)		1.0-4.0				Test Distance (m)		3					
COMMENTS													
Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.													
EUT OPERATING MODES													
AV Playback, Composite Out													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		64		<i>Kevin M. Cameron</i> Signature									
Configuration #		4											
Results		Pass											
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)	

All emissions were greater than 10db below the limit.

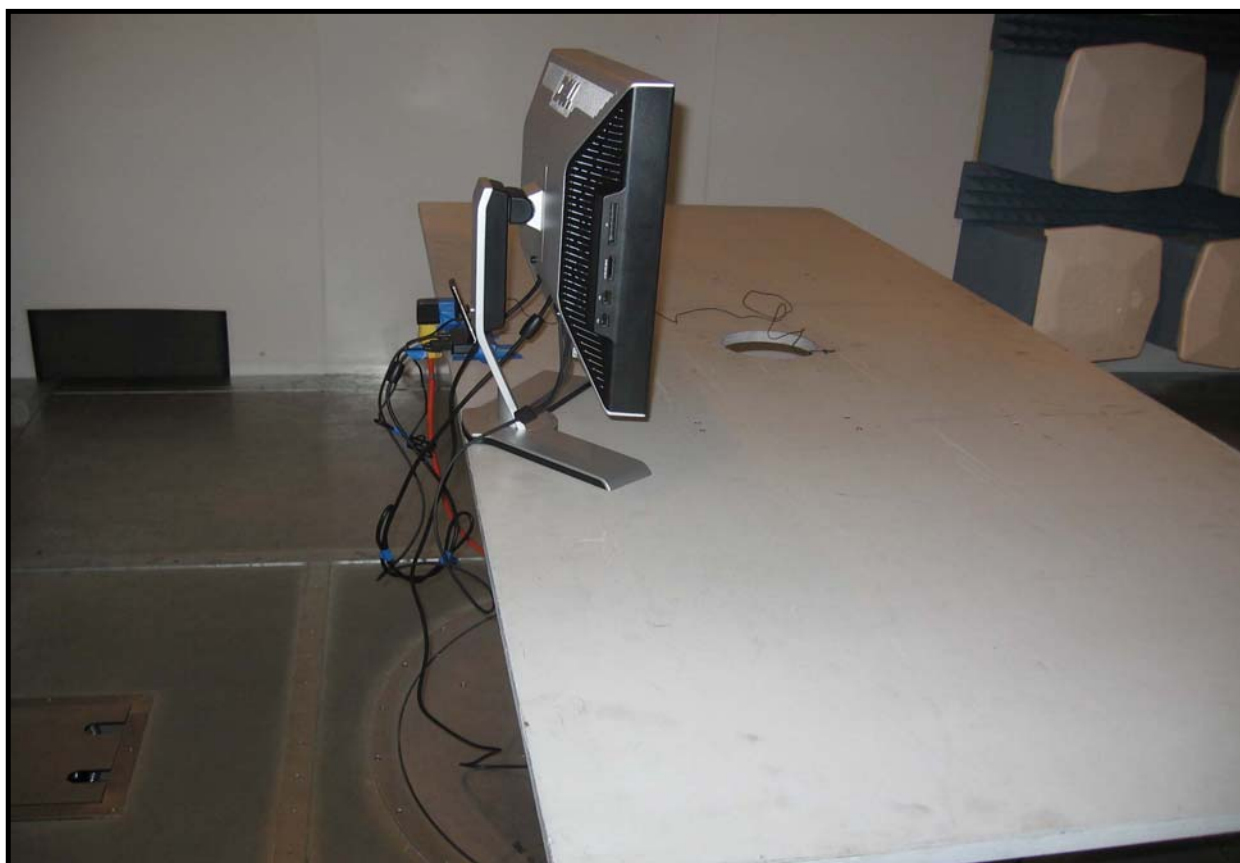


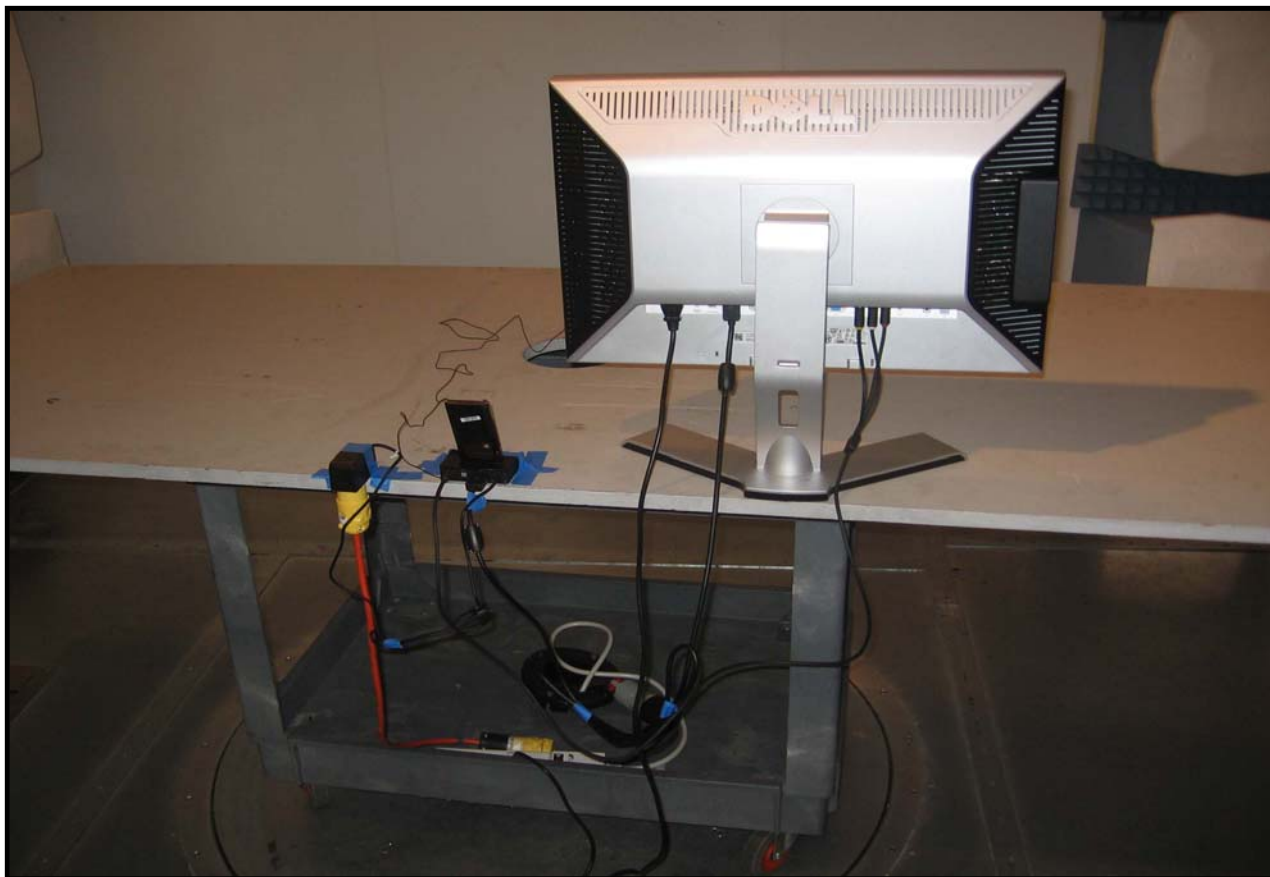


NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET										PSA 2008.07.21 EMI 2008.1.9	
EUT: Zune HD						Work Order: MCS01426							
Serial Number: 000031391815						Date: 05/20/09							
Customer: Microsoft Corporation						Temperature: 23.5							
Attendees: James Wooten						Humidity: 40%							
Project: None						Barometric Pres.: 1024.9							
Tested by: Kevin Cameron				Power: 120VAC/60Hz		Job Site: SU07							
TEST SPECIFICATIONS													
FCC 15.109:2009 Class B						Test Method ANSI C63.4:2003							
TEST PARAMETERS													
Antenna Height(s) (m)		1 - 4				Test Distance (m)		3					
COMMENTS													
Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.													
EUT OPERATING MODES													
AV Playback, 720p													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
Run #		2				<i>Kevin M. Cameron</i> Signature							
Configuration #		5											
Results		Pass											
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)	
1485.035	43.8	-6.1	185.0	1.1	3.0	0.0	V-Horn	AV	0.0	37.7	54.0	-16.3	
1485.035	41.8	-6.1	202.0	1.2	3.0	0.0	H-Horn	AV	0.0	35.7	54.0	-18.3	
1783.646	38.8	-4.5	227.0	1.3	3.0	0.0	V-Horn	AV	0.0	34.3	54.0	-19.7	
2970.065	36.3	-2.3	17.0	1.3	3.0	0.0	V-Horn	AV	0.0	34.0	54.0	-20.0	
1113.831	40.5	-8.3	155.0	1.2	3.0	0.0	H-Horn	AV	0.0	32.2	54.0	-21.8	
1783.646	36.3	-4.5	271.0	1.6	3.0	0.0	H-Horn	AV	0.0	31.8	54.0	-22.2	
2970.065	34.1	-2.3	228.0	1.4	3.0	0.0	H-Horn	AV	0.0	31.8	54.0	-22.2	
1113.831	39.3	-8.3	233.0	1.2	3.0	0.0	V-Horn	AV	0.0	31.0	54.0	-23.0	
1485.035	54.1	-6.1	185.0	1.1	3.0	0.0	V-Horn	PK	0.0	48.0	74.0	-26.0	
1113.534	54.2	-8.3	233.0	1.2	3.0	0.0	V-Horn	PK	0.0	45.9	74.0	-28.1	
2427.670	29.6	-4.1	231.0	1.4	3.0	0.0	V-Horn	AV	0.0	25.5	54.0	-28.5	
1485.035	51.6	-6.1	202.0	1.2	3.0	0.0	H-Horn	PK	0.0	45.5	74.0	-28.5	
1783.646	49.5	-4.5	271.0	1.6	3.0	0.0	H-Horn	PK	0.0	45.0	74.0	-29.0	
2970.065	47.2	-2.3	17.0	1.3	3.0	0.0	V-Horn	PK	0.0	44.9	74.0	-29.1	
2427.670	28.6	-4.1	150.0	1.7	3.0	0.0	H-Horn	AV	0.0	24.5	54.0	-29.5	
1783.646	48.8	-4.5	227.0	1.3	3.0	0.0	V-Horn	PK	0.0	44.3	74.0	-29.7	
1113.831	51.9	-8.3	155.0	1.2	3.0	0.0	H-Horn	PK	0.0	43.6	74.0	-30.4	
2970.065	45.8	-2.3	228.0	1.4	3.0	0.0	H-Horn	PK	0.0	43.5	74.0	-30.5	
2427.670	42.4	-4.1	231.0	1.4	3.0	0.0	V-Horn	PK	0.0	38.3	74.0	-35.7	
2427.670	40.3	-4.1	150.0	1.7	3.0	0.0	H-Horn	PK	0.0	36.2	74.0	-37.8	

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET		PSA 2008.07.21 EMI 2008.1.9								
EUT: Zune HD		Work Order: MCSO1426										
Serial Number: 00031391815		Date: 06/05/09										
Customer: Microsoft Corporation		Temperature: 22.6 °C										
Attendees: James Wooten		Humidity: 41%										
Project: None		Barometric Pres.: 1020.5										
Tested by: Kevin Cameron		Power: 120VAC/60Hz		Job Site: SU07								
TEST SPECIFICATIONS			Test Method									
FCC 15.109:2009 Class B			ANSI C63.4:2003									
TEST PARAMETERS												
Antenna Height(s) (m)		1.0-4.0		Test Distance (m) 3								
COMMENTS												
Device, AV cable to TV, HDMI cable to TV, AV dock sn:091800046, Delta PS mn:DPSN-8CB-A rev S3 sn:00837702385.												
EUT OPERATING MODES												
AV Playback, 720p												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		66		Signature <i>Kevin M. Cameron</i>								
Configuration #		5										
Results		Pass										
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.

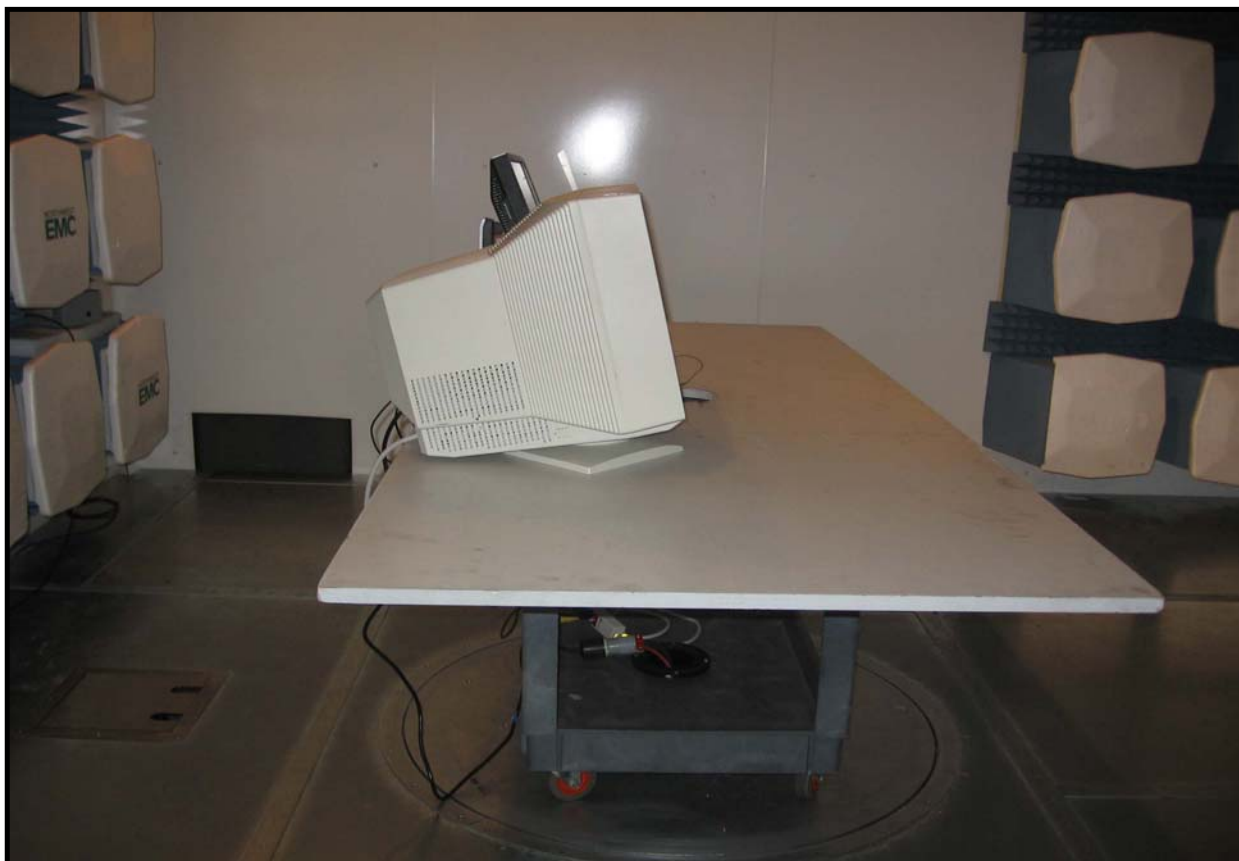




NORTHWEST		RADIATED EMISSIONS DATA SHEET				PSA 2008.07.21 EMI 2008.1.9						
EMC												
EUT: Zune HD				Work Order: MCSO1426								
Serial Number: 000031391815				Date: 05/20/09								
Customer: Microsoft Corporation				Temperature: 23.5								
Attendees: James Wooten				Humidity: 40%								
Project: None				Barometric Pres.: 1024.9								
Tested by: Kevin Cameron			Power: 120VAC/60Hz		Job Site: SU07							
TEST SPECIFICATIONS				Test Method								
FCC 15.109:2009 Class B				ANSI C63.4:2003								
TEST PARAMETERS												
Antenna Height(s) (m)		1 - 4		Test Distance (m)		3						
COMMENTS												
Device, AV cable to TV, AV dock sn:091800046, laptop, monitor												
EUT OPERATING MODES												
Syncing to laptop												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #	3		Signature									
Configuration #	6											
Results	Pass											
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)
1592.027	67.4	-5.6	207.0	1.5	3.0	0.0	V-Horn	PK	0.0	61.8	74.0	-12.2
1328.034	59.1	-7.0	347.0	1.5	3.0	0.0	V-Horn	PK	0.0	52.1	74.0	-21.9
1592.027	56.6	-5.6	245.0	1.6	3.0	0.0	H-Horn	PK	0.0	51.0	74.0	-23.0
1592.027	36.4	-5.6	207.0	1.5	3.0	0.0	V-Horn	AV	0.0	30.8	54.0	-23.2
1328.034	35.5	-7.0	347.0	1.5	3.0	0.0	V-Horn	AV	0.0	28.5	54.0	-25.5
1994.827	30.9	-4.0	339.0	1.7	3.0	0.0	H-Horn	AV	0.0	26.9	54.0	-27.1
1592.027	31.4	-5.6	245.0	1.6	3.0	0.0	H-Horn	AV	0.0	25.8	54.0	-28.2
1328.034	32.0	-7.0	64.0	1.1	3.0	0.0	H-Horn	AV	0.0	25.0	54.0	-29.0
1994.827	28.8	-4.0	333.0	1.5	3.0	0.0	V-Horn	AV	0.0	24.8	54.0	-29.2
1328.034	51.2	-7.0	64.0	1.1	3.0	0.0	H-Horn	PK	0.0	44.2	74.0	-29.8
1994.827	44.6	-4.0	339.0	1.7	3.0	0.0	H-Horn	PK	0.0	40.6	74.0	-33.4
1994.827	42.1	-4.0	333.0	1.5	3.0	0.0	V-Horn	PK	0.0	38.1	74.0	-35.9

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET				PSA 2008.07.21 EMI 2008.1.9						
EUT: Zune HD				Work Order: MCSO1426								
Serial Number: 00031391815				Date: 06/05/09								
Customer: Microsoft Corporation				Temperature: 22.6 °C								
Attendees: James Wooten				Humidity: 41%								
Project: None				Barometric Pres.: 1020.5								
Tested by: Kevin Cameron		Power: 120VAC/60Hz		Job Site: SU07								
TEST SPECIFICATIONS				Test Method								
FCC 15.109:2009 Class B				ANSI C63.4:2003								
TEST PARAMETERS												
Antenna Height(s) (m)		1.0-4.0		Test Distance (m)		3						
COMMENTS												
Device, AV cable to TV, AV dock sn:091800046, laptop, monitor												
EUT OPERATING MODES												
Syncing to Laptop												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
Run #		67		<i>Kevin M. Cameron</i> Signature								
Configuration #		6										
Results		Pass										
Freq (MHz)	Amplitude (dBuV)	Preamp (dB)	Antenna Height (m)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector (blank equal peaks [PK] from scan)	Distance Adjustment (dB)	Adjusted unknown units	Spec. Limit unknown units	Compared to Spec. (dB)

All emissions were greater than 10db below the limit.





EMC**CONDUCTED 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, 720p

AV Playback

POWER SETTINGS INVESTIGATED

230VAC/50Hz

120VAC/60Hz

CONFIGURATIONS INVESTIGATED

MCSO1426-2,5

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	1/13/2009	13 mo
LISN	Solar	9252-50-R-24-BNC	LIK	1/13/2009	13 mo
SU07 cables d,c,a			SUC	12/12/2007	24 mo
Attenuator, 20db, 'BNC'	Pasternack		AUL	1/13/2009	13 mo
High Pass Filter	TTE	H647-100k-50-718B	HFB	1/13/2009	13 mo
Receiver	Rohde & Schwarz	ESCI	ARG	2/9/2009	24 mo

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

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

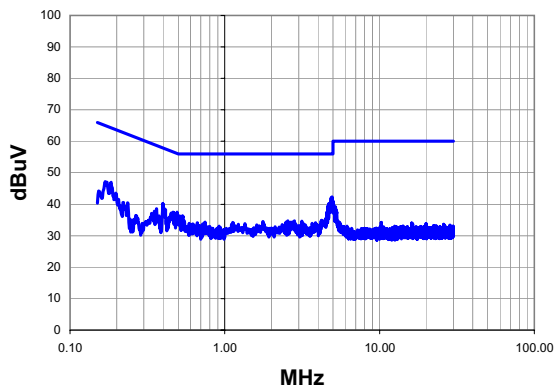
Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 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 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm.

EMC

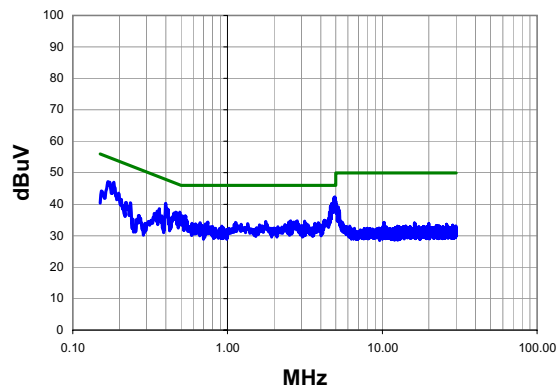
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09		
Project:	None	Temperature:	22.6		
Job Site:	SU01	Humidity:	41		
Serial Number:	31391815	Barometric Pres.:	1020.5	Tested by: Travis Rychener	
EUT:	Zune HD				
Configuration:	2				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	120VAC/60Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Device, premium earbuds, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385				
Test Specifications		Class B		Test Method	
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)	
FCC 15.107:2009				ANSI C63.4:2003	
ICES-003:2004				CISPR 22:2005 (Amended by A1:2005 and A2:2006)	
Run #	1	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)
4.936	21.8	20.5	42.3	56.0	-13.7
4.856	21.5	20.5	42.0	56.0	-14.0
4.984	20.1	20.5	40.6	56.0	-15.4
4.680	18.7	20.5	39.2	56.0	-16.8
4.624	18.7	20.5	39.2	56.0	-16.8
0.184	25.8	21.2	47.0	64.3	-17.3
0.397	19.7	20.6	40.3	57.9	-17.6
0.169	25.8	21.4	47.2	65.0	-17.8
4.552	17.0	20.5	37.5	56.0	-18.5
0.492	17.0	20.5	37.5	56.1	-18.6
5.000	20.4	20.5	40.9	60.0	-19.1
0.463	16.9	20.5	37.4	56.6	-19.2
0.531	15.8	20.5	36.3	56.0	-19.7
0.363	17.9	20.6	38.5	58.7	-20.1
5.200	18.6	20.5	39.1	60.0	-20.9
0.351	17.1	20.6	37.7	58.9	-21.2
2.816	14.2	20.5	34.7	56.0	-21.3
2.560	14.2	20.5	34.7	56.0	-21.3
3.144	14.1	20.5	34.6	56.0	-21.4
1.768	14.1	20.5	34.6	56.0	-21.4

Peak Data - vs - Average Limit

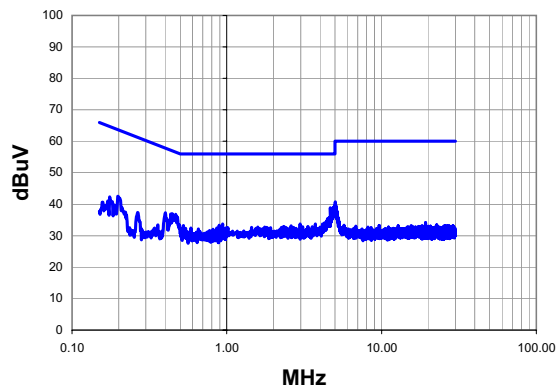
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.936	21.8	20.5	42.3	46.0	-3.7
4.856	21.5	20.5	42.0	46.0	-4.0
4.984	20.1	20.5	40.6	46.0	-5.4
4.680	18.7	20.5	39.2	46.0	-6.8
4.624	18.7	20.5	39.2	46.0	-6.8
0.184	25.8	21.2	47.0	54.3	-7.3
0.397	19.7	20.6	40.3	47.9	-7.6
0.169	25.8	21.4	47.2	55.0	-7.8
4.552	17.0	20.5	37.5	46.0	-8.5
0.492	17.0	20.5	37.5	46.1	-8.6
5.000	20.4	20.5	40.9	50.0	-9.1
0.463	16.9	20.5	37.4	46.6	-9.2
0.531	15.8	20.5	36.3	46.0	-9.7
0.363	17.9	20.6	38.5	48.7	-10.1
5.200	18.6	20.5	39.1	50.0	-10.9
0.351	17.1	20.6	37.7	48.9	-11.2
2.816	14.2	20.5	34.7	46.0	-11.3
2.560	14.2	20.5	34.7	46.0	-11.3
3.144	14.1	20.5	34.6	46.0	-11.4
1.768	14.1	20.5	34.6	46.0	-11.4

EMC

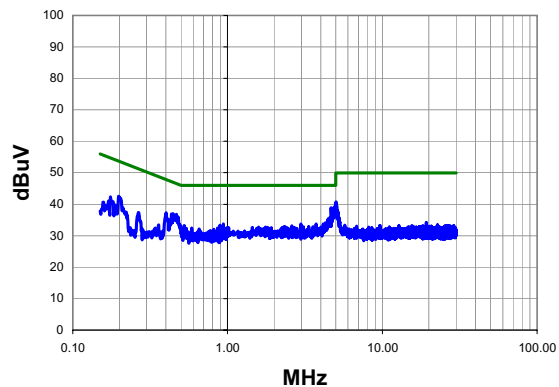
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	31391815	Barometric Pres.:	1020.5	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	2			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120VAC/60Hz			
Operating Mode:	AV Playback			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			
Test Specifications		Class B		Test Method
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
FCC 15.107:2009				ANSI C63.4:2003
ICES-003:2004				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
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)
4.672	18.3	20.5	38.8	56.0	-17.2
5.020	20.2	20.5	40.7	60.0	-19.3
0.444	16.4	20.6	37.0	57.0	-20.0
0.402	16.7	20.6	37.3	57.8	-20.5
0.198	21.4	21.1	42.5	63.7	-21.2
0.939	13.3	20.5	33.8	56.0	-22.2
3.728	13.2	20.5	33.7	56.0	-22.3
2.976	13.2	20.5	33.7	56.0	-22.3
0.176	21.1	21.3	42.4	64.7	-22.3
0.893	12.9	20.5	33.4	56.0	-22.6
0.524	12.7	20.5	33.2	56.0	-22.8
2.600	12.7	20.5	33.2	56.0	-22.8
2.336	12.5	20.5	33.0	56.0	-23.0
3.344	12.4	20.5	32.9	56.0	-23.1
3.096	12.3	20.5	32.8	56.0	-23.2
1.760	12.3	20.5	32.8	56.0	-23.2
1.584	12.3	20.5	32.8	56.0	-23.2
2.704	12.2	20.5	32.7	56.0	-23.3
2.256	12.2	20.5	32.7	56.0	-23.3
3.064	12.1	20.5	32.6	56.0	-23.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.672	18.3	20.5	38.8	46.0	-7.2
5.020	20.2	20.5	40.7	50.0	-9.3
0.444	16.4	20.6	37.0	47.0	-10.0
0.402	16.7	20.6	37.3	47.8	-10.5
0.198	21.4	21.1	42.5	53.7	-11.2
0.939	13.3	20.5	33.8	46.0	-12.2
3.728	13.2	20.5	33.7	46.0	-12.3
2.976	13.2	20.5	33.7	46.0	-12.3
0.176	21.1	21.3	42.4	54.7	-12.3
0.893	12.9	20.5	33.4	46.0	-12.6
0.524	12.7	20.5	33.2	46.0	-12.8
2.600	12.7	20.5	33.2	46.0	-12.8
2.336	12.5	20.5	33.0	46.0	-13.0
3.344	12.4	20.5	32.9	46.0	-13.1
3.096	12.3	20.5	32.8	46.0	-13.2
1.760	12.3	20.5	32.8	46.0	-13.2
1.584	12.3	20.5	32.8	46.0	-13.2
2.704	12.2	20.5	32.7	46.0	-13.3
2.256	12.2	20.5	32.7	46.0	-13.3
3.064	12.1	20.5	32.6	46.0	-13.4

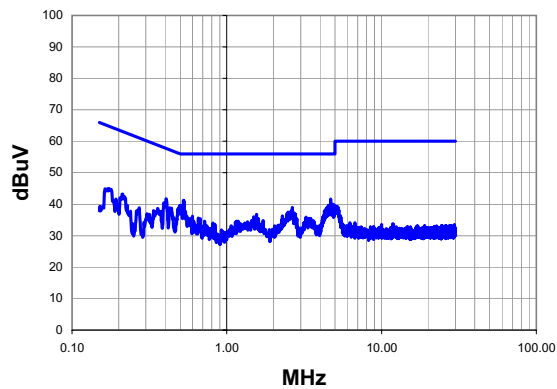
EMC

CONDUCTED EMISSIONS

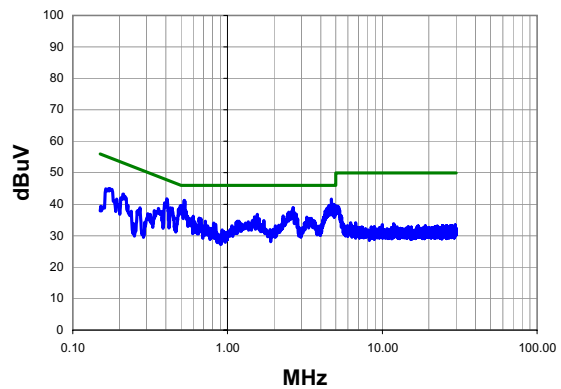
Work Order:	MCSO1426	Date:	05/29/09		
Project:	None	Temperature:	22.6		
Job Site:	SU01	Humidity:	41		
Serial Number:	31391815	Barometric Pres.:	1020.5		
				Tested by:	Travis Rychener
EUT:	Zune HD				
Configuration:	2				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	230V/50Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Device, premium earbuds, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385				

Test Specifications	Class B	Test Method
EN 55022: 2006 + A1:2007		CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	3	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)
4.696	21.1	20.5	41.6	56.0	-14.4
0.524	20.7	20.5	41.2	56.0	-14.8
0.405	21.2	20.6	41.8	57.8	-16.0
4.864	19.4	20.5	39.9	56.0	-16.1
4.792	19.2	20.5	39.7	56.0	-16.3
0.500	19.0	20.5	39.5	56.0	-16.5
5.000	18.9	20.5	39.4	56.0	-16.6
2.656	18.5	20.5	39.0	56.0	-17.0
0.429	18.3	20.6	38.9	57.3	-18.4
2.704	16.9	20.5	37.4	56.0	-18.6
1.560	16.3	20.5	36.8	56.0	-19.2
2.288	15.8	20.5	36.3	56.0	-19.7
0.174	23.7	21.3	45.0	64.8	-19.8
0.599	15.7	20.5	36.2	56.0	-19.8
0.211	22.2	21.0	43.2	63.2	-19.9
1.496	15.5	20.5	36.0	56.0	-20.0
3.248	15.4	20.5	35.9	56.0	-20.1
0.357	18.0	20.6	38.6	58.8	-20.2
0.655	15.1	20.5	35.6	56.0	-20.4
3.488	15.0	20.5	35.5	56.0	-20.5

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.696	21.1	20.5	41.6	46.0	-4.4
0.524	20.7	20.5	41.2	46.0	-4.8
0.405	21.2	20.6	41.8	47.8	-6.0
4.864	19.4	20.5	39.9	46.0	-6.1
4.792	19.2	20.5	39.7	46.0	-6.3
0.500	19.0	20.5	39.5	46.0	-6.5
5.000	18.9	20.5	39.4	46.0	-6.6
2.656	18.5	20.5	39.0	46.0	-7.0
0.429	18.3	20.6	38.9	47.3	-8.4
2.704	16.9	20.5	37.4	46.0	-8.6
1.560	16.3	20.5	36.8	46.0	-9.2
2.288	15.8	20.5	36.3	46.0	-9.7
0.174	23.7	21.3	45.0	54.8	-9.8
0.599	15.7	20.5	36.2	46.0	-9.8
0.211	22.2	21.0	43.2	53.2	-9.9
1.496	15.5	20.5	36.0	46.0	-10.0
3.248	15.4	20.5	35.9	46.0	-10.1
0.357	18.0	20.6	38.6	48.8	-10.2
0.655	15.1	20.5	35.6	46.0	-10.4
3.488	15.0	20.5	35.5	46.0	-10.5

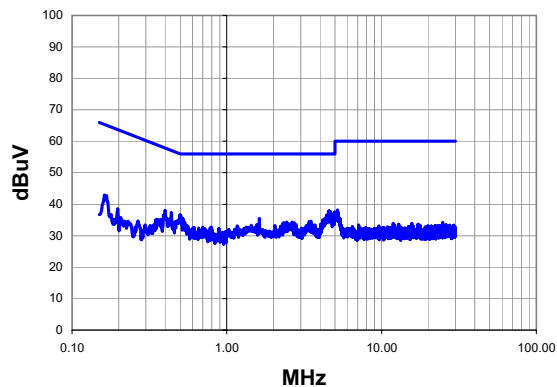
EMC

CONDUCTED EMISSIONS

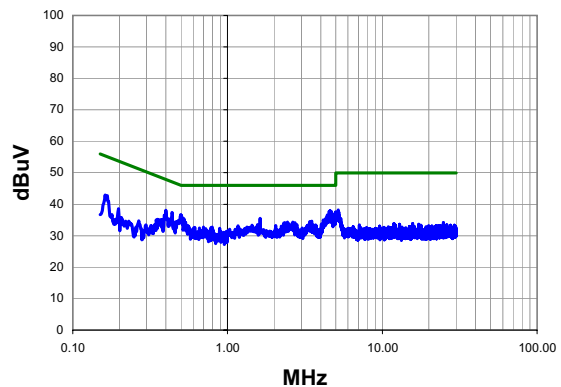
Work Order:	MCSO1426	Date:	05/29/09		
Project:	None	Temperature:	22.6		
Job Site:	SU01	Humidity:	41		
Serial Number:	31391815	Barometric Pres.:	1020.5		
				Tested by:	Travis Rychener
EUT:	Zune HD				
Configuration:	2				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	230V/50Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Device, premium earbuds, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385				

Test Specifications	Class B	Test Method
EN 55022: 2006 + A1:2007		CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	4	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)
4.600	17.4	20.5	37.9	56.0	-18.1
4.544	17.3	20.5	37.8	56.0	-18.2
0.499	16.2	20.5	36.7	56.0	-19.3
0.437	16.8	20.6	37.4	57.1	-19.7
0.400	17.5	20.6	38.1	57.9	-19.8
1.624	15.0	20.5	35.5	56.0	-20.5
0.522	14.9	20.5	35.4	56.0	-20.6
3.496	14.1	20.5	34.6	56.0	-21.4
3.408	14.0	20.5	34.5	56.0	-21.5
2.640	13.8	20.5	34.3	56.0	-21.7
5.180	17.6	20.5	38.1	60.0	-21.9
2.728	13.6	20.5	34.1	56.0	-21.9
0.162	21.5	21.4	42.9	65.4	-22.4
1.568	13.1	20.5	33.6	56.0	-22.4
2.800	13.0	20.5	33.5	56.0	-22.5
2.048	12.8	20.5	33.3	56.0	-22.7
1.168	12.7	20.5	33.2	56.0	-22.8
0.699	12.3	20.5	32.8	56.0	-23.2
0.794	12.3	20.5	32.8	56.0	-23.2
0.614	12.1	20.5	32.6	56.0	-23.4

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
4.600	17.4	20.5	37.9	46.0	-8.1
4.544	17.3	20.5	37.8	46.0	-8.2
0.499	16.2	20.5	36.7	46.0	-9.3
0.437	16.8	20.6	37.4	47.1	-9.7
0.400	17.5	20.6	38.1	47.9	-9.8
1.624	15.0	20.5	35.5	46.0	-10.5
0.522	14.9	20.5	35.4	46.0	-10.6
3.496	14.1	20.5	34.6	46.0	-11.4
3.408	14.0	20.5	34.5	46.0	-11.5
2.640	13.8	20.5	34.3	46.0	-11.7
5.180	17.6	20.5	38.1	50.0	-11.9
2.728	13.6	20.5	34.1	46.0	-11.9
0.162	21.5	21.4	42.9	55.4	-12.4
1.568	13.1	20.5	33.6	46.0	-12.4
2.800	13.0	20.5	33.5	46.0	-12.5
2.048	12.8	20.5	33.3	46.0	-12.7
1.168	12.7	20.5	33.2	46.0	-12.8
0.699	12.3	20.5	32.8	46.0	-13.2
0.794	12.3	20.5	32.8	46.0	-13.2
0.614	12.1	20.5	32.6	46.0	-13.4

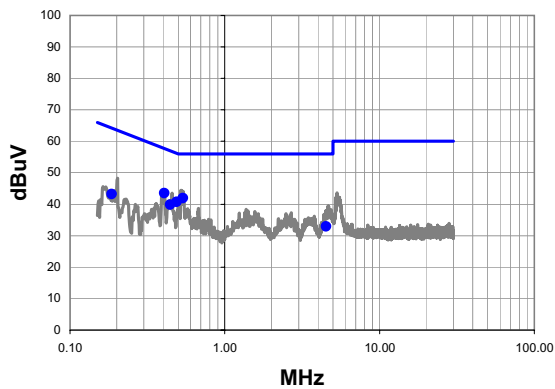
EMC

CONDUCTED EMISSIONS

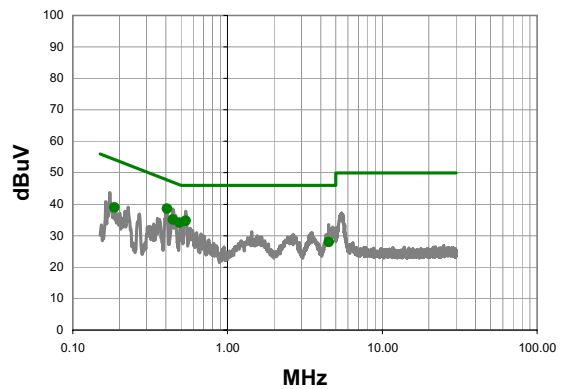
Work Order:	MCSO1426	Date:	05/29/09		
Project:	None	Temperature:	22.6		
Job Site:	SU01	Humidity:	41		
Serial Number:	334491715	Barometric Pres.:	1020.5		
				Tested by:	Travis Rychener
EUT:	Zune HD				
Configuration:	2				
Customer:	Microsoft Corporation				
Attendees:	James Wooten				
EUT Power:	230V/50Hz				
Operating Mode:	AV Playback				
Deviations:	No deviations.				
Comments:	Device, premium earbuds, Delta PS mn: DPSN-8CB-A rev S3 sn: 002487005752				

Test Specifications		Class B	Test Method		
EN 55022: 2006 + A1:2007			CISPR 22:2005 (Amended by A1:2005 and A2:2006)		
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)
0.536	21.4	20.5	41.9	56.0	-14.1
0.406	22.9	20.6	43.5	57.7	-14.2
0.490	20.2	20.5	40.7	56.2	-15.4
0.444	19.3	20.6	39.9	57.0	-17.1
0.186	22.0	21.2	43.2	64.2	-21.0
4.508	12.4	20.5	32.9	56.0	-23.1

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.406	18.0	20.6	38.6	47.7	-9.1
0.536	14.2	20.5	34.7	46.0	-11.3
0.444	14.6	20.6	35.2	47.0	-11.8
0.490	13.6	20.5	34.1	46.2	-12.0
0.186	17.8	21.2	39.0	54.2	-15.2
4.508	7.5	20.5	28.0	46.0	-18.0

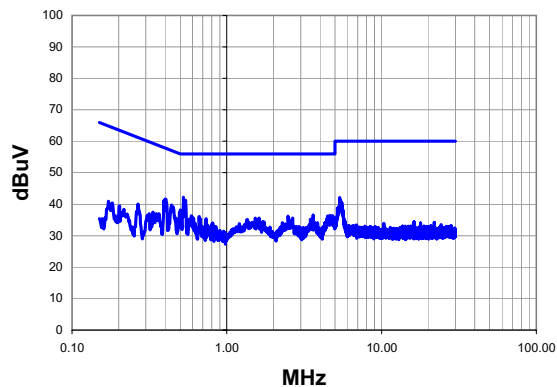
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CONDUCTED EMISSIONS

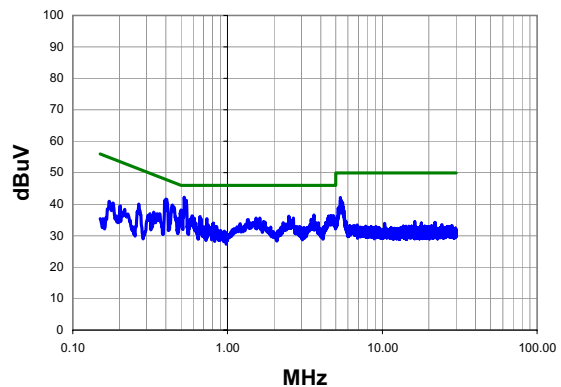
Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	334491715	Barometric Pres.:	1020.5	
		Tested by:		Travis Rychener
EUT:	Zune HD			
Configuration:	2			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	230V/50Hz			
Operating Mode:	AV Playback			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, Delta PS mn: DPSN-8CB-A rev S3 sn: 002487005752			

Test Specifications	Class B	Test Method
EN 55022: 2006 + A1:2007		CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	6	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)
0.526	21.7	20.5	42.2	56.0	-13.8
0.400	21.0	20.6	41.6	57.9	-16.3
0.393	20.6	20.6	41.2	58.0	-16.8
0.439	19.2	20.6	39.8	57.1	-17.3
0.500	17.7	20.5	38.2	56.0	-17.8
5.370	21.6	20.6	42.2	60.0	-17.8
3.616	16.1	20.5	36.6	56.0	-19.4
4.824	15.9	20.5	36.4	56.0	-19.6
0.590	15.8	20.5	36.3	56.0	-19.7
2.488	15.7	20.5	36.2	56.0	-19.8
0.595	15.6	20.5	36.1	56.0	-19.9
0.663	15.6	20.5	36.1	56.0	-19.9
2.512	15.2	20.5	35.7	56.0	-20.3
2.664	15.1	20.5	35.6	56.0	-20.4
1.528	15.1	20.5	35.6	56.0	-20.4
1.616	15.1	20.5	35.6	56.0	-20.4
0.609	15.0	20.5	35.5	56.0	-20.5
0.735	14.9	20.5	35.4	56.0	-20.6
0.675	14.8	20.5	35.3	56.0	-20.7
3.472	14.7	20.5	35.2	56.0	-20.8

Peak Data - vs - Average Limit

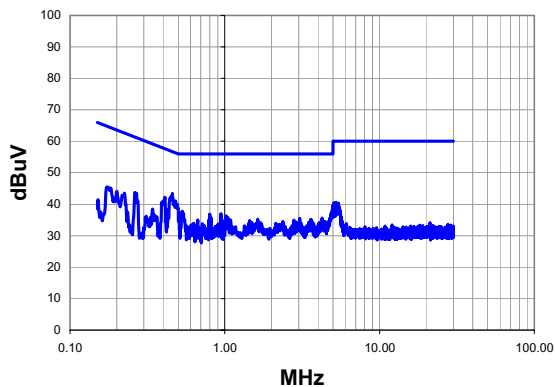
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.526	21.7	20.5	42.2	46.0	-3.8
0.400	21.0	20.6	41.6	47.9	-6.3
0.393	20.6	20.6	41.2	48.0	-6.8
0.439	19.2	20.6	39.8	47.1	-7.3
0.500	17.7	20.5	38.2	46.0	-7.8
5.370	21.6	20.6	42.2	50.0	-7.8
3.616	16.1	20.5	36.6	46.0	-9.4
4.824	15.9	20.5	36.4	46.0	-9.6
0.590	15.8	20.5	36.3	46.0	-9.7
2.488	15.7	20.5	36.2	46.0	-9.8
0.595	15.6	20.5	36.1	46.0	-9.9
0.663	15.6	20.5	36.1	46.0	-9.9
2.512	15.2	20.5	35.7	46.0	-10.3
2.664	15.1	20.5	35.6	46.0	-10.4
1.528	15.1	20.5	35.6	46.0	-10.4
1.616	15.1	20.5	35.6	46.0	-10.4
0.609	15.0	20.5	35.5	46.0	-10.5
0.735	14.9	20.5	35.4	46.0	-10.6
0.675	14.8	20.5	35.3	46.0	-10.7
3.472	14.7	20.5	35.2	46.0	-10.8

EMC

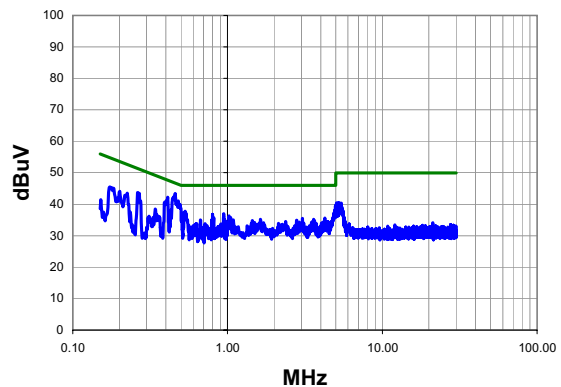
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	334491715	Barometric Pres.:	1020.5	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	2			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120V/60Hz			
Operating Mode:	AV Playback			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, Delta PS mn: DPSN-8CB-A rev S3 sn: 002487005752			
Test Specifications		Class B		Test Method
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
FCC 15.107:2009				ANSI C63.4:2003
ICES-003:2004				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
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)
0.458	22.9	20.6	43.5	56.7	-13.3
0.410	21.7	20.6	42.3	57.6	-15.4
5.000	18.9	20.5	39.4	56.0	-16.6
0.262	22.9	20.8	43.7	61.4	-17.6
0.533	17.3	20.5	37.8	56.0	-18.2
0.944	16.5	20.5	37.0	56.0	-19.0
0.225	22.6	21.0	43.6	62.6	-19.1
0.799	16.3	20.5	36.8	56.0	-19.2
0.174	24.2	21.3	45.5	64.8	-19.3
0.201	23.0	21.1	44.1	63.6	-19.5
5.280	19.9	20.6	40.5	60.0	-19.5
5.180	19.9	20.5	40.4	60.0	-19.6
5.060	19.9	20.5	40.4	60.0	-19.6
5.430	19.8	20.6	40.4	60.0	-19.6
1.024	15.8	20.5	36.3	56.0	-19.7
1.048	15.3	20.5	35.8	56.0	-20.2
0.519	15.2	20.5	35.7	56.0	-20.3
0.815	15.2	20.5	35.7	56.0	-20.3
4.248	15.1	20.5	35.6	56.0	-20.4
3.048	15.0	20.5	35.5	56.0	-20.5

Peak Data - vs - Average Limit

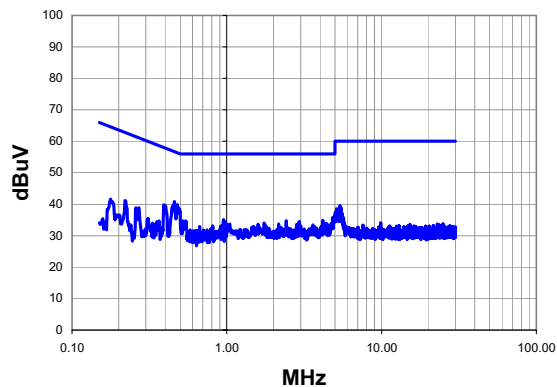
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.458	22.9	20.6	43.5	46.7	-3.3
0.410	21.7	20.6	42.3	47.6	-5.4
5.000	18.9	20.5	39.4	46.0	-6.6
0.262	22.9	20.8	43.7	51.4	-7.6
0.533	17.3	20.5	37.8	46.0	-8.2
0.944	16.5	20.5	37.0	46.0	-9.0
0.225	22.6	21.0	43.6	52.6	-9.1
0.799	16.3	20.5	36.8	46.0	-9.2
0.174	24.2	21.3	45.5	54.8	-9.3
0.201	23.0	21.1	44.1	53.6	-9.5
5.280	19.9	20.6	40.5	50.0	-9.5
5.180	19.9	20.5	40.4	50.0	-9.6
5.060	19.9	20.5	40.4	50.0	-9.6
5.430	19.8	20.6	40.4	50.0	-9.6
1.024	15.8	20.5	36.3	46.0	-9.7
1.048	15.3	20.5	35.8	46.0	-10.2
0.519	15.2	20.5	35.7	46.0	-10.3
0.815	15.2	20.5	35.7	46.0	-10.3
4.248	15.1	20.5	35.6	46.0	-10.4
3.048	15.0	20.5	35.5	46.0	-10.5

EMC

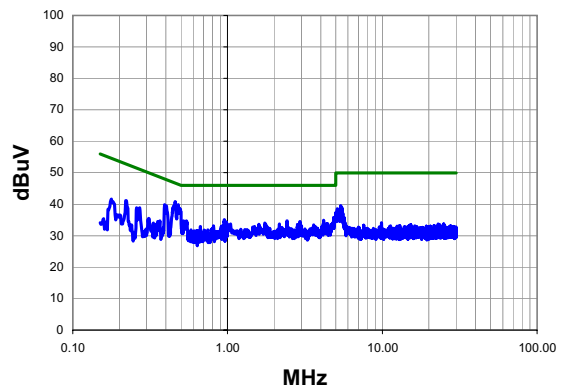
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	334491715	Barometric Pres.:	1020.5	
EUT:		Zune HD		
Configuration:	2			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120V/60Hz			
Operating Mode:	AV Playback			
Deviations:	No deviations.			
Comments:	Device, premium earbuds, Delta PS mn: DPSN-8CB-A rev S3 sn: 002487005752			
Test Specifications		Class B	Test Method	
EN 55022: 2006 + A1:2007			CISPR 22:2005 (Amended by A1:2005 and A2:2006)	
FCC 15.107:2009			ANSI C63.4:2003	
ICES-003:2004			CISPR 22:2005 (Amended by A1:2005 and A2:2006)	
Run #	8	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)
0.459	20.3	20.6	40.9	56.7	-15.9
0.480	19.3	20.5	39.8	56.3	-16.5
0.391	19.3	20.6	39.9	58.0	-18.1
4.848	15.3	20.5	35.8	56.0	-20.2
5.390	19.0	20.6	39.6	60.0	-20.4
0.952	14.6	20.5	35.1	56.0	-20.9
4.184	14.4	20.5	34.9	56.0	-21.1
0.521	14.2	20.5	34.7	56.0	-21.3
2.416	14.2	20.5	34.7	56.0	-21.3
5.130	18.0	20.5	38.5	60.0	-21.5
2.936	14.0	20.5	34.5	56.0	-21.5
0.220	20.2	21.0	41.2	62.8	-21.6
5.180	17.8	20.5	38.3	60.0	-21.7
0.980	13.8	20.5	34.3	56.0	-21.7
1.744	13.6	20.5	34.1	56.0	-21.9
4.440	13.3	20.5	33.8	56.0	-22.2
0.271	18.1	20.8	38.9	61.1	-22.2
2.160	13.3	20.5	33.8	56.0	-22.2
1.048	13.3	20.5	33.8	56.0	-22.2
4.352	13.2	20.5	33.7	56.0	-22.3

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.459	20.3	20.6	40.9	46.7	-5.9
0.480	19.3	20.5	39.8	46.3	-6.5
0.391	19.3	20.6	39.9	48.0	-8.1
4.848	15.3	20.5	35.8	46.0	-10.2
5.390	19.0	20.6	39.6	50.0	-10.4
0.952	14.6	20.5	35.1	46.0	-10.9
4.184	14.4	20.5	34.9	46.0	-11.1
0.521	14.2	20.5	34.7	46.0	-11.3
2.416	14.2	20.5	34.7	46.0	-11.3
5.130	18.0	20.5	38.5	50.0	-11.5
2.936	14.0	20.5	34.5	46.0	-11.5
0.220	20.2	21.0	41.2	52.8	-11.6
5.180	17.8	20.5	38.3	50.0	-11.7
0.980	13.8	20.5	34.3	46.0	-11.7
1.744	13.6	20.5	34.1	46.0	-11.9
4.440	13.3	20.5	33.8	46.0	-12.2
0.271	18.1	20.8	38.9	51.1	-12.2
2.160	13.3	20.5	33.8	46.0	-12.2
1.048	13.3	20.5	33.8	46.0	-12.2
4.352	13.2	20.5	33.7	46.0	-12.3

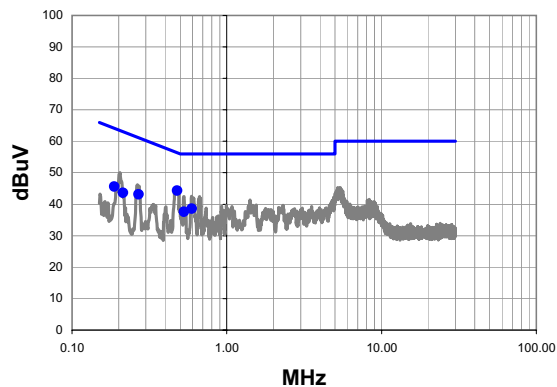


EMC

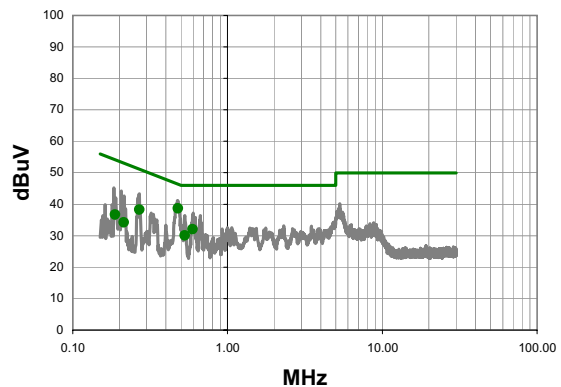
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	334491715	Barometric Pres.:	1020.5	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	5			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120V/60Hz			
Operating Mode:	AV Playback, 720p			
Deviations:	No deviations.			
Comments:	Device,HDMI cable to TV, AVdock sn:091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			
Test Specifications		Class B		Test Method
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
FCC 15.107:2009				ANSI C63.4:2003
ICES-003:2004				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	9	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)
0.479	23.8	20.5	44.3	56.4	-12.0
0.595	18.1	20.5	38.6	56.0	-17.4
0.269	22.3	20.8	43.1	61.1	-18.0
0.529	17.1	20.5	37.6	56.0	-18.4
0.188	24.4	21.2	45.6	64.1	-18.5
0.214	22.6	21.0	43.6	63.0	-19.4

Average Data - vs - Average Limit

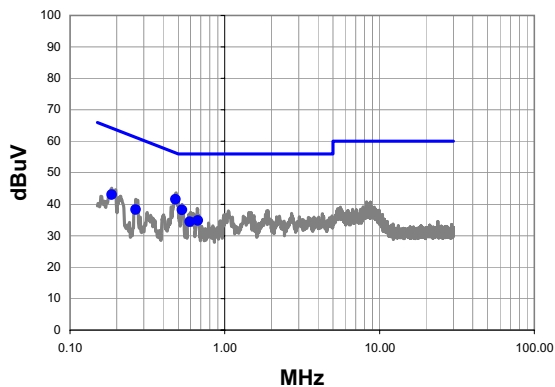
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.479	18.1	20.5	38.6	46.4	-7.7
0.269	17.5	20.8	38.3	51.1	-12.8
0.595	11.5	20.5	32.0	46.0	-14.0
0.529	9.6	20.5	30.1	46.0	-15.9
0.188	15.5	21.2	36.7	54.1	-17.4
0.214	13.2	21.0	34.2	53.0	-18.8

EMC

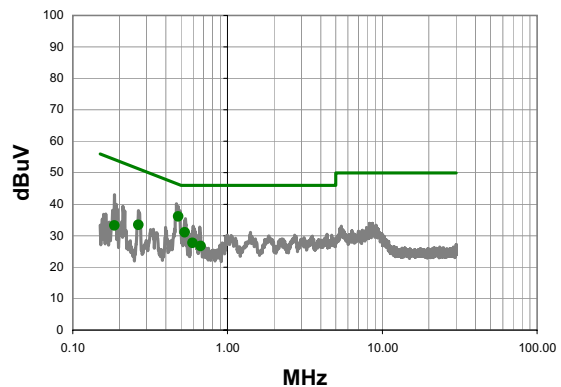
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	334491715	Barometric Pres.:	1020.5	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	5			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120V/60Hz			
Operating Mode:	AV Playback, 720p			
Deviations:	No deviations.			
Comments:	Device,HDMI cable to TV, AVdock sn:091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			
Test Specifications		Class B		Test Method
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
FCC 15.107:2009				ANSI C63.4:2003
ICES-003:2004				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	10	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)
0.480	21.0	20.5	41.5	56.3	-14.8
0.530	17.7	20.5	38.2	56.0	-17.8
0.186	21.8	21.2	43.0	64.2	-21.2
0.670	14.3	20.5	34.8	56.0	-21.2
0.595	13.9	20.5	34.4	56.0	-21.6
0.266	17.5	20.8	38.3	61.2	-22.9

Average Data - vs - Average Limit

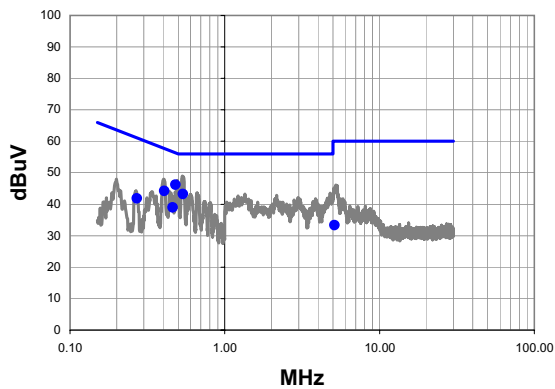
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.480	15.6	20.5	36.1	46.3	-10.2
0.530	10.5	20.5	31.0	46.0	-15.0
0.266	12.6	20.8	33.4	51.2	-17.8
0.595	7.2	20.5	27.7	46.0	-18.3
0.670	6.2	20.5	26.7	46.0	-19.3
0.186	12.0	21.2	33.2	54.2	-21.0

EMC

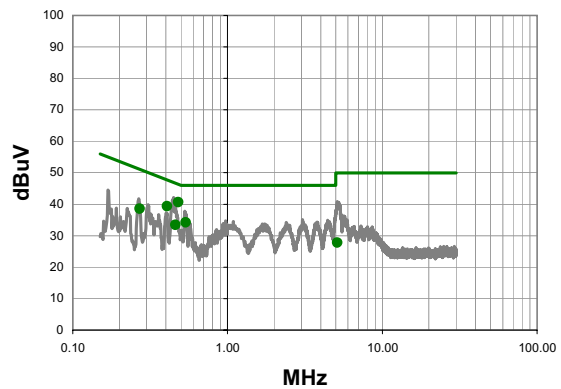
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09				
Project:	None	Temperature:	22.6				
Job Site:	SU01	Humidity:	41				
Serial Number:	334491715	Barometric Pres.:	1020.5	Tested by: Travis Rychener			
EUT:	Zune HD						
Configuration:	5						
Customer:	Microsoft Corporation						
Attendees:	James Wooten						
EUT Power:	230V/50Hz						
Operating Mode:	AV Playback, 720p						
Deviations:	No deviations.						
Comments:	Device,HDMI cable to TV, AVdock sn:091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385						
Test Specifications EN 55022: 2006 + A1:2007		Class B		Test Method CISPR 22:2005 (Amended by A1:2005 and A2:2006)			
Run #	11	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)
0.481	25.7	20.5	46.2	56.3	-10.1
0.537	22.7	20.5	43.2	56.0	-12.8
0.407	23.6	20.6	44.2	57.7	-13.5
0.461	18.4	20.5	38.9	56.7	-17.7
0.271	21.0	20.8	41.8	61.1	-19.3
5.122	12.8	20.5	33.3	60.0	-26.7

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.481	20.1	20.5	40.6	46.3	-5.7
0.407	18.8	20.6	39.4	47.7	-8.3
0.537	13.7	20.5	34.2	46.0	-11.8
0.271	17.8	20.8	38.6	51.1	-12.5
0.461	12.9	20.5	33.4	46.7	-13.2
5.122	7.3	20.5	27.8	50.0	-22.2

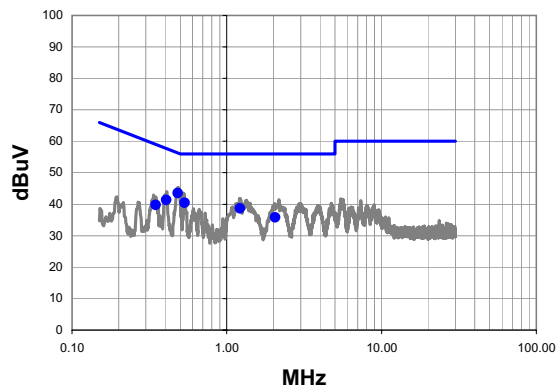
EMC

CONDUCTED EMISSIONS

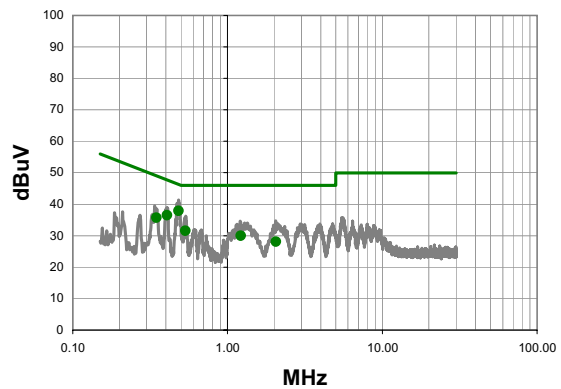
Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	334491715	Barometric Pres.:	1020.5	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	5			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	230V/50Hz			
Operating Mode:	AV Playback, 720p			
Deviations:	No deviations.			
Comments:	Device,HDMI cable to TV, AVdock sn:091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			

Test Specifications		Class B		Test Method	
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)	
Run #	12	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)
0.483	23.0	20.5	43.5	56.3	-12.8
0.534	19.9	20.5	40.4	56.0	-15.6
0.407	20.8	20.6	41.4	57.7	-16.3
1.216	18.2	20.5	38.7	56.0	-17.3
0.347	19.1	20.6	39.7	59.0	-19.3
2.060	15.3	20.5	35.8	56.0	-20.2

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.483	17.3	20.5	37.8	46.3	-8.5
0.407	15.9	20.6	36.5	47.7	-11.2
0.347	15.1	20.6	35.7	49.0	-13.3
0.534	11.0	20.5	31.5	46.0	-14.5
1.216	9.5	20.5	30.0	46.0	-16.0
2.060	7.6	20.5	28.1	46.0	-17.9

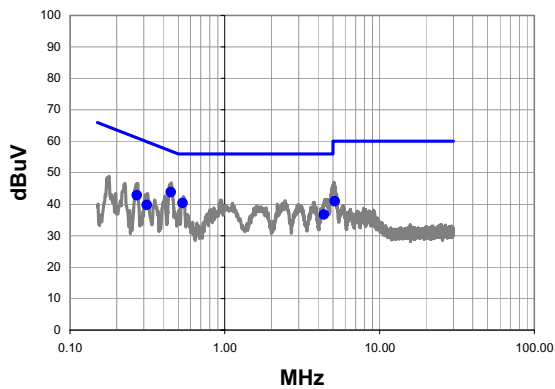
EMC

CONDUCTED EMISSIONS

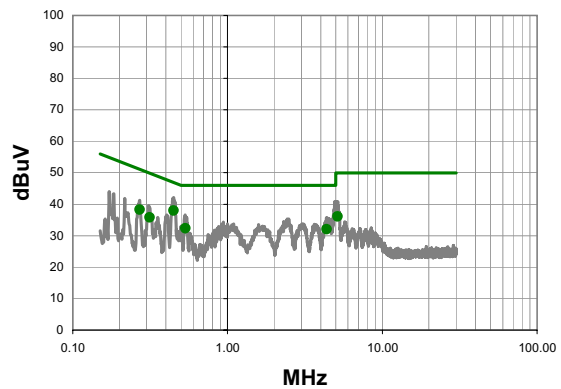
Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	31391815	Barometric Pres.:	1020.5	
				Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	5			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	230V/50Hz			
Operating Mode:	AV Playback, 720p			
Deviations:	No deviations.			
Comments:	Device,HDMI cable to TV, AVdock sn:091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			

Test Specifications	Class B	Test Method
EN 55022: 2006 + A1:2007		CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	13	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)
0.449	23.3	20.6	43.9	56.9	-13.0
0.535	19.8	20.5	40.3	56.0	-15.7
0.271	22.0	20.8	42.8	61.1	-18.3
5.150	20.4	20.5	40.9	60.0	-19.1
4.364	16.2	20.5	36.7	56.0	-19.3
0.314	19.1	20.7	39.8	59.9	-20.1

Average Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.449	17.4	20.6	38.0	46.9	-8.9
0.271	17.5	20.8	38.3	51.1	-12.8
0.535	11.8	20.5	32.3	46.0	-13.7
5.150	15.6	20.5	36.1	50.0	-13.9
4.364	11.5	20.5	32.0	46.0	-14.0
0.314	15.1	20.7	35.8	49.9	-14.1

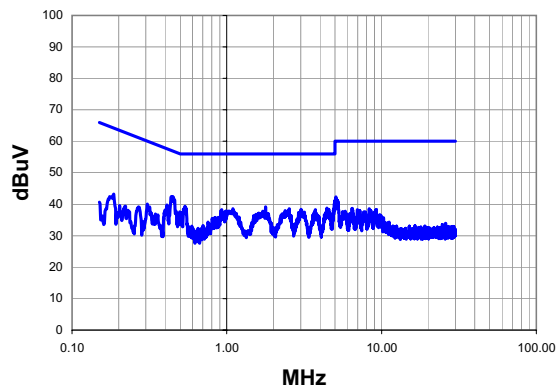
EMC

CONDUCTED EMISSIONS

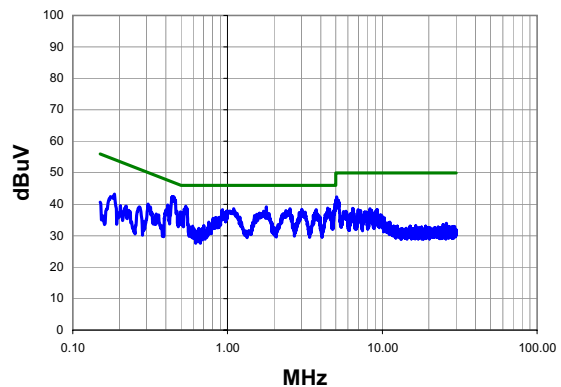
Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	31391815	Barometric Pres.:	1020.5	
		Tested by:		Travis Rychener
EUT:	Zune HD			
Configuration:	5			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	230V/50Hz			
Operating Mode:	AV Playback, 720p			
Deviations:	No deviations.			
Comments:	Device,HDMI cable to TV, AVdock sn:091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			

Test Specifications	Class B	Test Method
EN 55022: 2006 + A1:2007		CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	14	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)
0.439	21.9	20.6	42.5	57.1	-14.6
0.538	18.9	20.5	39.4	56.0	-16.6
1.784	18.7	20.5	39.2	56.0	-16.8
4.440	18.2	20.5	38.7	56.0	-17.3
2.536	18.1	20.5	38.6	56.0	-17.4
1.096	18.1	20.5	38.6	56.0	-17.4
3.016	17.9	20.5	38.4	56.0	-17.6
5.060	21.8	20.5	42.3	60.0	-17.7
3.728	17.8	20.5	38.3	56.0	-17.7
0.927	17.8	20.5	38.3	56.0	-17.7
0.410	19.2	20.6	39.8	57.6	-17.9
0.497	17.1	20.5	37.6	56.1	-18.4
0.306	19.3	20.7	40.0	60.1	-20.1
0.840	15.3	20.5	35.8	56.0	-20.2
0.813	15.0	20.5	35.5	56.0	-20.5
4.800	14.8	20.5	35.3	56.0	-20.7
0.186	22.0	21.2	43.2	64.2	-21.0
6.450	18.1	20.6	38.7	60.0	-21.3
8.340	18.0	20.6	38.6	60.0	-21.4
6.970	17.7	20.6	38.3	60.0	-21.7

Peak Data - vs - Average Limit

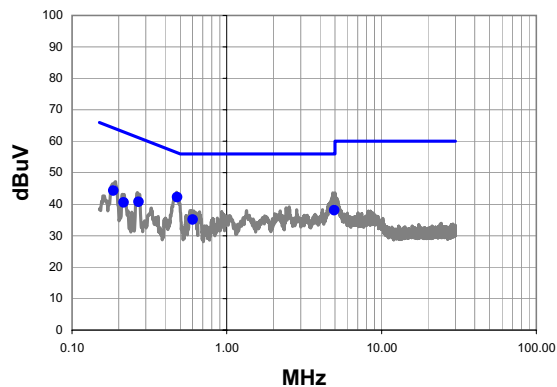
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.439	21.9	20.6	42.5	47.1	-4.6
0.538	18.9	20.5	39.4	46.0	-6.6
1.784	18.7	20.5	39.2	46.0	-6.8
4.440	18.2	20.5	38.7	46.0	-7.3
2.536	18.1	20.5	38.6	46.0	-7.4
1.096	18.1	20.5	38.6	46.0	-7.4
3.016	17.9	20.5	38.4	46.0	-7.6
5.060	21.8	20.5	42.3	50.0	-7.7
3.728	17.8	20.5	38.3	46.0	-7.7
0.927	17.8	20.5	38.3	46.0	-7.7
0.410	19.2	20.6	39.8	47.6	-7.9
0.497	17.1	20.5	37.6	46.1	-8.4
0.306	19.3	20.7	40.0	50.1	-10.1
0.840	15.3	20.5	35.8	46.0	-10.2
0.813	15.0	20.5	35.5	46.0	-10.5
4.800	14.8	20.5	35.3	46.0	-10.7
0.186	22.0	21.2	43.2	54.2	-11.0
6.450	18.1	20.6	38.7	50.0	-11.3
8.340	18.0	20.6	38.6	50.0	-11.4
6.970	17.7	20.6	38.3	50.0	-11.7

EMC

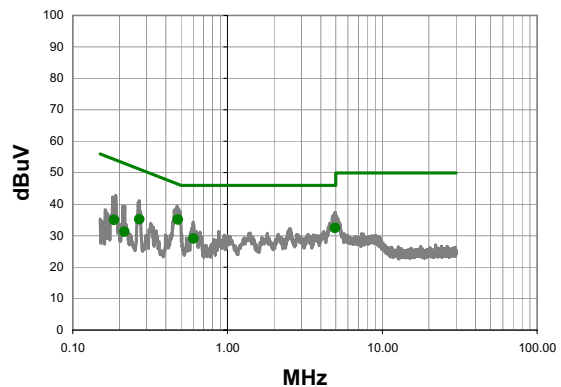
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	31391815	Barometric Pres.:	1020.5	Tested by: Travis Rychener
EUT:	Zune HD			
Configuration:	5			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120V/60Hz			
Operating Mode:	AV Playback, 720p			
Deviations:	No deviations.			
Comments:	Device,HDMI cable to TV, AVdock sn:091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			
Test Specifications		Class B		Test Method
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
FCC 15.107:2009				ANSI C63.4:2003
ICES-003:2004				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	15	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)
0.479	21.7	20.5	42.2	56.4	-14.1
4.964	17.5	20.5	38.0	56.0	-18.0
0.185	23.1	21.2	44.3	64.3	-19.9
0.269	19.9	20.8	40.7	61.1	-20.4
0.603	14.6	20.5	35.1	56.0	-20.9
0.216	19.5	21.0	40.5	63.0	-22.5

Average Data - vs - Average Limit

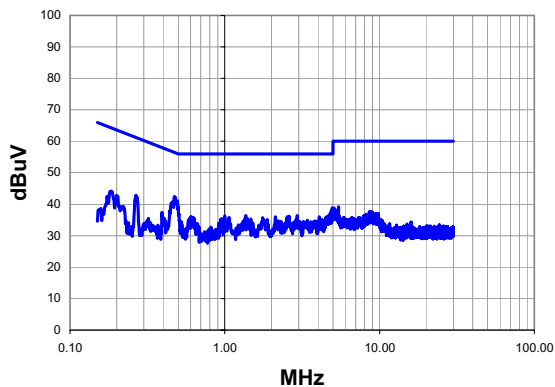
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.479	14.6	20.5	35.1	46.4	-11.2
4.964	11.9	20.5	32.4	46.0	-13.6
0.269	14.4	20.8	35.2	51.1	-15.9
0.603	8.6	20.5	29.1	46.0	-16.9
0.185	13.8	21.2	35.0	54.3	-19.2
0.216	10.2	21.0	31.2	53.0	-21.8

EMC

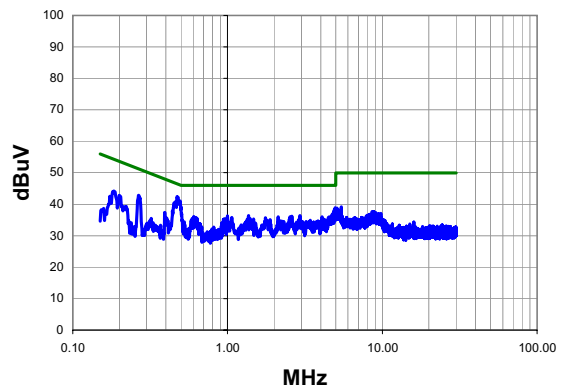
CONDUCTED EMISSIONS

Work Order:	MCSO1426	Date:	05/29/09	
Project:	None	Temperature:	22.6	
Job Site:	SU01	Humidity:	41	
Serial Number:	31391815	Barometric Pres.:	1020.5	
Tested by: Travis Rychener				
EUT:	Zune HD			
Configuration:	5			
Customer:	Microsoft Corporation			
Attendees:	James Wooten			
EUT Power:	120V/60Hz			
Operating Mode:	AV Playback, 720p			
Deviations:	No deviations.			
Comments:	Device,HDMI cable to TV, AVdock sn:091800046, Delta PS mn: DPSN-8CB-A rev S3 sn: 00837702385			
Test Specifications		Class B		Test Method
EN 55022: 2006 + A1:2007				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
FCC 15.107:2009				ANSI C63.4:2003
ICES-003:2004				CISPR 22:2005 (Amended by A1:2005 and A2:2006)
Run #	16	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)
0.471	21.9	20.5	42.4	56.5	-14.1
4.960	18.3	20.5	38.8	56.0	-17.2
0.266	22.0	20.8	42.8	61.3	-18.4
4.816	16.8	20.5	37.3	56.0	-18.7
2.936	15.9	20.5	36.4	56.0	-19.6
1.368	15.9	20.5	36.4	56.0	-19.6
1.000	15.8	20.5	36.3	56.0	-19.7
2.600	15.7	20.5	36.2	56.0	-19.8
0.606	15.6	20.5	36.1	56.0	-19.9
4.088	15.5	20.5	36.0	56.0	-20.0
2.120	15.5	20.5	36.0	56.0	-20.0
0.184	23.0	21.2	44.2	64.3	-20.1
0.626	15.3	20.5	35.8	56.0	-20.2
1.064	15.3	20.5	35.8	56.0	-20.2
1.760	15.2	20.5	35.7	56.0	-20.3
0.988	15.1	20.5	35.6	56.0	-20.4
0.592	15.0	20.5	35.5	56.0	-20.5
0.952	14.9	20.5	35.4	56.0	-20.6
1.400	14.9	20.5	35.4	56.0	-20.6
0.391	16.8	20.6	37.4	58.0	-20.6

Peak Data - vs - Average Limit

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Adjusted (dBuV)	Spec. Limit (dBuV)	Compared to Spec. (dB)
0.471	21.9	20.5	42.4	46.5	-4.1
4.960	18.3	20.5	38.8	46.0	-7.2
0.266	22.0	20.8	42.8	51.3	-8.4
4.816	16.8	20.5	37.3	46.0	-8.7
2.936	15.9	20.5	36.4	46.0	-9.6
1.368	15.9	20.5	36.4	46.0	-9.6
1.000	15.8	20.5	36.3	46.0	-9.7
2.600	15.7	20.5	36.2	46.0	-9.8
0.606	15.6	20.5	36.1	46.0	-9.9
4.088	15.5	20.5	36.0	46.0	-10.0
2.120	15.5	20.5	36.0	46.0	-10.0
0.184	23.0	21.2	44.2	54.3	-10.1
0.626	15.3	20.5	35.8	46.0	-10.2
1.064	15.3	20.5	35.8	46.0	-10.2
1.760	15.2	20.5	35.7	46.0	-10.3
0.988	15.1	20.5	35.6	46.0	-10.4
0.592	15.0	20.5	35.5	46.0	-10.5
0.952	14.9	20.5	35.4	46.0	-10.6
1.400	14.9	20.5	35.4	46.0	-10.6
0.391	16.8	20.6	37.4	48.0	-10.6

