

Music Sciences

2600T

July 18, 2005

Report No. MUSI0002

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
Issue Date: July 20, 2005
Music Sciences
Model: 2600T

Emissions			
Specification	Test Method	Pass	Fail
FCC 15.207 AC Powerline Conducted Emissions:2005-04	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.247(a) Occupied Bandwidth:2005-04	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.247(b) Output Power:2005-04	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.247(d) Band Edge Compliance:2005-04	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.247(d) Spurious Conducted Emissions:2005-04	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.247(d) Spurious Radiated Emissions:2005-04	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>
FCC 15.247(e) Power Spectral Density:2005-04	ANSI C63.4:2003	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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.
22975 NW Evergreen Parkway, Suite 400; Hillsboro, OR 97124
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.

Approved By:

Don Facteau, IS Manager

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

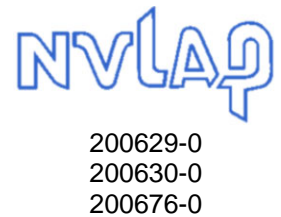
Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested,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

Revision Number	Description	Date	Page Number
00			

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 recognized 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 89/336/EEC, ANSI C63.4, MIL-STD 461E, DO-160D and SAE J1113. 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.



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



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



TÜV Product Service: Included in TÜV Product Service Group's Listing of Recognized Laboratories. It qualifies in connection with the TÜV Certification after Recognition of Agent's Testing Program for the product categories and/or standards shown in TÜV's current Listing of CARAT Laboratories, available from TÜV. A certificate was issued to represent that this laboratory continues to meet TÜV's CARAT Program requirements. Certificate No. USA0401C.



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



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



Technology International: Assessed in accordance with ISO Guide 25 defining the general international requirements for the competence of calibration and testing laboratories and with ITI assessment criteria LACO196. Based upon that assessment, Interference Technology International, Ltd., has granted approval for specifications implementing the EU Directive on EMC (89/336/EEC and amendments). The scope of the approval was provided on a Schedule of Assessment supplied with the certificate and is available upon request.



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 and R-1025, Irvine: C-2094 and R-1943, Newberg: C-1877 and R-1760, Sultan: R-871, C-1784 and R-1761*).



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



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



SCOPE

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

<http://www.nwemc.com/scope.asp>

What is measurement uncertainty?

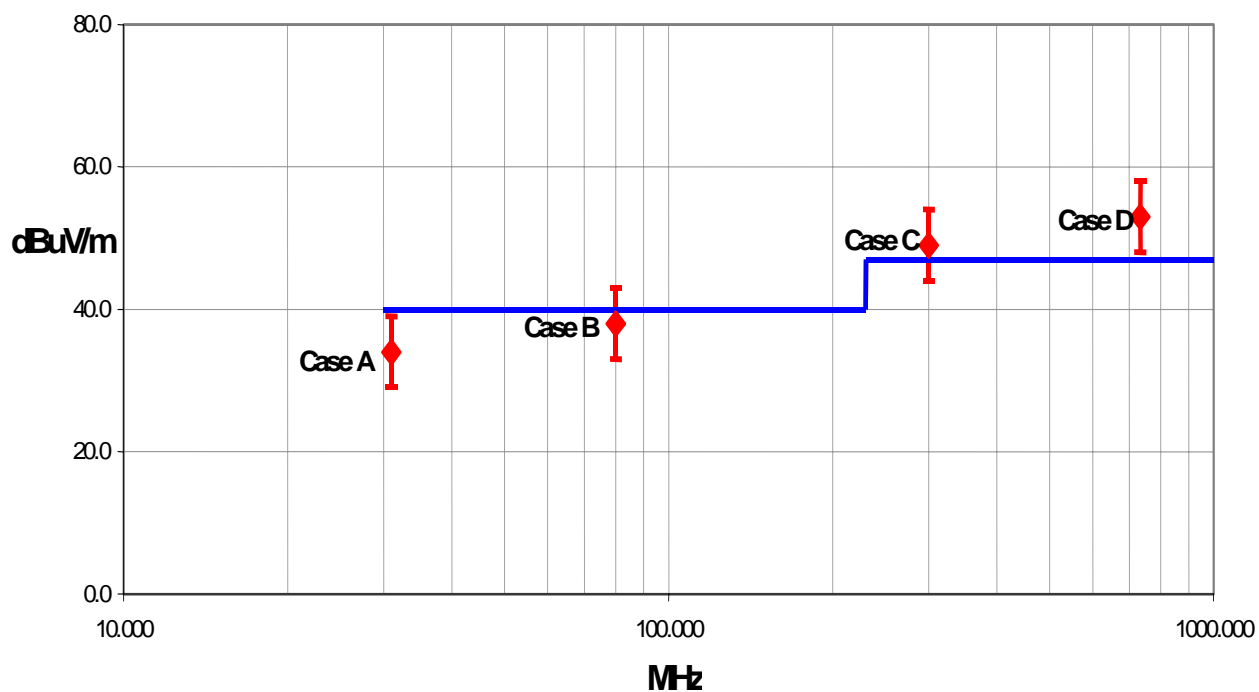
When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. The following statement of measurement uncertainty is used to reflect the accuracy of the measured result as compared with its “true” value. In the case of transient tests (ESD, EFT, Surge, Voltage Dips and Interruptions), the test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements.

The following documents were the basis for determining the uncertainty levels of our measurements:

- “ISO Guide to the Expression of Uncertainty in Measurements”, October 1993
- “NIS81: The Treatment of Uncertainty in EMC Measurements”, May 1994
- “IEC CISPR 16-3 A1 f1 Ed.1: Radio-interference measurements and statistical techniques”, December 2000

How might measurement uncertainty be applied to test results?

If the diamond marks the measured value for the test and the vertical bars bracket the range of + and – measurement uncertainty, then test results can be interpreted from the diagram below.



Test Result Scenarios:

Case A: Product complies.

Case B: Product conditionally complies. It is not possible to say with 95% confidence that the product complies.

Case C: Product conditionally does not comply. It is not possible to say with 95% confidence that the product does not comply.

Case D: Product does not comply.

Radiated Emissions ≤ 1 GHz

Value (dB)

Test Distance	Probability Distribution	Biconical Antenna		Log Periodic Antenna		Dipole Antenna	
		3m	10m	3m	10m	3m	10m
Combined standard uncertainty $u_c(y)$	normal	+ 1.86 - 1.88	+ 1.82 - 1.87	+ 2.23 - 1.41	+ 1.29 - 1.26	+ 1.31 - 1.27	+ 1.25 - 1.25
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k=2)	+ 3.72 - 3.77	+ 3.64 - 3.73	+ 4.46 - 2.81	+ 2.59 - 2.52	+ 2.61 - 2.55	+ 2.49 - 2.49

Radiated Emissions > 1 GHz

Value (dB)

Test Distance	Probability Distribution	Without High Pass Filter		With High Pass Filter	
		3m	10m	3m	10m
Combined standard uncertainty $u_c(y)$	normal	+ 1.29 - 1.25	+ 1.38 - 1.35	+ 1.29 - 1.25	+ 1.38 - 1.35
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k=2)	+ 2.57 - 2.51	+ 2.76 - 2.70	+ 2.57 - 2.51	+ 2.76 - 2.70

Conducted Emissions

Test Distance	Probability Distribution	Value (+/- dB)	
		3m	10m
Combined standard uncertainty $u_c(y)$	normal	1.48	1.48
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k = 2)	2.97	2.97

Radiated Immunity

Test Distance	Probability Distribution	Value (+/- dB)	
		3m	10m
Combined standard uncertainty $u_c(y)$	normal	1.05	1.05
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k = 2)	2.11	2.11

Conducted Immunity

Test Distance	Probability Distribution	Value (+/- dB)	
		3m	10m
Combined standard uncertainty $u_c(y)$	normal	1.05	1.05
Expanded uncertainty U (level of confidence $\approx 95\%$)	normal (k = 2)	2.10	2.10

Legend

$u_c(y)$ = square root of the sum of squares of the individual standard uncertainties

U = combined standard uncertainty multiplied by the coverage factor: k . This defines an interval about the measured result that will encompass the true value with a confidence level of approximately 95%. If a higher level of confidence is required, then $k=3$ (CL of 99.7%) can be used. Please note that with a coverage factor of one, $u_c(y)$ yields a confidence level of only 68%.

**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 – EV10**

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

**Oregon****Trails End Facility****Labs TE01 – TE03**

30475 NE Trails End Lane
Newberg, OR 97132
(503) 844-4066
FAX (503) 537-0735

**Washington****Sultan Facility****Labs SU01 – SU07**

14128 339th Ave. SE
Sultan, WA 98294
(888) 364-2378
FAX (360) 793-2536

Party Requesting the Test

Company Name:	Music Sciences
Address:	1590 Murphy Pkwy
City, State, Zip:	Eagen, MN 55122
Test Requested By:	Don Moses
Model:	2600T
First Date of Test:	06-26-2005
Last Date of Test:	07-18-2005
Receipt Date of Samples:	06-26-2005
Equipment Design Stage:	Production
Equipment Condition:	No visual damage.

Information Provided by the Party Requesting the Test

Clocks/Oscillators:	Not provided.
I/O Ports:	Audio

Functional Description of the EUT (Equipment Under Test):

Wire-free 5.8 GHz Digital Audio Link

Client Justification for EUT Selection:

The product is representative production sample.
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Client Justification for Test Selection:

Not Provided

EUT Photo

Equipment modifications					
Item	Test	Date	Modification	Note	Disposition of EUT
1	Spurious Radiated Emissions	06/26/2005	No EMI suppression devices were added or modified during this test.	Same configuration as delivered.	EUT was returned to client.
2	Spurious Radiated Emissions	07/02/2005	Client made a modification.	Modified from delivered configuration.	EUT was returned to client.
3	Spurious Radiated Emissions	07/08/2005	Client made a modification.	Modified from previous configuration.	EUT remained at NWEMC.
4	Band Edge Compliance	07/15/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.
5	Occupied Bandwidth	07/15/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.
6	Power Spectral Density	07/15/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.
7	Spurious Conducted Emissions	07/15/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.
8	Output power	07/15/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.
9	AC Powerline Conducted Emissions	07/18/2005	No EMI suppression devices were added or modified during this test.	Same configuration as in previous test.	EUT remained at Northwest EMC.

Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High
Mid
Low

Operating Modes Investigated:

Typical

Data Rates Investigated:

Maximum

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Software\Firmware Applied During Test

Exercise software	GPE110_Tx	Version	1.0
Description			
The EUT was run with standard operating firmware.			

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Music Sciences	2600T	Unknown
AC Adapter	CUI Inc.	EPAS-101W-12	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	2.0	No	AC Power Adapter	AC Mains

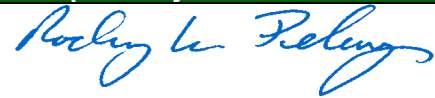
Measurement Equipment


Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo

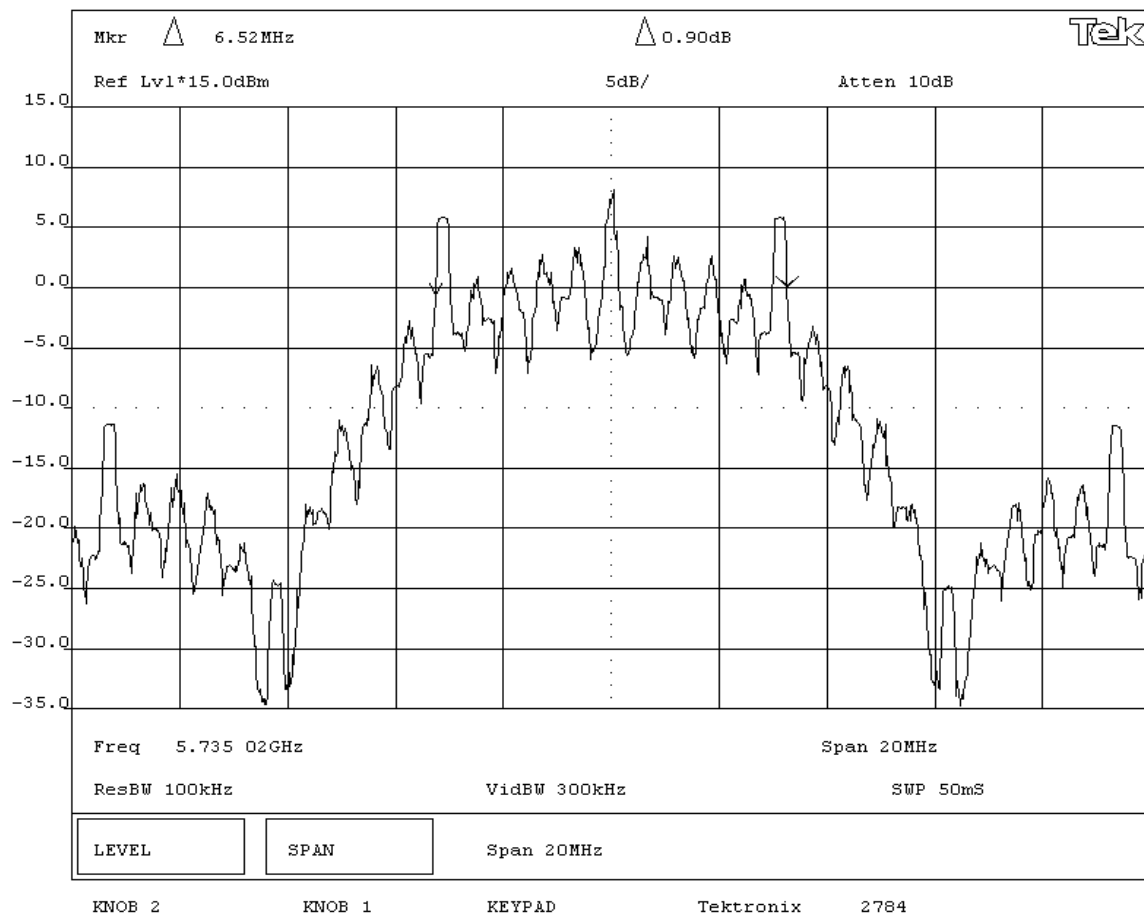
Test Description

Requirement: Per 47 CFR 15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz. The measurement is made with the spectrum analyzer's resolution bandwidth set to 100kHz, and the video bandwidth set to greater than or equal to the resolution bandwidth.

Configuration: The occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation.

Completed by:

NORTHWEST EMC		OCCUPIED BANDWIDTH		Rev BETA 01/30/01	
EUT: 2600T		Work Order: MUSI0002			
Serial Number:		Date: 07/11/05			
Customer: Music Sciences		Temperature: 70 F			
Attendees: None		Tested by: Rod Peloquin		Humidity: 42% RH	
Customer Ref. No.:		Power: 120VAC/60Hz		Job Site: EV06	
TEST SPECIFICATIONS					
Specification: FCC Part 15.247(a)(2)		Year: 2005-04		Method: FCC 97-114, ANSI C63.4	
				Year: 2003	
SAMPLE CALCULATIONS					
COMMENTS					
EUT OPERATING MODES					
Modulated by PRBS at maximum data rate					
DEVIATIONS FROM TEST STANDARD					
None					
REQUIREMENTS					
The minimum 6dB bandwidth is 500KHz					
RESULTS		BANDWIDTH			
Pass		6.52 MHz			
SIGNATURE					
 Tested By: _____					
DESCRIPTION OF TEST					
Occupied Bandwidth - Low Channel					



NORTHWEST
EMC

OCCUPIED BANDWIDTH

Rev BETA
01/30/01

EUT: 2600T		Work Order: MUSI0002	
Serial Number:		Date:	07/11/05
Customer:	Music Sciences	Temperature:	70 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Power:	120VAC/60Hz
		Humidity:	42% RH
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(a)(2)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

COMMENTS

EUT OPERATING MODES

Modulated by PRBS at maximum data rate

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

The minimum 6dB bandwidth is 500KHz

RESULTS

BANDWIDTH

Pass

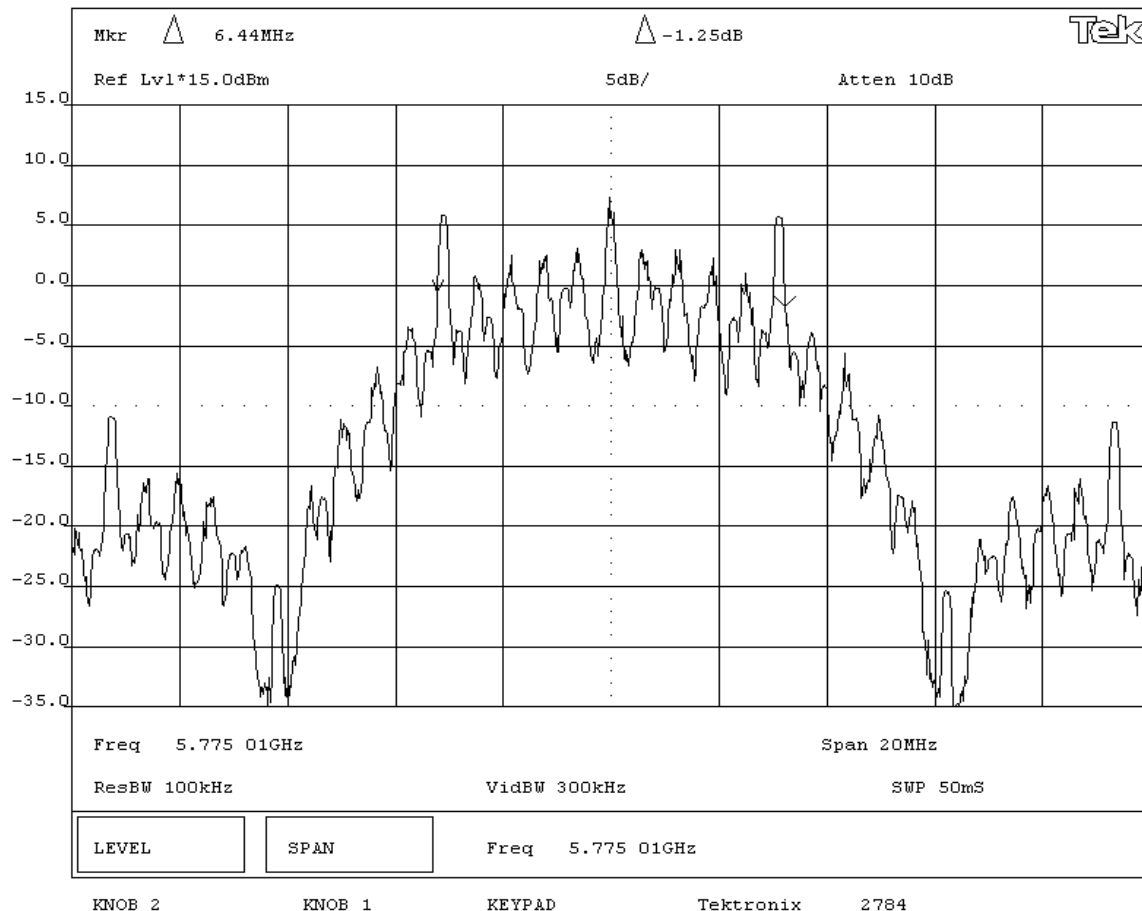
6.44 MHz

SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Occupied Bandwidth - Mid Channel



NORTHWEST
EMC

OCCUPIED BANDWIDTH

Rev BETA
01/30/01

EUT: 2600T		Work Order: MUSI0002	
Serial Number:		Date:	07/15/05
Customer:	Music Sciences	Temperature:	72 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Power:	120VAC/60Hz
		Humidity:	45% RH
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(a)(2)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

COMMENTS

EUT OPERATING MODES

Modulated by PRBS at maximum data rate

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

The minimum 6dB bandwidth is 500KHz

RESULTS

BANDWIDTH

Pass

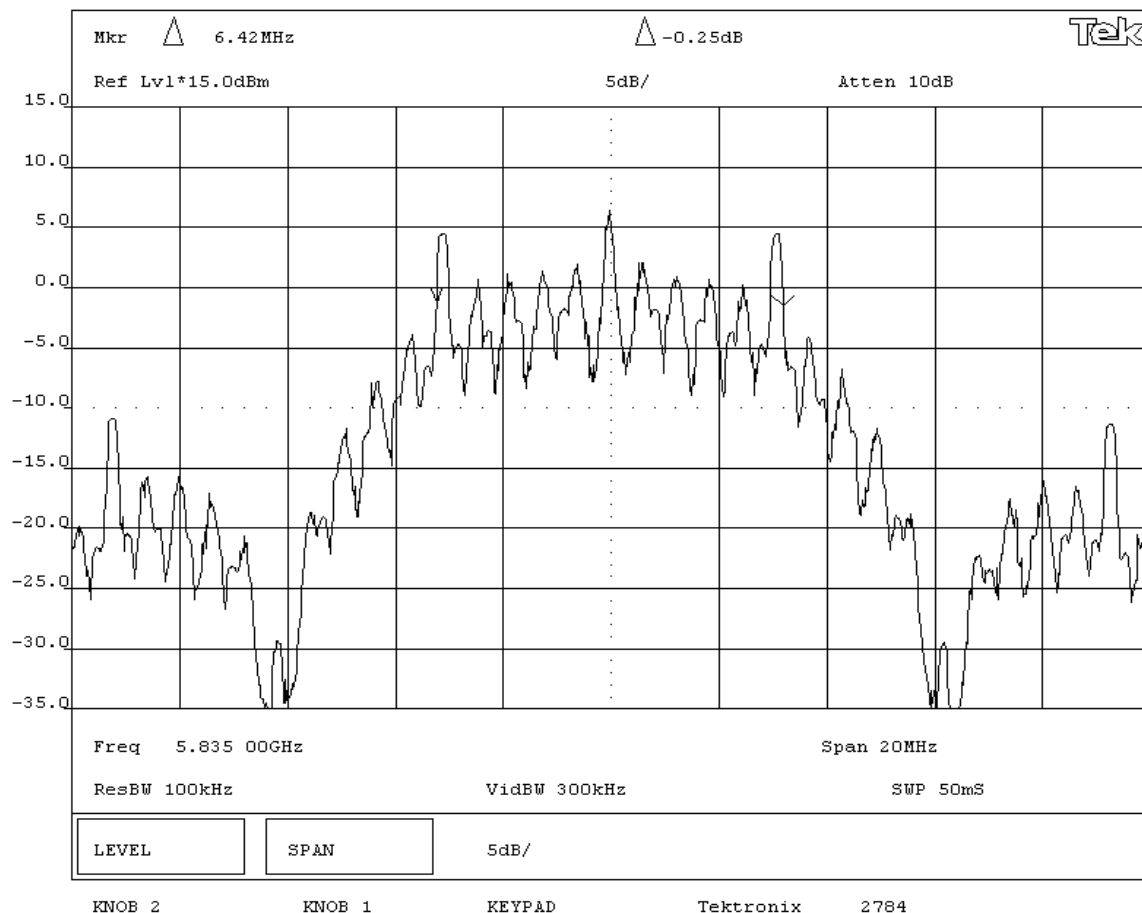
6.42 MHz

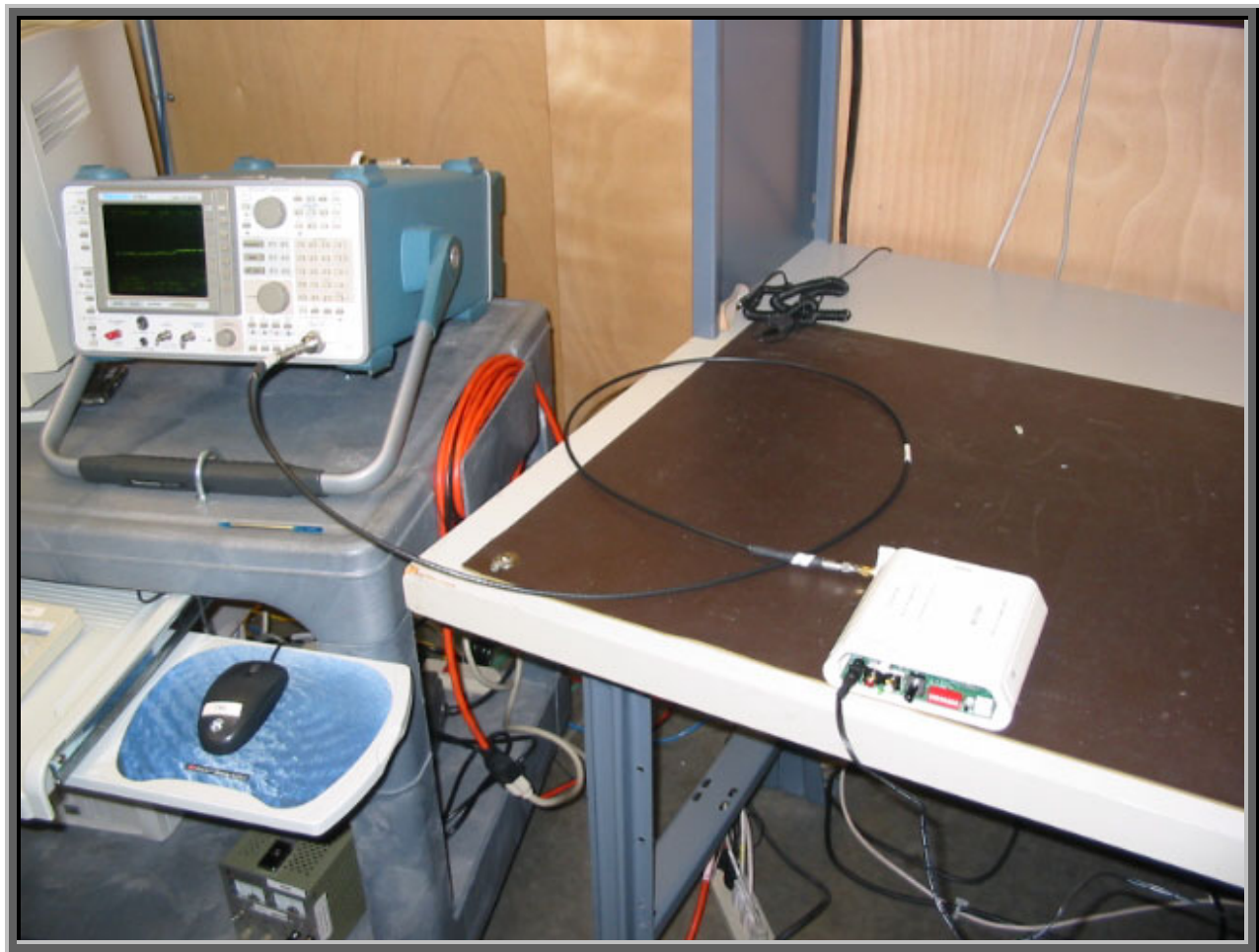
SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Occupied Bandwidth - High Channel





Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High
Mid
Low

Operating Modes Investigated:

Typical

Data Rates Investigated:

Maximum

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Software\Firmware Applied During Test

Exercise software	GPE110_Tx	Version	1.0
Description			
The EUT was run with standard operating firmware.			

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Music Sciences	2600T	Unknown
AC Adapter	CUI Inc.	EPAS-101W-12	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	2.0	No	AC Power Adapter	AC Mains

Measurement Equipment					
Description	Manufacturer	Model	Identifier	Last Cal	Interval
Oscilloscope	Tektronix	TDS 3052	TOF	12/02/2004	13 mo
Power Meter	Hewlett Packard	E4418A	SPA	07/23/2004	24 mo
Power Sensor	Hewlett-Packard	8481H	SPB	07/23/2004	24 mo
RF Detector	RLC Electronics	CR-133-R	ZZA	NCR	NA
Signal Generator	Hewlett Packard	8341B	TGN	02/07/2005	13 mo

Test Description

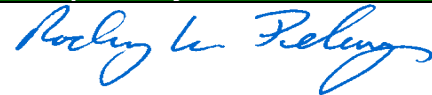
Requirement: Per 47 CFR 15.247(b)(3), the maximum peak output power must not exceed 1 Watt.


Configuration: The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The EUT was transmitting at its maximum output power. The data rate of the radio was varied to determine the level that produced the highest output power.

The measurement was made using a direct connection between the RF output of the EUT and a RF detector diode. The DC output of the diode was measured with the oscilloscope. The signal generator, tuned to the transmit frequency, was then substituted for the EUT. The CW output of the signal generator was adjusted until the DC output of the RF detector diode match the peak level produced when connected to the EUT. To further reduce measurement error, the power meter and sensor were then used to measure the output power level of the signal generator.

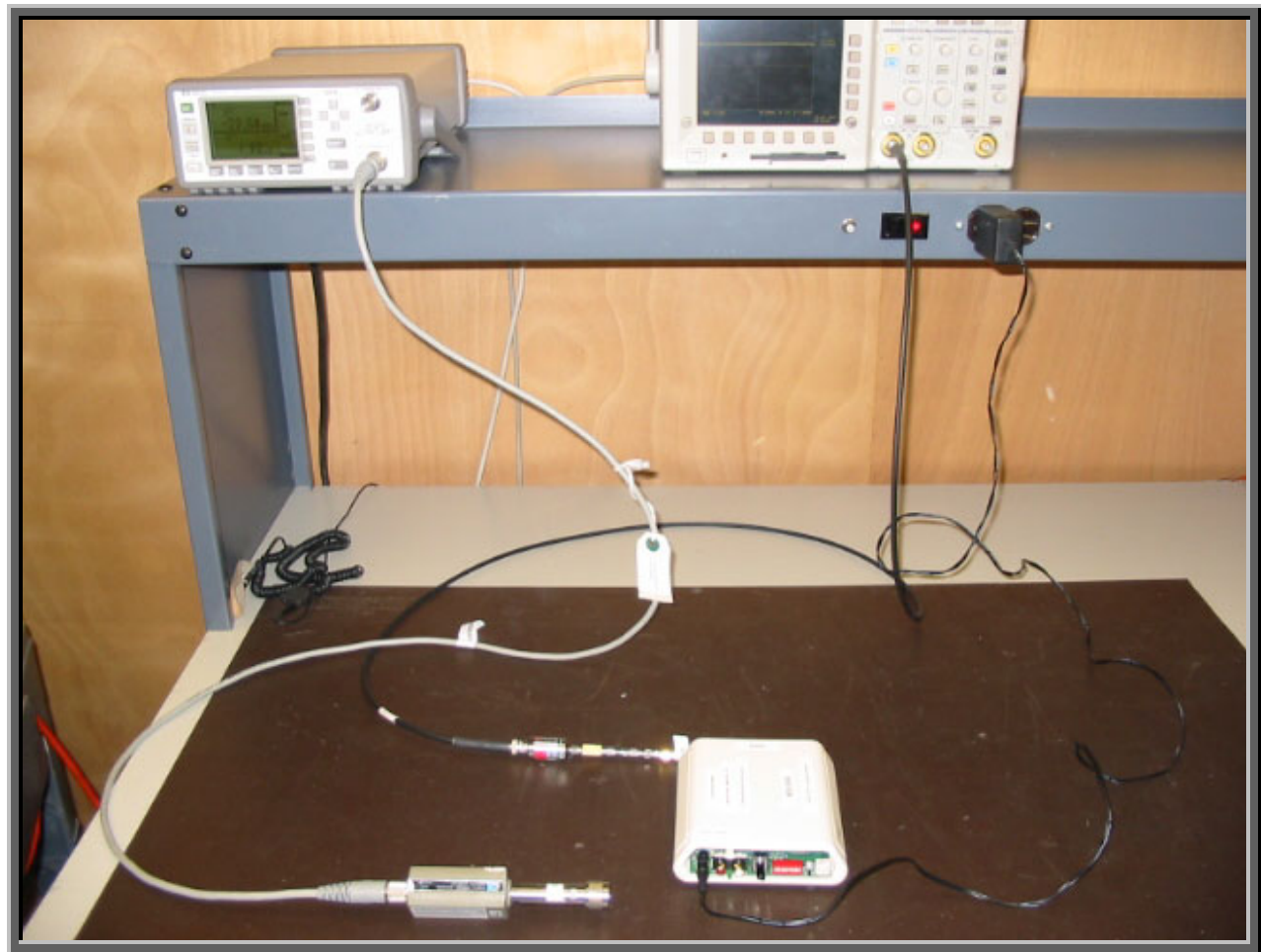
De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

Completed by:



NORTHWEST EMC		EMISSIONS DATA SHEET		Rev BETA 01/30/01			
EUT:	2600T			Work Order:	MUSI0002		
Serial Number:				Date:	07/15/05		
Customer:	Music Sciences			Temperature:	72 F		
Attendees:	None		Tested by:	Rod Peloquin	Humidity:	45% RH	
Customer Ref. No.:			Power:	120VAC/60Hz	Job Site:	EV06	
TEST SPECIFICATIONS							
Specification:	47 CFR 15.247(b)(3)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
SAMPLE CALCULATIONS							
COMMENTS							
EUT OPERATING MODES							
Modulated by PRBS at indicated data rate, at maximum output power. 802.11(b) modulation scheme.							
DEVIATIONS FROM TEST STANDARD							
None							
REQUIREMENTS							
Maximum peak conducted output power does not exceed 1 Watt							
RESULTS			AMPLITUDE				
Pass			16.2 mW				
SIGNATURE							
<div style="text-align: center;">  Tested By: _____ </div>							
DESCRIPTION OF TEST							
Output Power - Low, Mid, & High Channels							

Frequency (MHz)	Power (mW)
5736	16.2
5776	14.8
5836	9.7



Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High

Low

Operating Modes Investigated:

Typical

Data Rates Investigated:

Maximum

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Software\Firmware Applied During Test

Exercise software	GPE110_Tx	Version	1.0
Description			
The EUT was run with standard operating firmware.			

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Music Sciences	2600T	Unknown
AC Adapter	CUI Inc.	EPAS-101W-12	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	2.0	No	AC Power Adapter	AC Mains

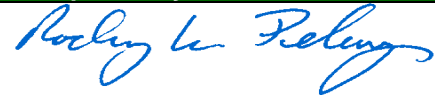
Measurement Equipment


Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo

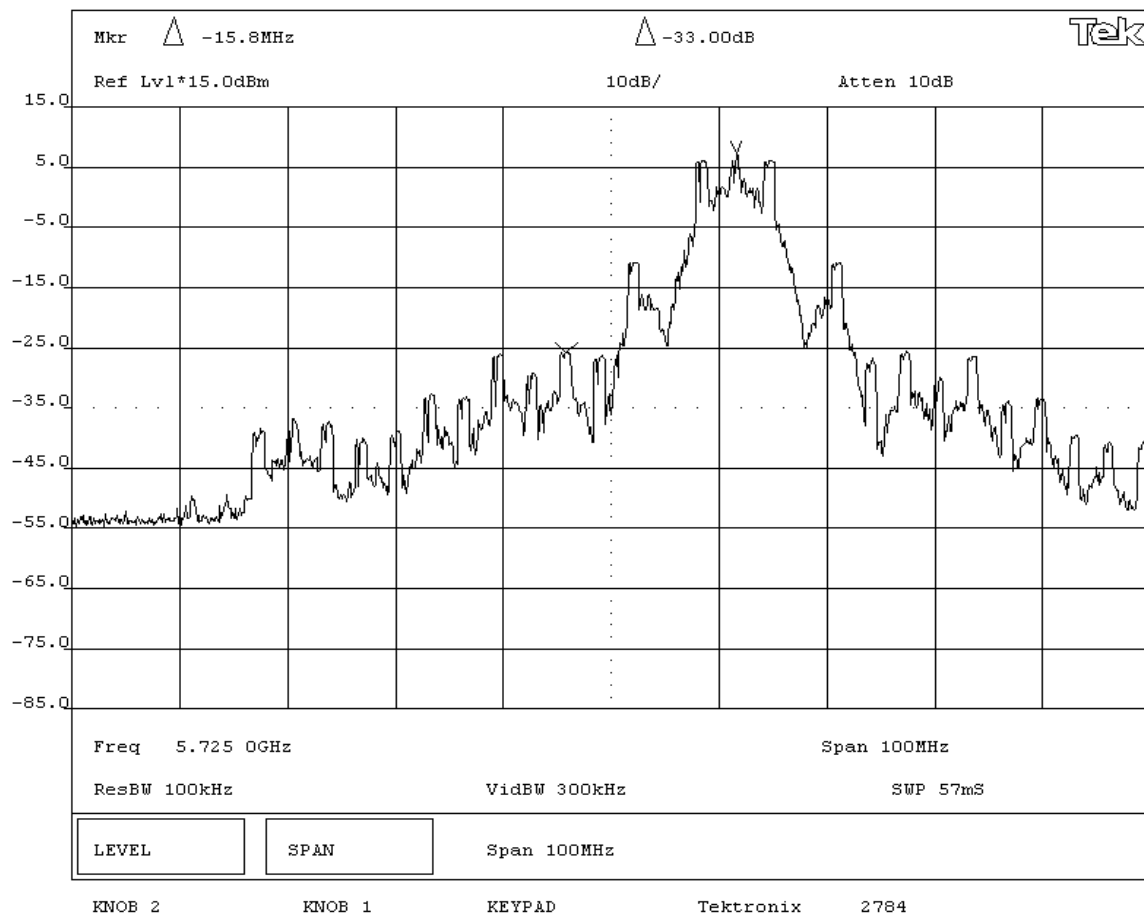
Test Description

Requirement: Per 47 CFR 15.247(d), in any 100 kHz bandwidth outside the authorized band, the maximum level of radio frequency power must be at least 20dB down from the highest emission level within the authorized band. The measurement is made with the spectrum analyzer's resolution bandwidth set to 100 kHz, and the video bandwidth set to greater than or equal to the resolution bandwidth.

Configuration: The spurious RF conducted emissions at the edges of the authorized band were measured with the EUT set to low and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. The channels closest to the band edges were selected. The spectrum was scanned across each band edge from 25 MHz below the band edge to 25 MHz above the band edge.

Completed by:

NORTHWEST EMC		BANDEDGE COMPLIANCE		Rev BETA 01/30/01	
EUT: 2600T			Work Order: MUSI0002		
Serial Number:			Date: 07/11/05		
Customer: Music Sciences			Temperature: 70 F		
Attendees: None			Tested by: Rod Peloquin		
Customer Ref. No.:			Power: 120VAC/60Hz		
			Humidity: 42% RH		
			Job Site: EV06		
TEST SPECIFICATIONS					
Specification: FCC Part 15.247(d)		Year: 2005-04		Method: FCC 97-114, ANSI C63.4	
				Year: 2003	
SAMPLE CALCULATIONS					
COMMENTS					
EUT OPERATING MODES					
Modulated by PRBS at maximum data rate					
DEVIATIONS FROM TEST STANDARD					
None					
REQUIREMENTS					
Maximum level of any spurious emission at the edge of the authorized band is 20 dB down from the fundamental.					
RESULTS					
Pass			AMPLITUDE		
			-33.0 dB		
SIGNATURE					
 Tested By: _____					
DESCRIPTION OF TEST					
Band Edge Compliance - Low Channel					



NORTHWEST
EMC

BANDEDGE COMPLIANCE

Rev BETA
01/30/01

EUT: 2600T		Work Order: MUSI0002	
Serial Number:		Date:	07/15/05
Customer:	Music Sciences	Temperature:	72 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Power:	120VAC/60Hz
		Humidity:	45% RH
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

COMMENTS

EUT OPERATING MODES

Modulated by PRBS at maximum data rate

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission at the edge of the authorized band is 20 dB down from the fundamental.

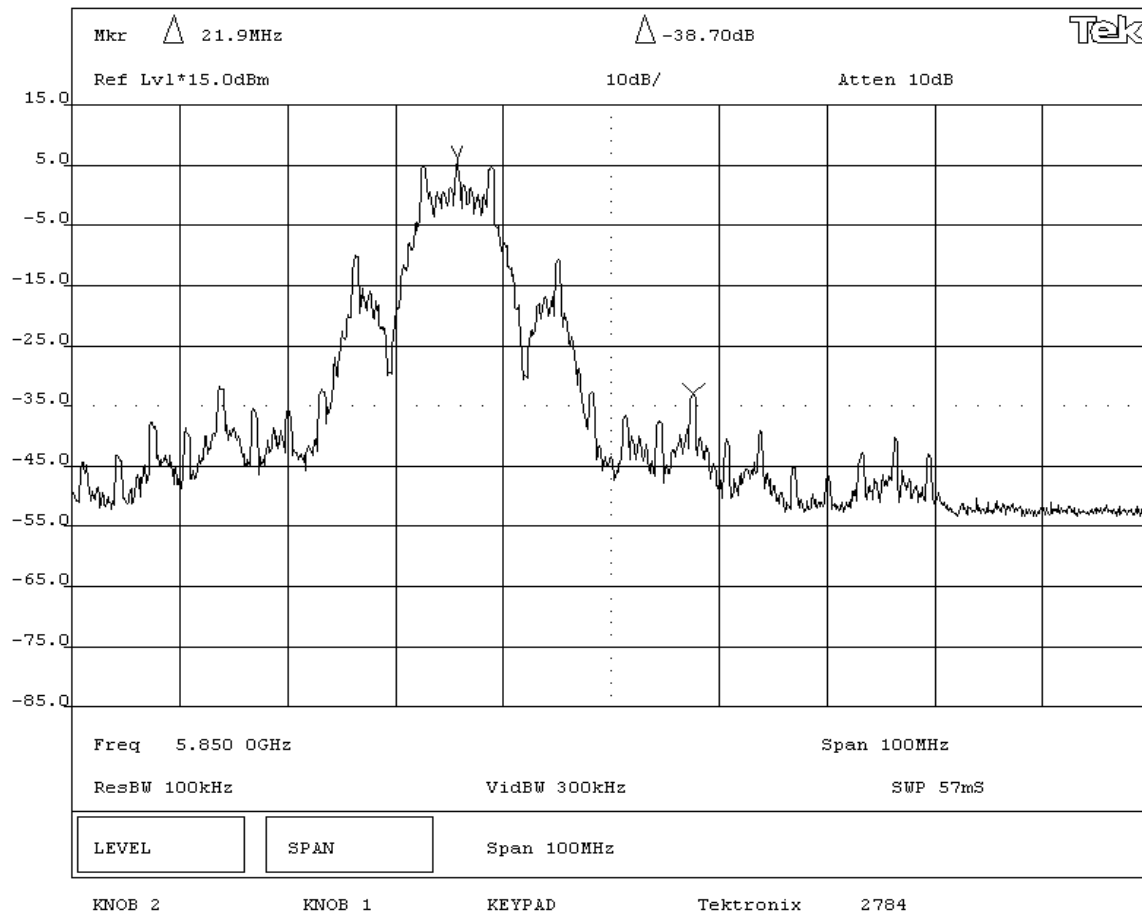
RESULTS	AMPLITUDE
Pass	-38.7 dB

SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Band Edge Compliance - High Channel





Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High
Mid
Low

Operating Modes Investigated:

Typical

Data Rates Investigated:

Maximum

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Frequency Range Investigated

Start Frequency	0 MHz	Stop Frequency	40 GHz
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Software\Firmware Applied During Test

Exercise software	GPE110_Tx	Version	1.0
Description			
The EUT was run with standard operating firmware.			

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Music Sciences	2600T	Unknown
AC Adapter	CUI Inc.	EPAS-101W-12	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	2.0	No	AC Power Adapter	AC Mains

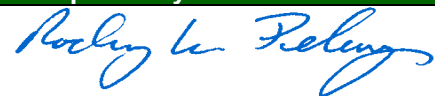
Measurement Equipment


Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo

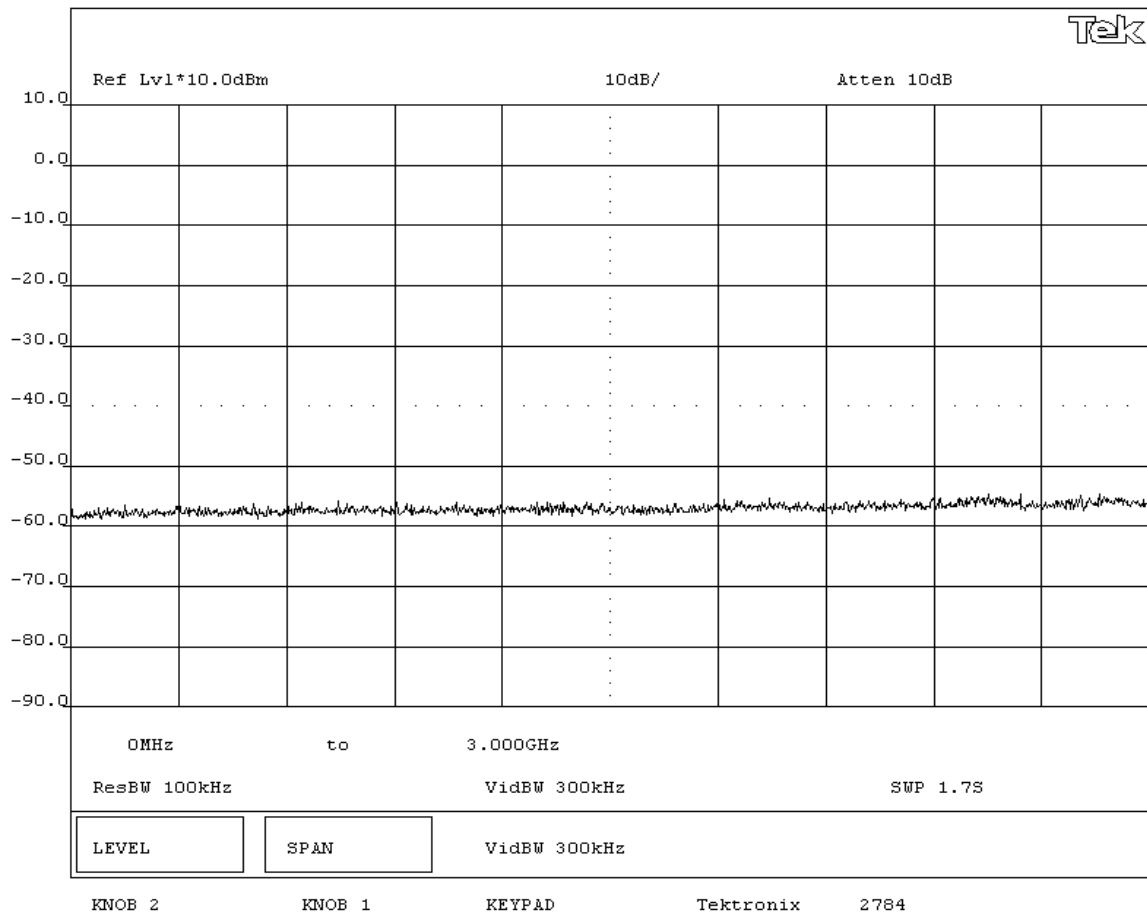
Test Description


Requirement: Per 47 CFR 15.247(d), in any 100 kHz bandwidth outside the authorized band, the maximum level of radio frequency power must be at least 20dB down from the highest emission level within the authorized band. The measurement is made with the spectrum analyzer's resolution bandwidth set to 100 kHz, and the video bandwidth set to greater than or equal to the resolution bandwidth.

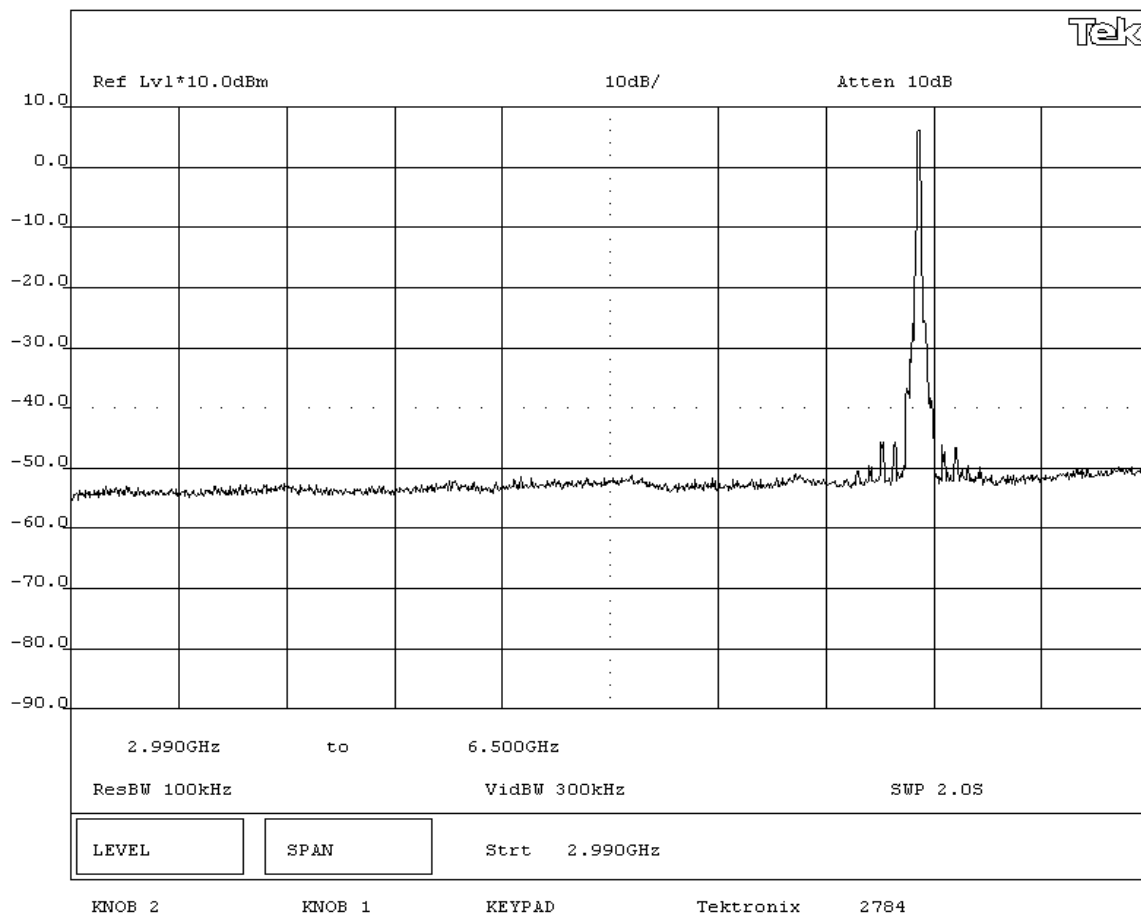
Configuration: The spurious RF conducted emissions were measured with the EUT set to low, medium, and high transmit frequencies. The measurements were made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. For each transmit frequency, the spectrum was scanned throughout the specified frequency range.

Completed by:

NORTHWEST EMC		EMISSIONS DATA SHEET		Rev BETA 01/30/01	
EUT: 2600T		Work Order: MUSI0002			
Serial Number:		Date: 07/11/05			
Customer: Music Sciences		Temperature: 70 F			
Attendees: None		Tested by: Rod Peloquin		Humidity: 42% RH	
Customer Ref. No.:		Power: 120VAC/60Hz		Job Site: EV06	
TEST SPECIFICATIONS					
Specification: FCC Part 15.247(d)		Year: 2005-04		Method: FCC 97-114, ANSI C63.4	
				Year: 2003	
SAMPLE CALCULATIONS					
COMMENTS					
EUT OPERATING MODES					
Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme					
DEVIATIONS FROM TEST STANDARD					
None					
REQUIREMENTS					
Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.					
RESULTS					
Pass					
SIGNATURE					
 Tested By: _____					
DESCRIPTION OF TEST					
Antenna Conducted Spurious Emissions 0MHz-3GHz - Low Channel					



NORTHWEST EMC		EMISSIONS DATA SHEET		Rev BETA 01/30/01	
EUT: 2600T		Work Order: MUSI0002			
Serial Number:		Date: 07/11/05			
Customer: Music Sciences		Temperature: 70 F			
Attendees: None		Tested by: Rod Peloquin		Humidity: 42% RH	
Customer Ref. No.:		Power: 120VAC/60Hz		Job Site: EV06	
TEST SPECIFICATIONS					
Specification: FCC Part 15.247(d)		Year: 2005-04		Method: FCC 97-114, ANSI C63.4	
				Year: 2003	
SAMPLE CALCULATIONS					
COMMENTS					
EUT OPERATING MODES					
Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme					
DEVIATIONS FROM TEST STANDARD					
None					
REQUIREMENTS					
Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.					
RESULTS					
Pass					
SIGNATURE					
 Tested By: _____					
DESCRIPTION OF TEST					
Antenna Conducted Spurious Emissions 3GHz-6.5GHz - Low Channel					



EMISSIONS DATA SHEET

Rev BETA
01/30/01

EUT:	2600T		Work Order:	MUSI0002
Serial Number:			Date:	07/11/05
Customer:	Music Sciences		Temperature:	70 F
Attendees:	None	Tested by:	Rod Peloquin	
Customer Ref. No.:		Power:	120VAC/60Hz	Humidity:
			Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

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COMMENTS

Comments	

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

Pass

SIGNATURE

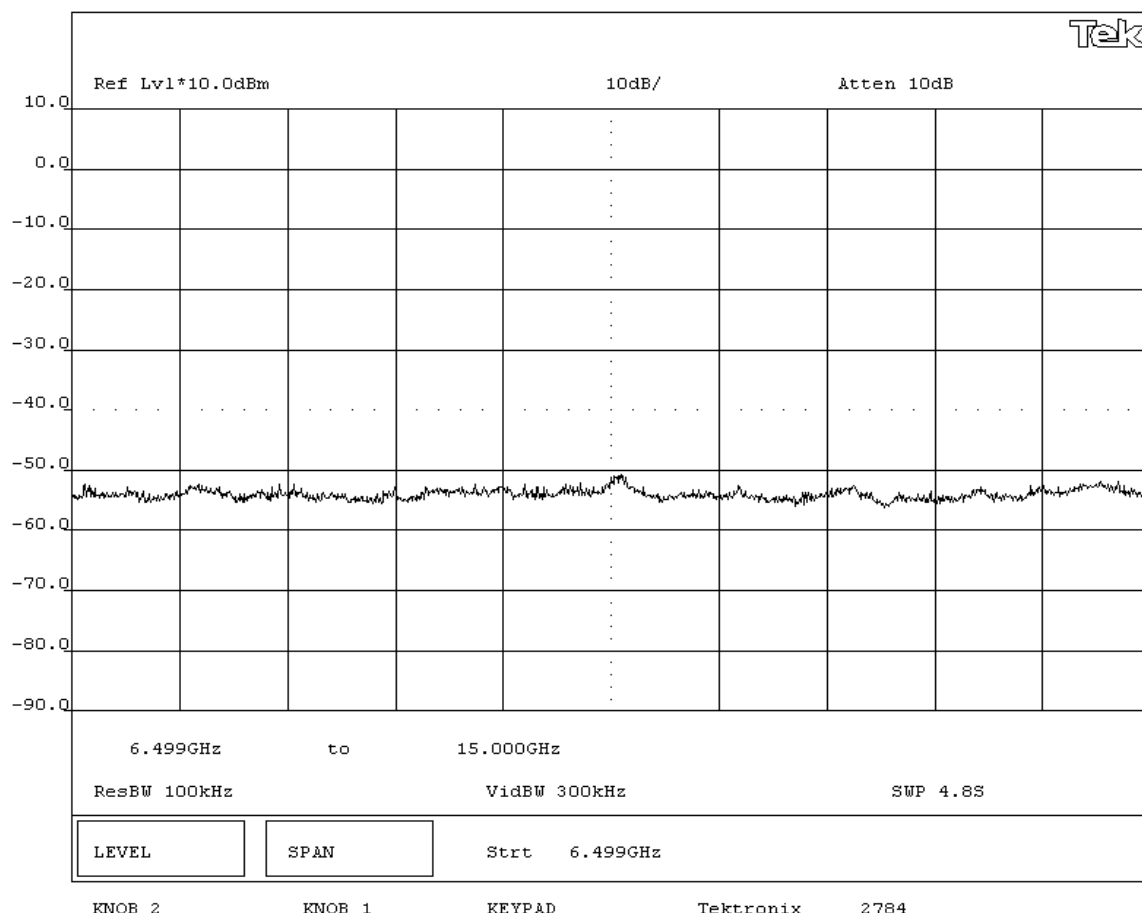
SIGNATURE

Rocky L. Pelley

Tested By: _____

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 6.5GHz-15GHz - Low Channel



EMISSIONS DATA SHEET

Rev BETA
01/30/01

EUT:	2600T	Work Order:	MUSI0002
Serial Number:		Date:	07/11/05
Customer:	Music Sciences	Temperature:	70 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Humidity:	42% RH
		Power:	120VAC/60Hz
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

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COMMENTS

COMMENTS	

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

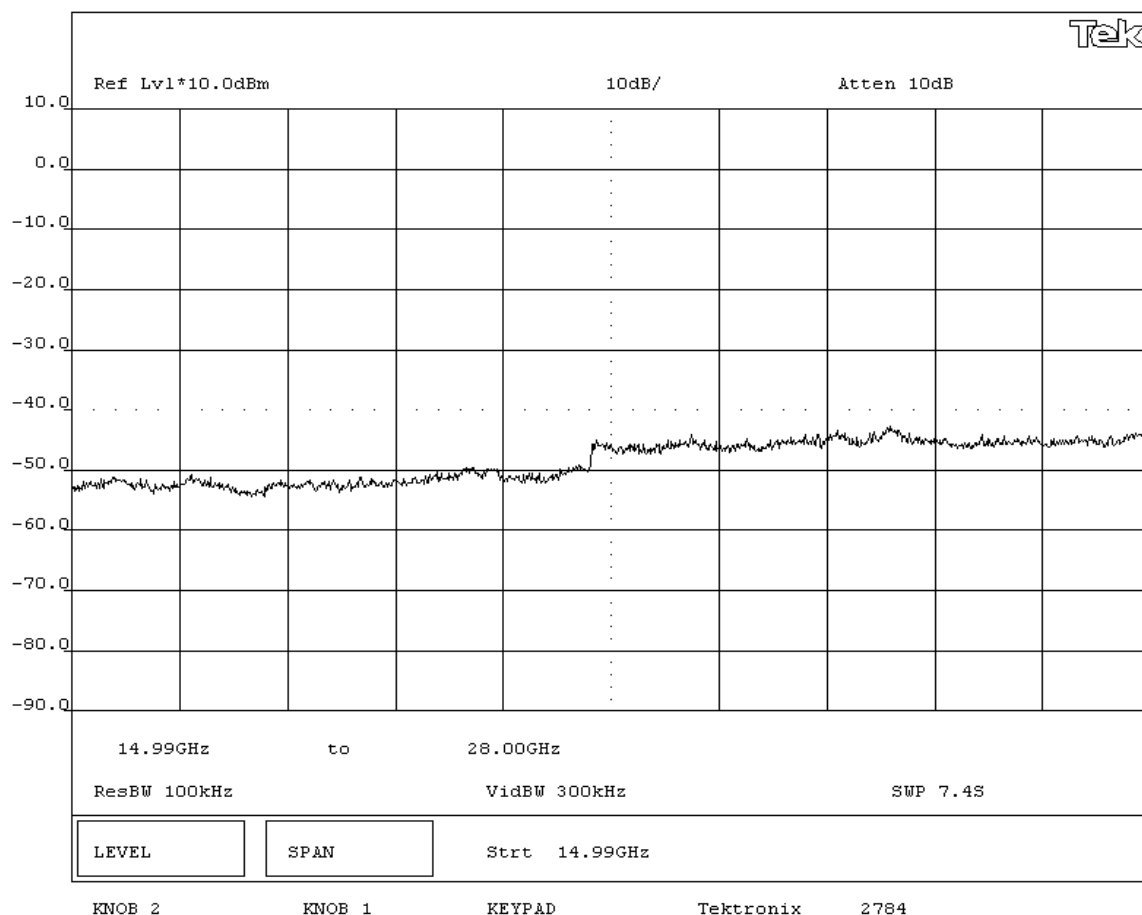
Pass

SIGNATURE

Tested By: Rocky Le Pellego

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 15GHz - 28GHz - Low Channel



EUT:	2600T		Work Order:	MUSI0002
Serial Number:			Date:	07/11/05
Customer:	Music Sciences		Temperature:	70 F
Attendees:	None	Tested by:	Rod Peloquin	
Customer Ref. No.:		Power:	120VAC/60Hz	Humidity:
			Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

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COMMENTS

Comments	

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

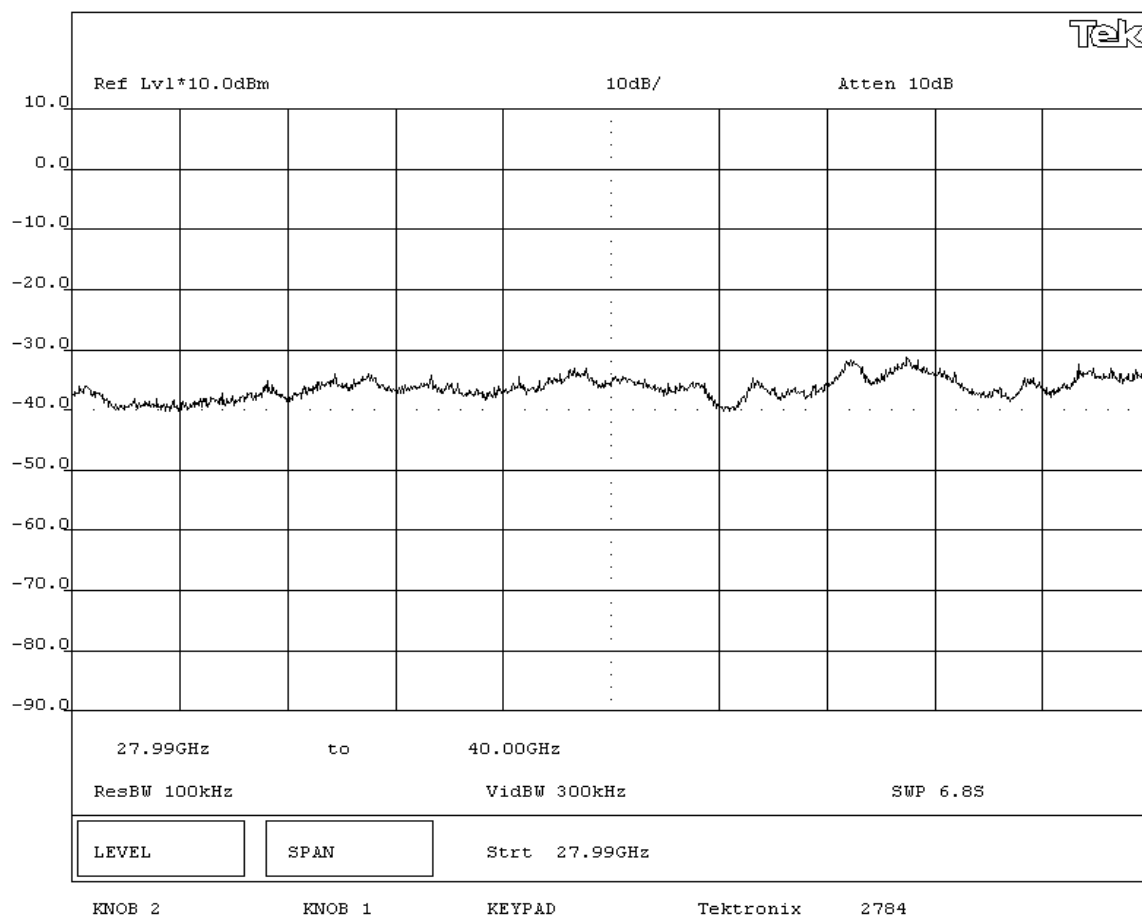
Pass

SIGNATURE

Tested By: Rocky Le Pellego

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 28GHz - 40GHz - Low Channel



EMISSIONS DATA SHEET

Rev BETA
01/30/01

EUT:	2600T	Work Order:	MUSI0002
Serial Number:		Date:	07/11/05
Customer:	Music Sciences	Temperature:	70 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Power:	120VAC/60Hz
		Humidity:	42% RH
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

COMMENTS

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

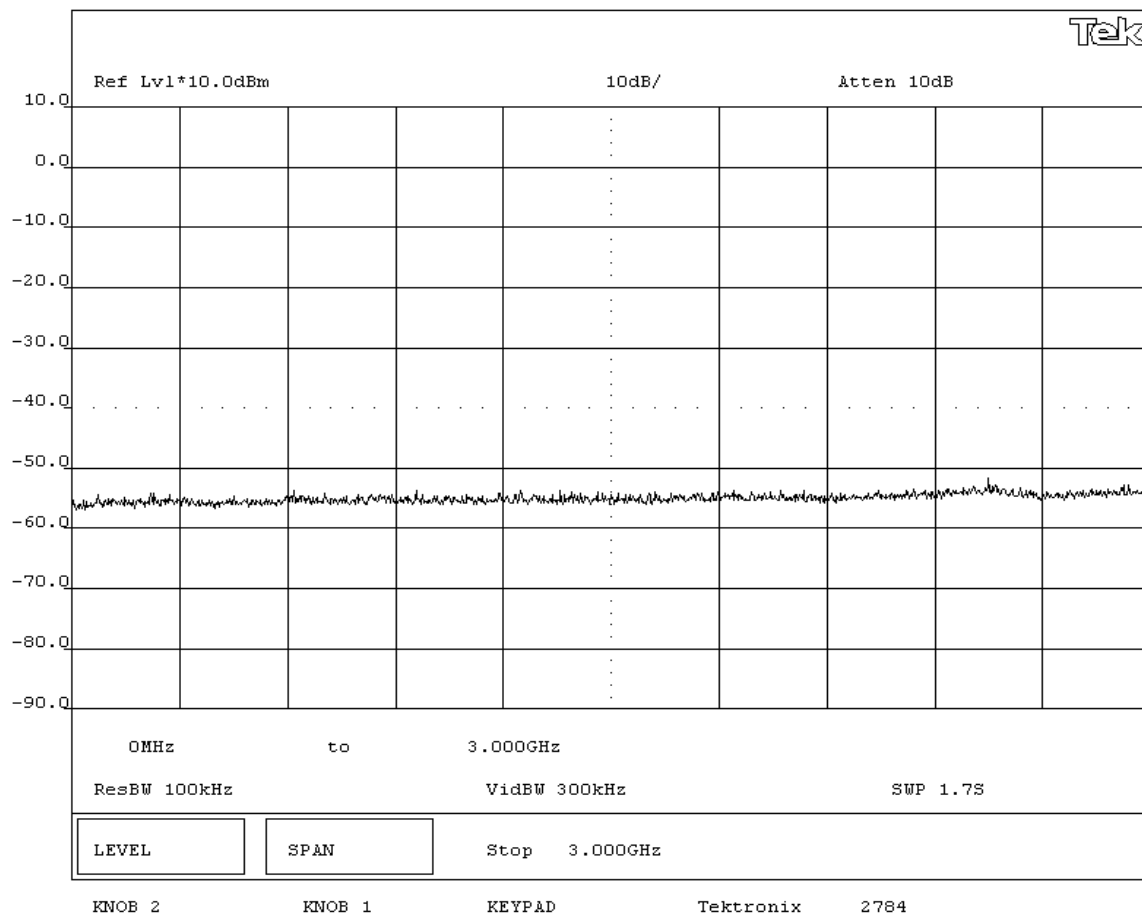
Pass

SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 0MHz-3GHz - Mid Channel



EMISSIONS DATA SHEET

Rev BETA
01/30/01

EUT:	2600T	Work Order:	MUSI0002
Serial Number:		Date:	07/11/05
Customer:	Music Sciences	Temperature:	70 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Power:	120VAC/60Hz
		Humidity:	42% RH
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

COMMENTS

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

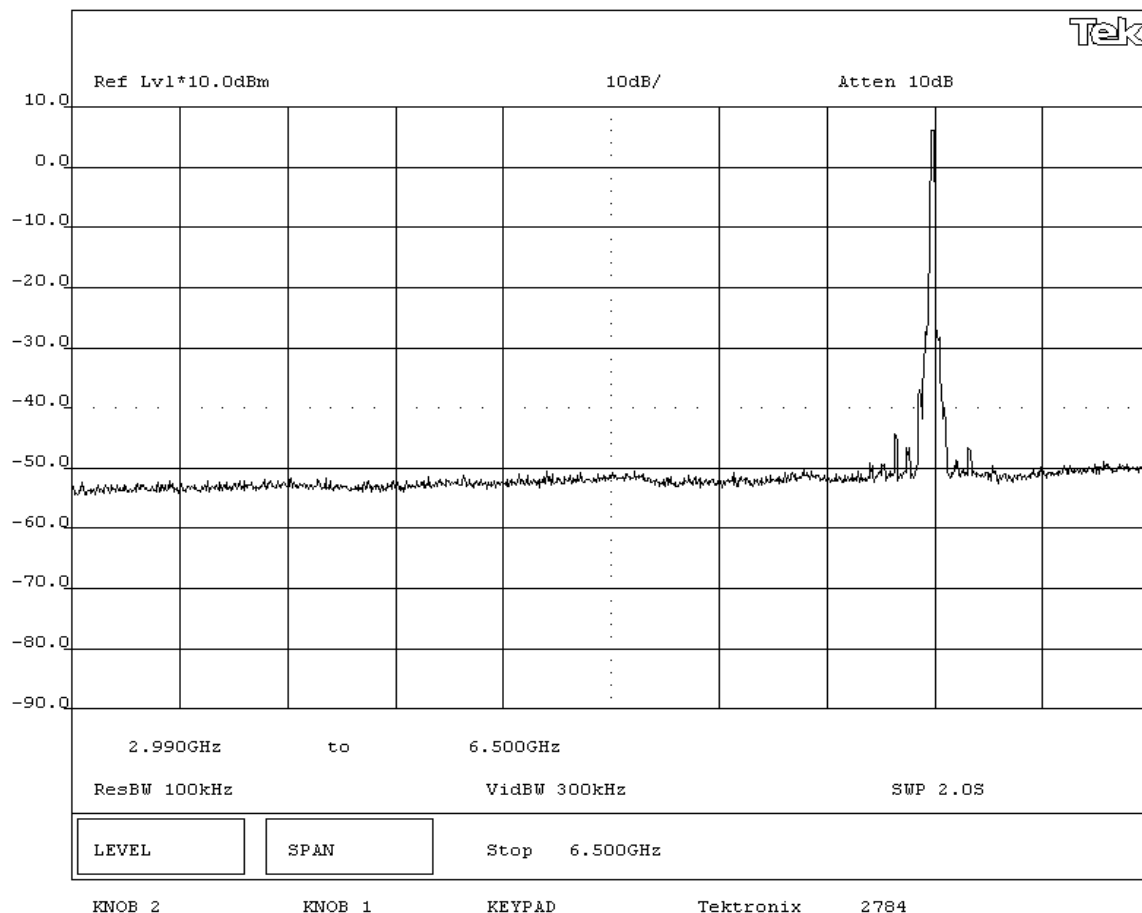
Pass

SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 3GHz-6.5GHz - Mid Channel



EUT:	2600T		Work Order:	MUSI0002
Serial Number:			Date:	07/11/05
Customer:	Music Sciences		Temperature:	70 F
Attendees:	None	Tested by:	Rod Peloquin	
Customer Ref. No.:		Power:	120VAC/60Hz	Humidity:
			Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

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COMMENTS

Comments	

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

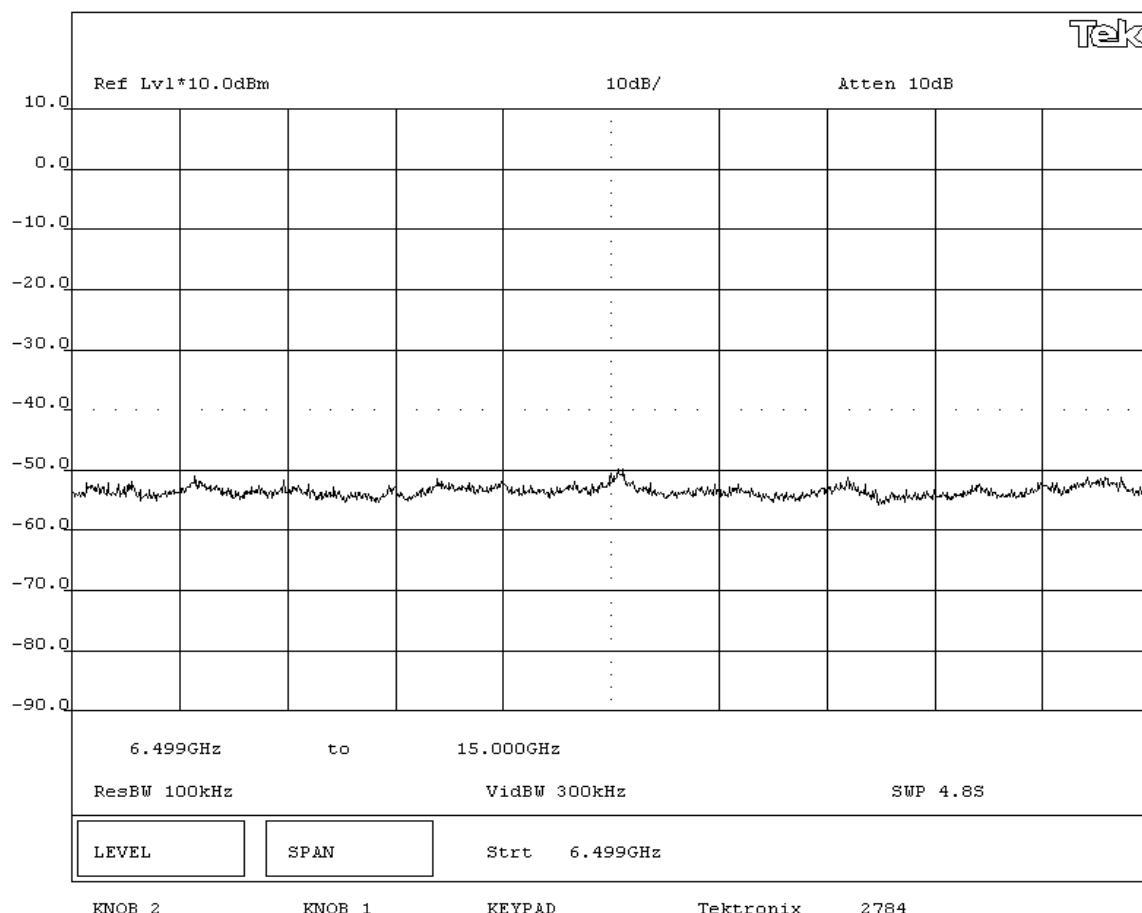
Pass


SIGNATURE

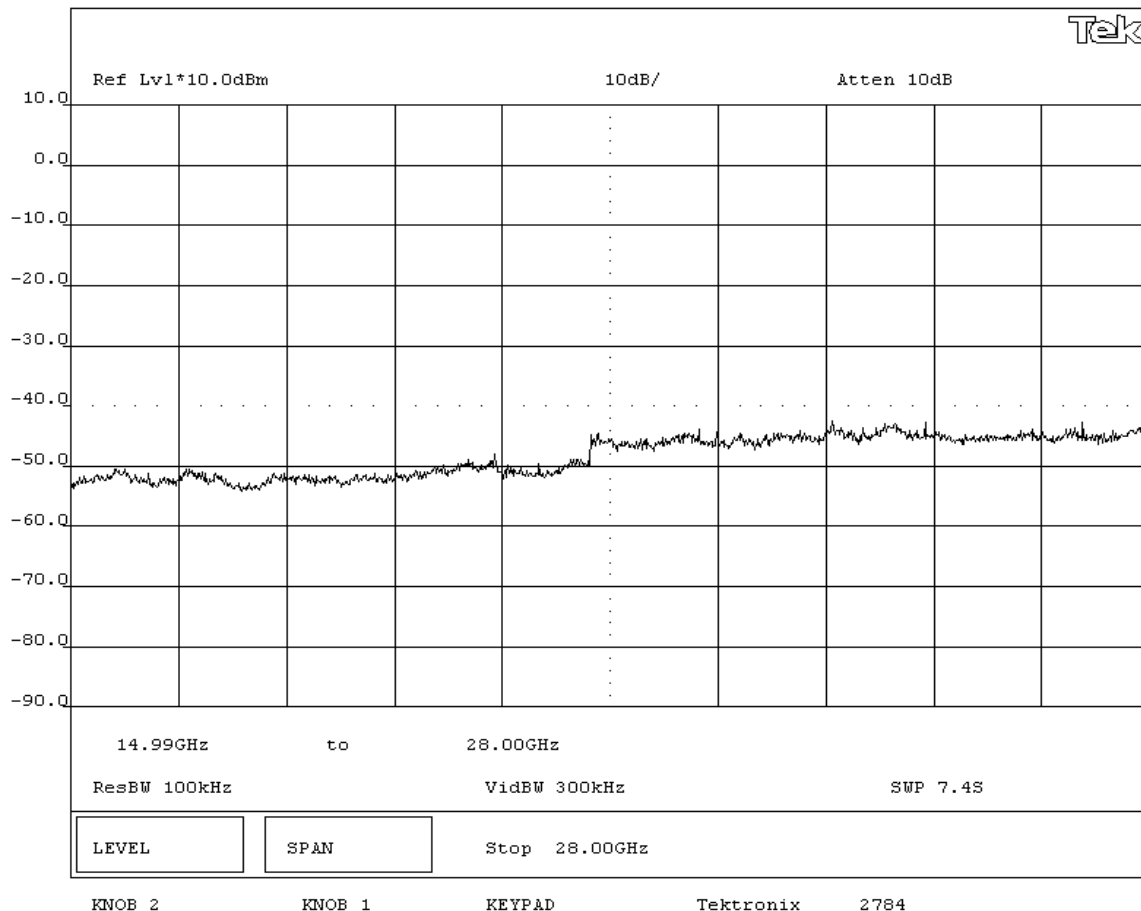
Tested By: Rocky Le Pelley


DESCRIPTION OF TEST

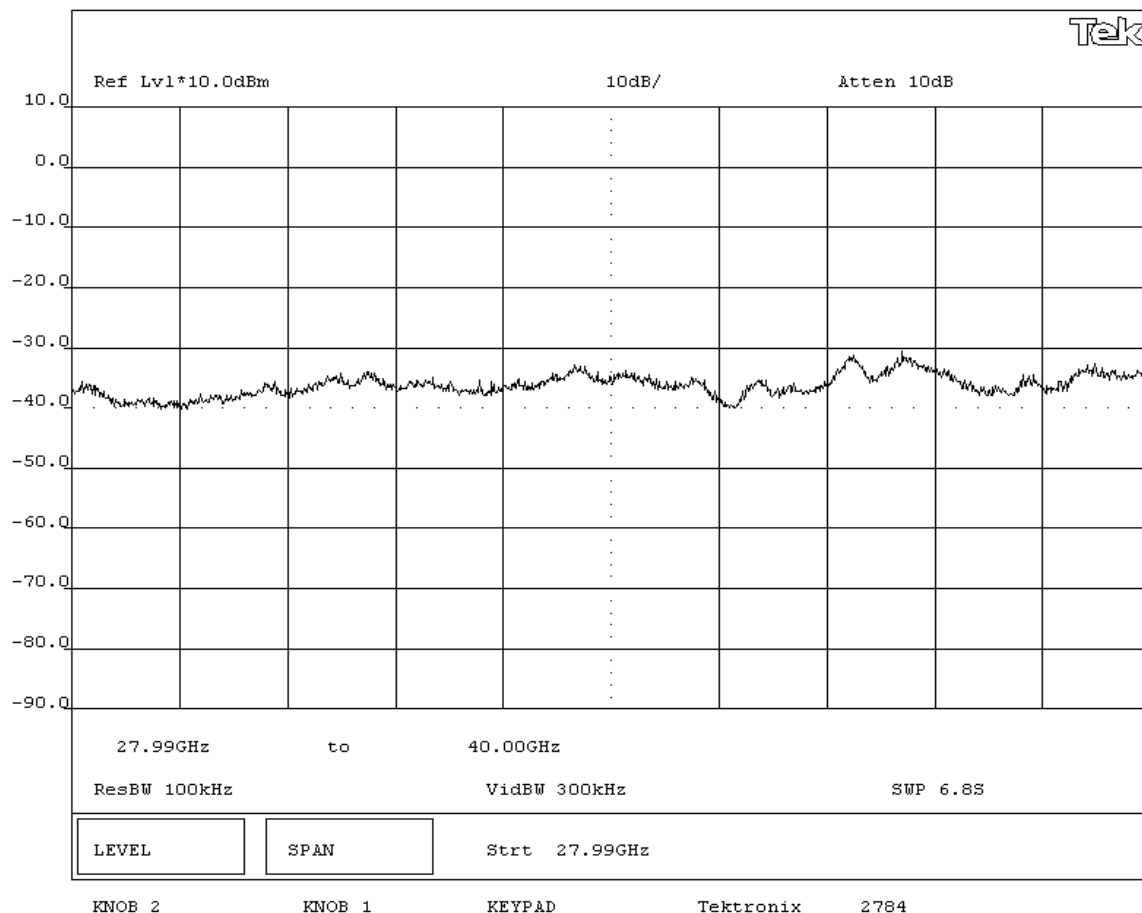
Antenna Conducted Spurious Emissions 6.5GHz-15GHz - Mid Channel



NORTHWEST EMC		EMISSIONS DATA SHEET		Rev BETA 01/30/01	
EUT: 2600T		Work Order: MUSI0002			
Serial Number:		Date: 07/11/05			
Customer: Music Sciences		Temperature: 70 F			
Attendees: None		Tested by: Rod Peloquin		Humidity: 42% RH	
Customer Ref. No.:		Power: 120VAC/60Hz		Job Site: EV06	
TEST SPECIFICATIONS					
Specification: FCC Part 15.247(d)		Year: 2005-04		Method: FCC 97-114, ANSI C63.4	
				Year: 2003	
SAMPLE CALCULATIONS					
COMMENTS					
EUT OPERATING MODES					
Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme					
DEVIATIONS FROM TEST STANDARD					
None					
REQUIREMENTS					
Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.					
RESULTS					
Pass					
SIGNATURE					
 Tested By: _____					
DESCRIPTION OF TEST					
Antenna Conducted Spurious Emissions 15GHz - 28GHz - Mid Channel					



NORTHWEST EMC				EMISSIONS DATA SHEET				Rev BETA 01/30/01	
EUT: 2600T				Work Order: MUSI0002					
Serial Number:				Date: 07/11/05					
Customer: Music Sciences				Temperature: 70 F					
Attendees: None				Tested by: Rod Peloquin				Humidity: 42% RH	
Customer Ref. No.:				Power: 120VAC/60Hz				Job Site: EV06	
TEST SPECIFICATIONS									
Specification: FCC Part 15.247(d)				Year: 2005-04		Method: FCC 97-114, ANSI C63.4		Year: 2003	
SAMPLE CALCULATIONS									
COMMENTS									
EUT OPERATING MODES									
Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme									
DEVIATIONS FROM TEST STANDARD									
None									
REQUIREMENTS									
Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.									
RESULTS									
Pass									
SIGNATURE									
 Tested By: _____									
DESCRIPTION OF TEST									
Antenna Conducted Spurious Emissions 28GHz - 40GHz - Mid Channel									



EMISSIONS DATA SHEET

Rev BETA
01/30/01

EUT:	2600T	Work Order:	MUSI0002
Serial Number:		Date:	07/15/05
Customer:	Music Sciences	Temperature:	72 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Power:	120VAC/60Hz
		Humidity:	45% RH
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

COMMENTS

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

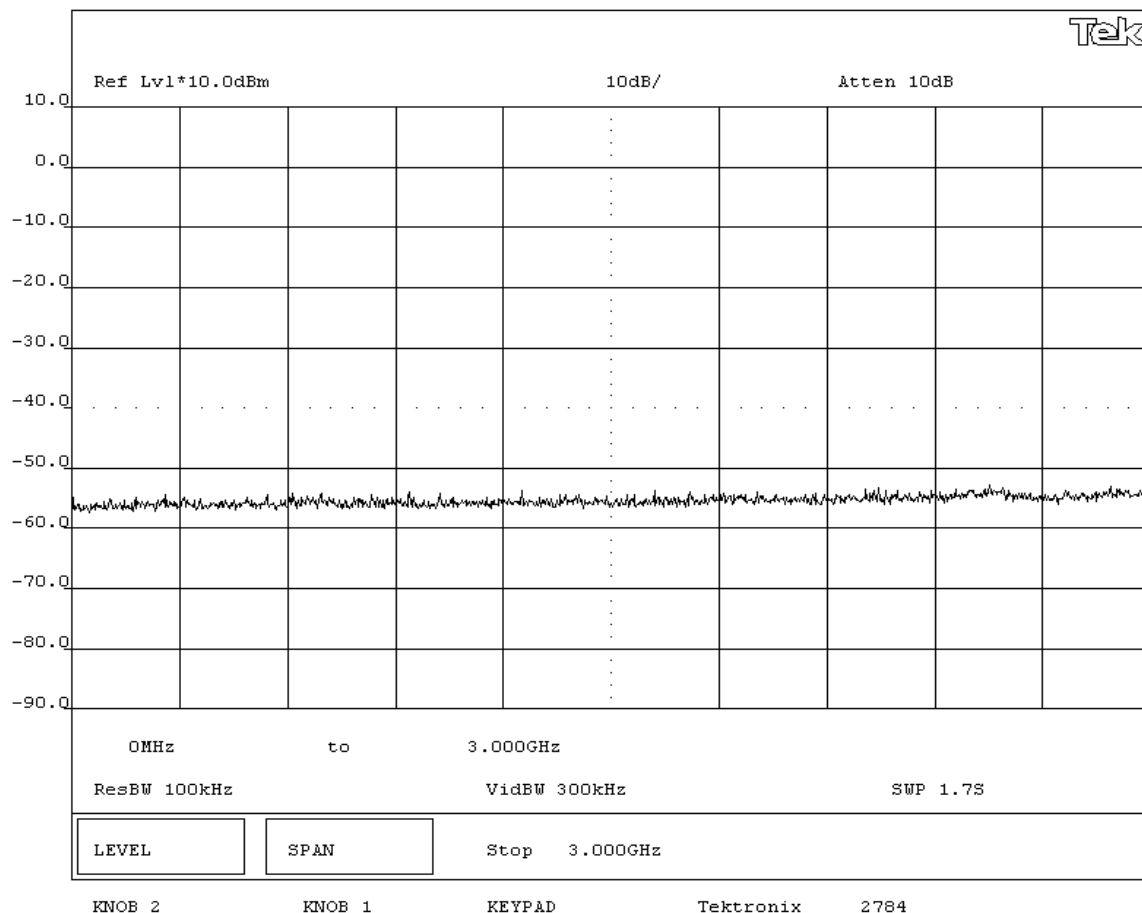
Pass

SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 0MHz-3GHz - High Channel



EMISSIONS DATA SHEET

Rev BETA
01/30/01

EUT:	2600T	Work Order:	MUSI0002
Serial Number:		Date:	07/15/05
Customer:	Music Sciences	Temperature:	72 F
Attendees:	None	Humidity:	45% RH
Customer Ref. No.:		Tested by:	Rod Peloquin
		Power:	120VAC/60Hz
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

COMMENTS

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

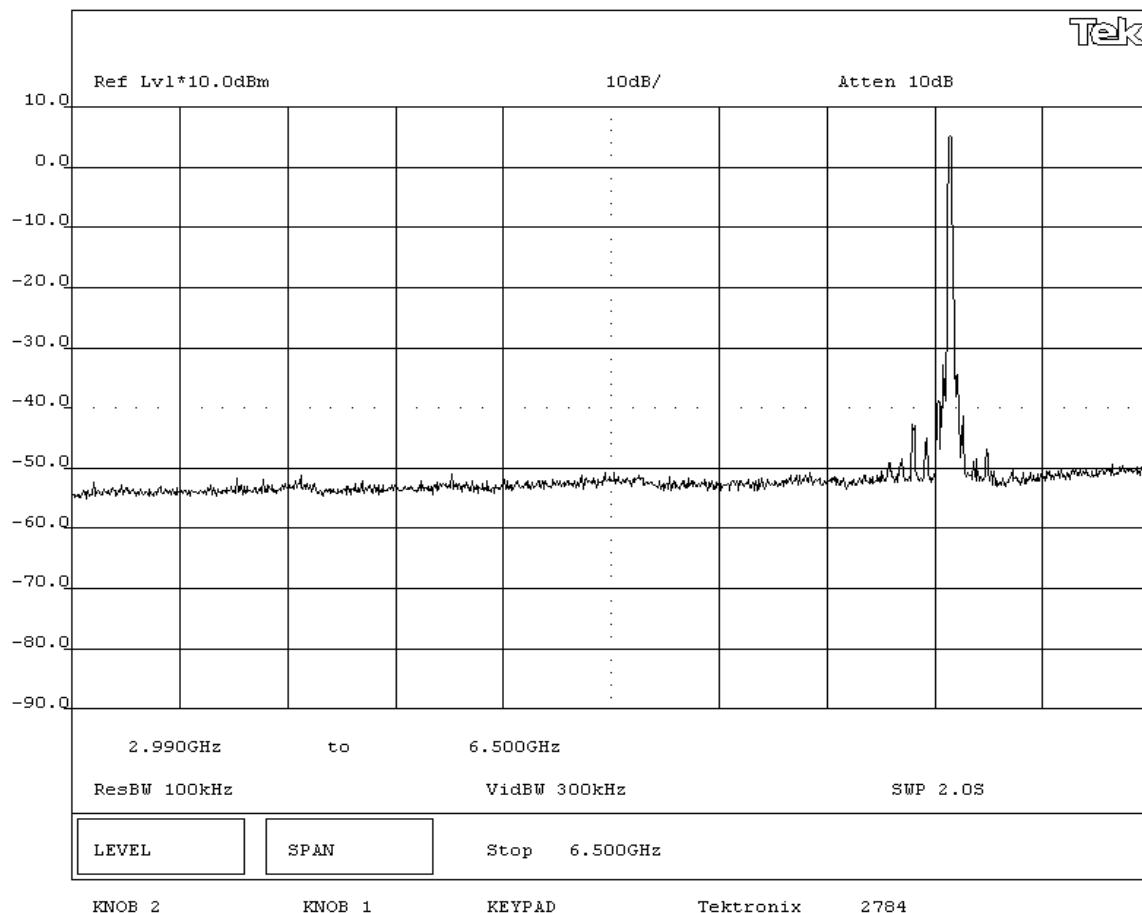
Pass

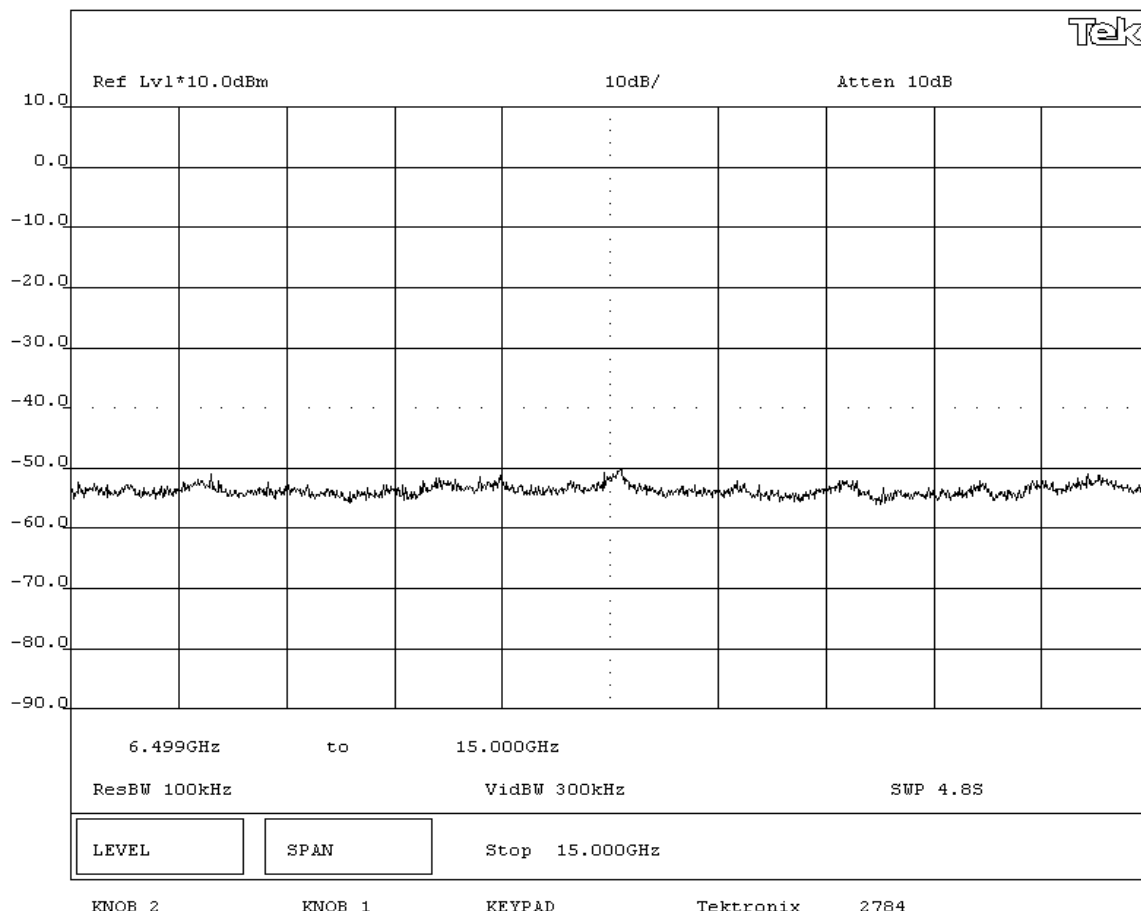
SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 3GHz-6.5GHz - High Channel





EUT:	2600T	Work Order:	MUSI0002
Serial Number:		Date:	07/15/05
Customer:	Music Sciences	Temperature:	72 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Power:	120VAC/60Hz
		Humidity:	45% RH
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

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COMMENTS

Comments	

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

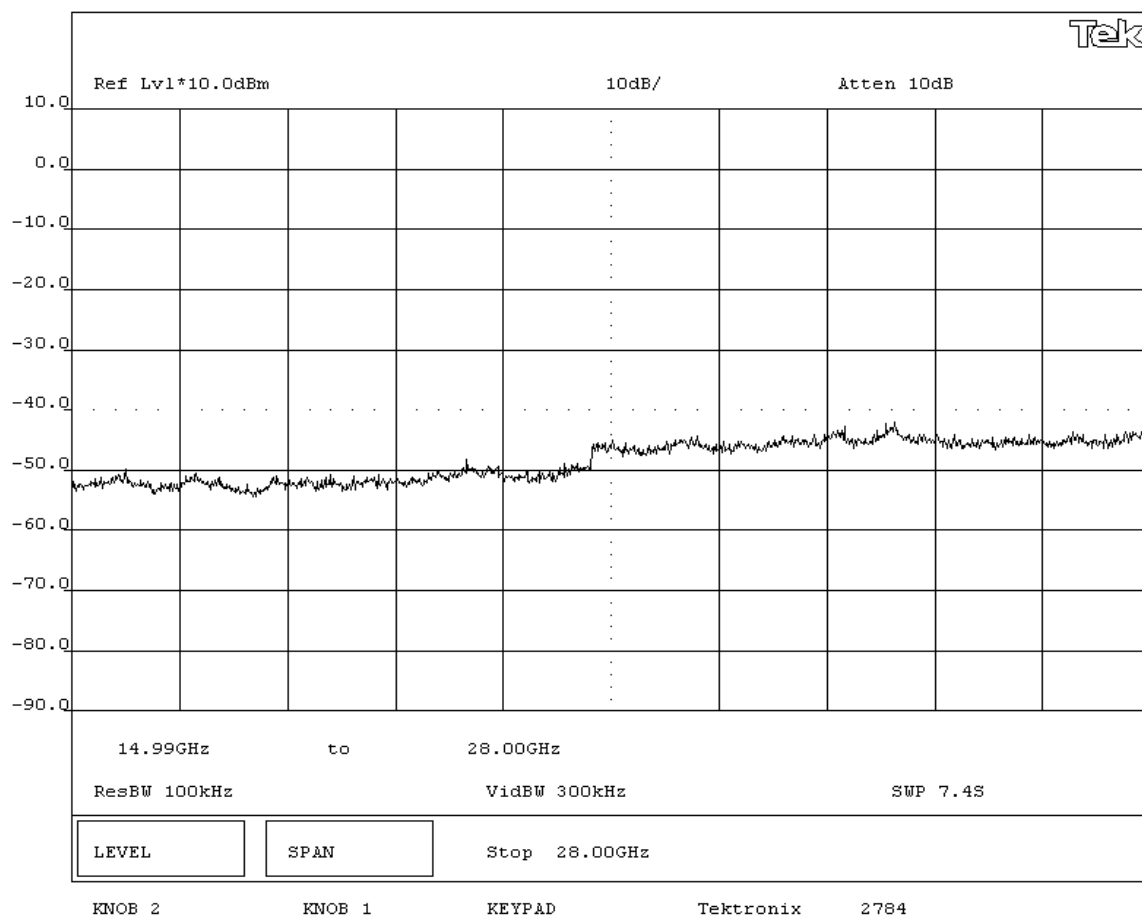
Pass

SIGNATURE

Tested By: Rocky Le Pellego

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 15GHz - 28GHz - High Channel



EUT:	2600T	Work Order:	MUSI0002
Serial Number:		Date:	07/15/05
Customer:	Music Sciences	Temperature:	72 F
Attendees:	None	Tested by:	Rod Peloquin
Customer Ref. No.:		Power:	120VAC/60Hz
		Humidity:	45% RH
		Job Site:	EV06

TEST SPECIFICATIONS

Specification:	FCC Part 15.247(d)	Year:	2005-04	Method:	FCC 97-114, ANSI C63.4	Year:	2003
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SAMPLE CALCULATIONS

COMMENTS

EUT OPERATING MODES

Modulated by PRBS at 1 Mbps data rate, 802.11(b) modulation scheme

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum level of any spurious emission outside of the authorized band is 20 dB down from the fundamental.

RESULTS

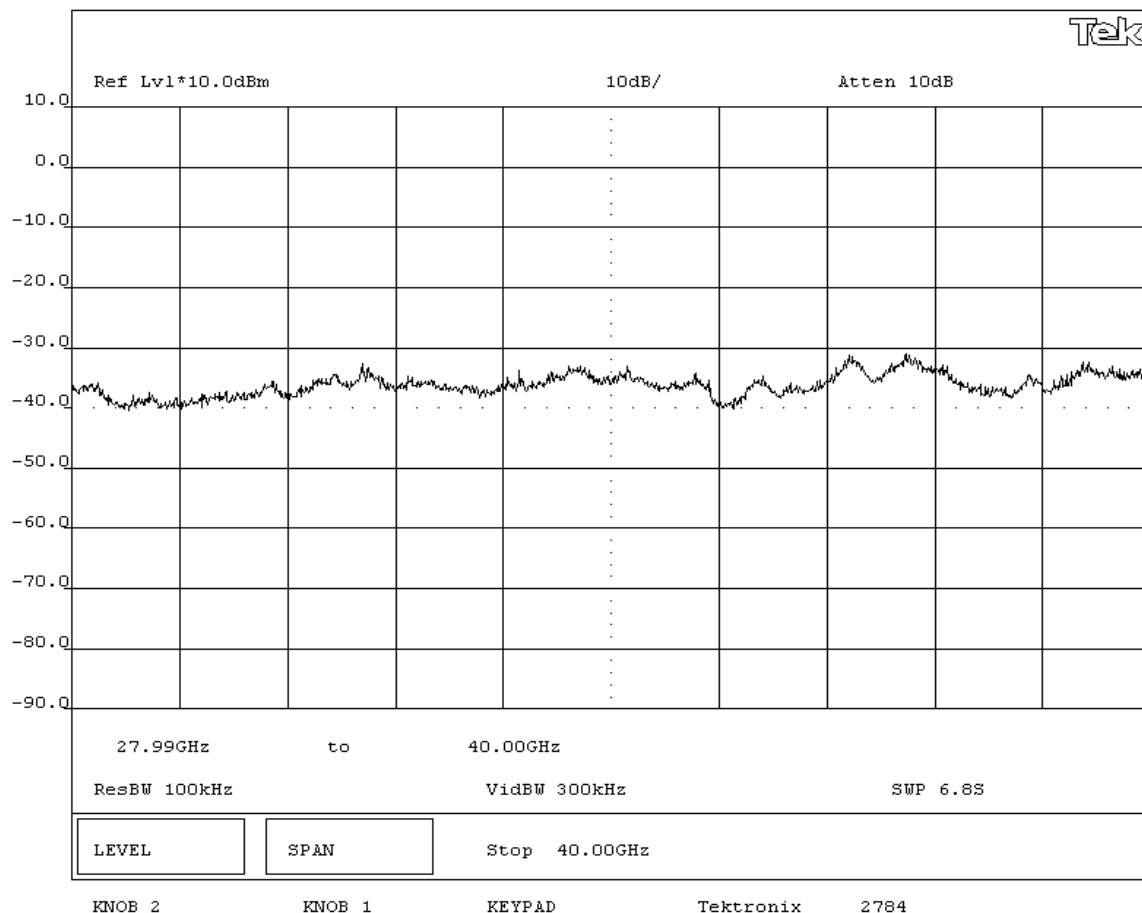
Pass

SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Antenna Conducted Spurious Emissions 28GHz - 40GHz - High Channel





Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High
Mid
Low

Operating Modes Investigated:

Typical

Data Rates Investigated:

Maximum

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Software\Firmware Applied During Test

Exercise software	GPE110_Tx	Version	1.0
Description			
The EUT was run with standard operating firmware.			

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Music Sciences	2600T	Unknown
AC Adapter	CUI Inc.	EPAS-101W-12	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	2.0	No	AC Power Adapter	AC Mains

Measurement Equipment

Description	Manufacturer	Model	Identifier	Last Cal	Interval
Spectrum Analyzer	Tektronix	2784	AAO	01/02/2005	12 mo

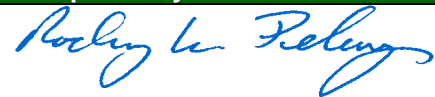
Test Description


Requirement: Per 47 CFR 15.247(e), the peak power spectral density conducted from the antenna port of a direct sequence transmitter must not be greater than +8 dBm in any 3 kHz band during any time interval of continuous transmission.

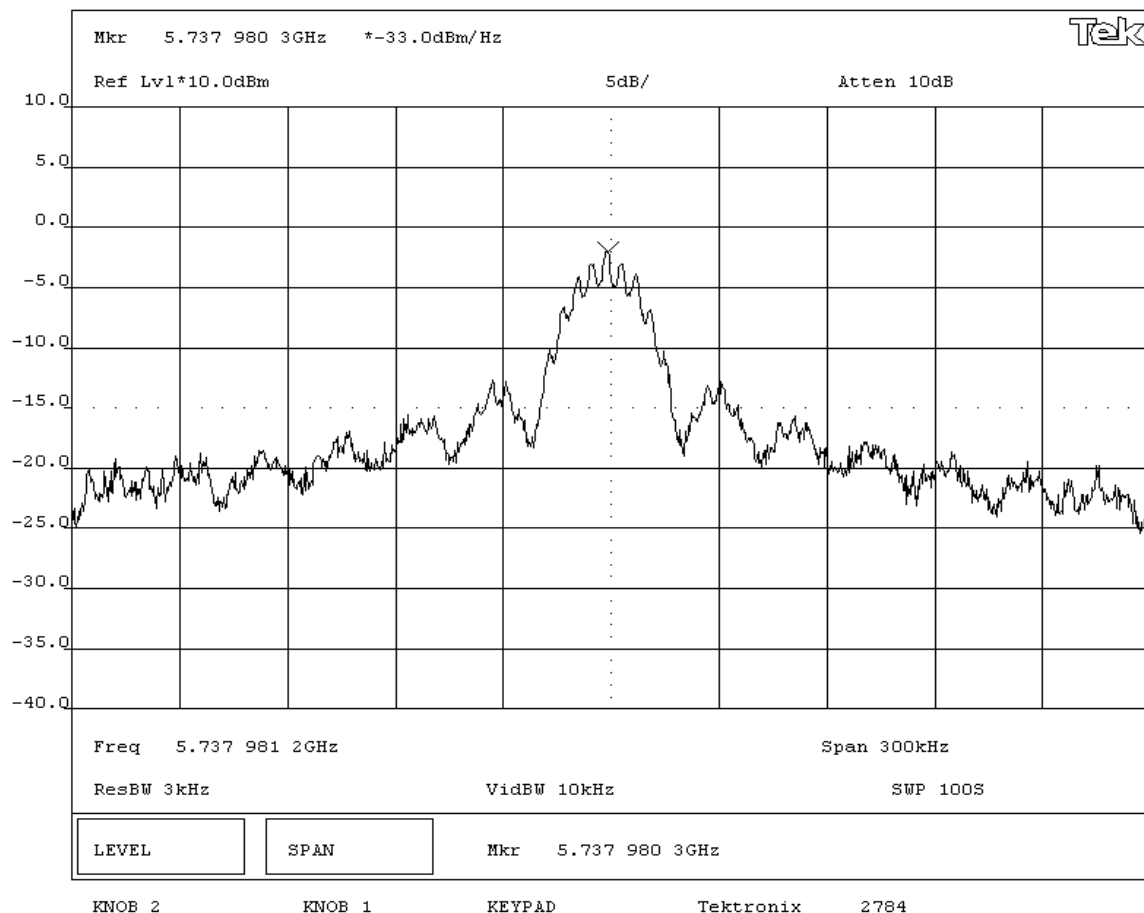
Configuration: The peak power spectral density measurements were measured with the EUT set to low, mid, and high transmit frequencies. The measurement was made using a direct connection between the RF output of the EUT and the spectrum analyzer. The EUT was transmitting at its maximum data rate using direct sequence modulation. Per the procedure outlined in FCC 97-114, the spectrum analyzer was used as follows:

The emission peak(s) were located and zoom in on within the passband. The resolution bandwidth was set to 3 kHz, the video bandwidth was set to greater than or equal to the resolution bandwidth. The sweep speed was set equal to the span divided by 3 kHz (sweep = $(\text{SPAN}/3 \text{ kHz})$). For example, given a span of 1.5 MHz, the sweep should be $1.5 \times 10^6 \div 3 \times 10^3 = 500$ seconds. External attenuation was used and added to the reading. The following FCC procedure was used for modifying the power spectral density measurements:

"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 34.8 dB for correction to 3 kHz."

Completed by:

NORTHWEST EMC		EMISSIONS DATA SHEET		Rev BETA 01/30/01	
EUT: 2600T				Work Order: MUSI0002	
Serial Number:				Date: 07/11/05	
Customer: Music Sciences				Temperature: 70 F	
Attendees: None				Tested by: Rod Peloquin	
Customer Ref. No.:				Humidity: 42% RH	
				Power: 120VAC/60Hz	
				Job Site: EV06	
TEST SPECIFICATIONS					
Specification: FCC Part 15.247(e)		Year: 2005-04		Method: FCC 97-114, ANSI C63.4	
				Year: 2003	
SAMPLE CALCULATIONS					
Meter reading on spectrum analyzer is internally compensated for cable loss and external attenuation.					
Power Spectral Density per 3kHz bandwidth = Power Spectral Density per 1 Hz bandwidth + Bandwidth Correction Factor.					
Bandwidth Correction Factor = $10 \cdot \log(3 \text{ kHz} / 1 \text{ Hz}) = 34.8 \text{ dB}$					
COMMENTS					
EUT OPERATING MODES					
Modulated by PRBS maximum data rate					
DEVIATIONS FROM TEST STANDARD					
None					
REQUIREMENTS					
Maximum peak power spectral density conducted from a DSSS transmitter does not exceed 8 dBm in any 3 kHz band					
RESULTS					
				Amplitude	
Pass				Power Spectral Density = 1.8 dBm / 3kHz	
SIGNATURE					
 Tested By: _____					
DESCRIPTION OF TEST					
Power Spectral Density - Low Channel					



NORTHWEST
EMC**EMISSIONS DATA SHEET**Rev BETA
01/30/01

EUT: 2600T			Work Order: MUSI0002		
Serial Number:			Date: 07/11/05		
Customer: Music Sciences			Temperature: 70 F		
Attendees: None			Humidity: 42% RH		
Customer Ref. No.:			Job Site: EV06		
			Tested by: Rod Peloquin		
			Power: 120VAC/60Hz		

TEST SPECIFICATIONS

Specification: FCC Part 15.247(e)	Year: 2005-04	Method: FCC 97-114, ANSI C63.4	Year: 2003
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SAMPLE CALCULATIONS

Meter reading on spectrum analyzer is internally compensated for cable loss and external attenuation.

Power Spectral Density per 3kHz bandwidth = Power Spectral Density per 1 Hz bandwidth + Bandwidth Correction Factor.

Bandwidth Correction Factor = $10 \cdot \log(3 \text{ kHz} / 1 \text{ Hz}) = 34.8 \text{ dB}$ **COMMENTS****EUT OPERATING MODES**

Modulated by PRBS maximum data rate

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

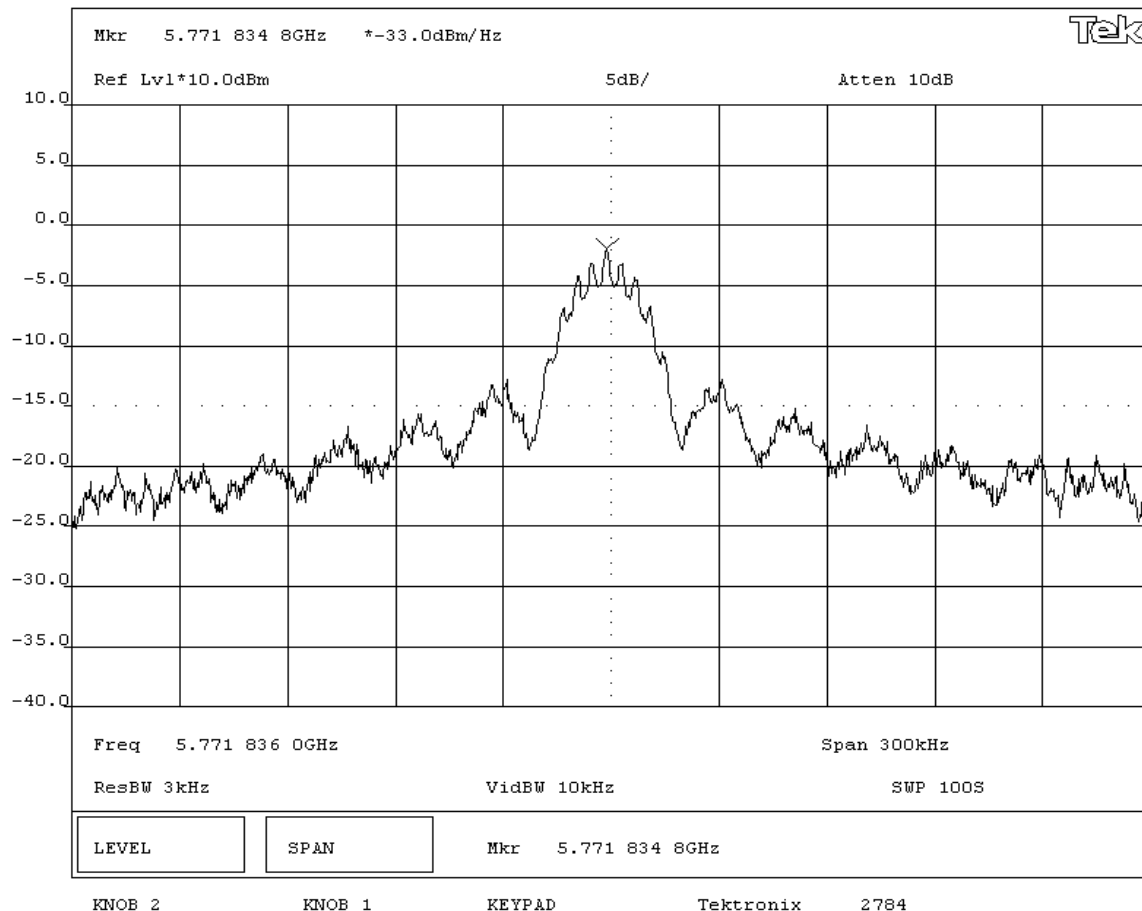
Maximum peak power spectral density conducted from a DSSS transmitter does not exceed 8 dBm in any 3 kHz band

RESULTS

Amplitude

Pass

Power Spectral Density = 1.8 dBm / 3kHz

SIGNATURETested By: **DESCRIPTION OF TEST****Power Spectral Density - Mid Channel**

EMISSIONS DATA SHEET

Rev BETA
01/30/01

EUT: 2600T			Work Order: MUSI0002		
Serial Number:			Date: 07/15/05		
Customer: Music Sciences			Temperature: 72 F		
Attendees: None			Humidity: 45% RH		
Customer Ref. No.:			Job Site: EV06		
			Tested by: Rod Peloquin		
			Power: 120VAC/60Hz		

TEST SPECIFICATIONS

Specification: FCC Part 15.247(e)	Year: 2005-04	Method: FCC 97-114, ANSI C63.4	Year: 2003
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SAMPLE CALCULATIONS

Meter reading on spectrum analyzer is internally compensated for cable loss and external attenuation.

Power Spectral Density per 3kHz bandwidth = Power Spectral Density per 1 Hz bandwidth + Bandwidth Correction Factor.

Bandwidth Correction Factor = $10 \cdot \log(3 \text{ kHz} / 1 \text{ Hz}) = 34.8 \text{ dB}$

COMMENTS

EUT OPERATING MODES

Modulated by PRBS maximum data rate

DEVIATIONS FROM TEST STANDARD

None

REQUIREMENTS

Maximum peak power spectral density conducted from a DSSS transmitter does not exceed 8 dBm in any 3 kHz band

RESULTS

Amplitude

Pass

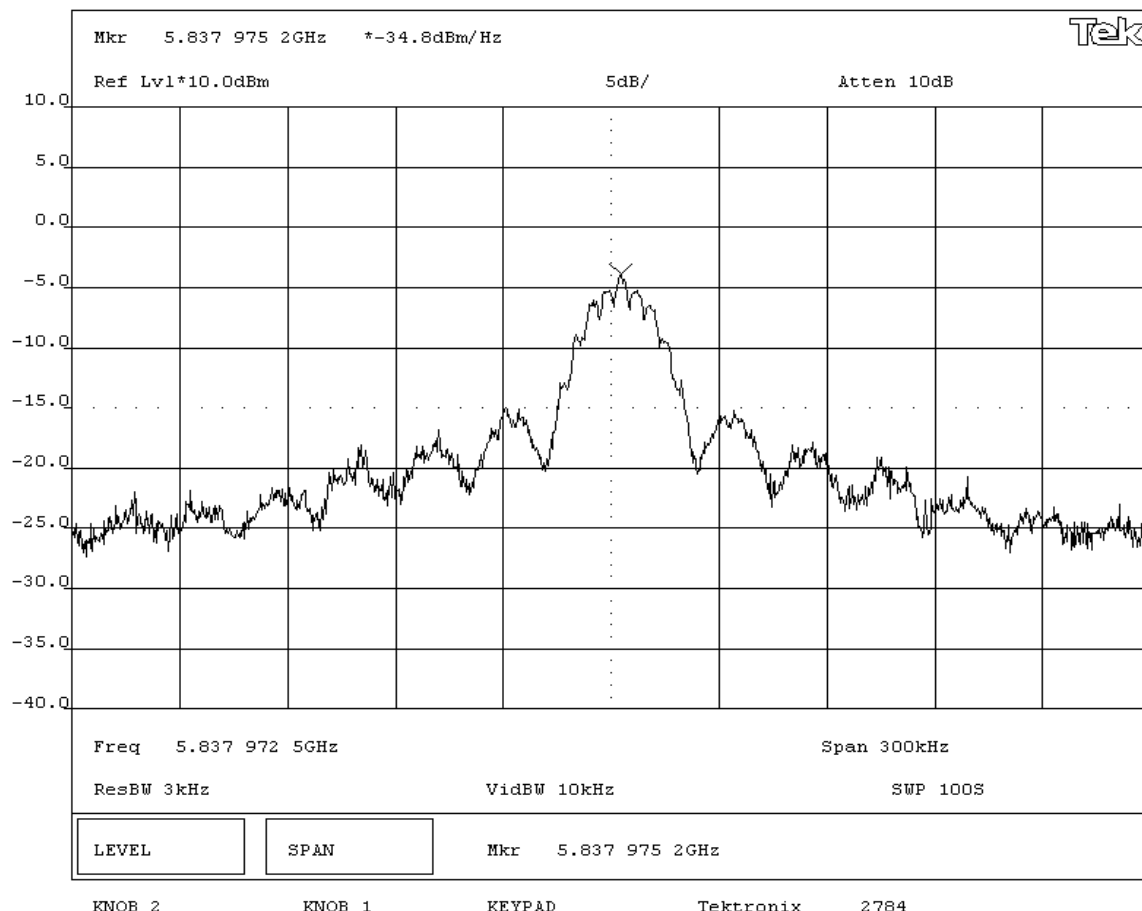
Power Spectral Density = 0 dBm / 3kHz

SIGNATURE

Tested By: 

DESCRIPTION OF TEST

Power Spectral Density - High Channel





Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High
Mid
Low

Operating Modes Investigated:

Typical

Antennas Investigated:

Internal

Data Rates Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Frequency Range Investigated

Start Frequency	30 MHz	Stop Frequency	40 GHz
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Software\Firmware Applied During Test

Exercise software	GPE110_Tx	Version	1.0
Description			
The EUT was run with standard operating firmware.			

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Music Sciences	2600T	Unknown
AC Adapter	CUI Inc.	EPAS-101W-12	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Leads	No	1.6	No	EUT	AC Adapter
Audio (x2)	Yes	1.8	No	EUT	Unterminated

Measurement Equipment					
Description	Manufacturer	Model	Identifier	Last Cal	Interval
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQF	12/02/2004	13 mo
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	12/02/2004	13 mo
Spectrum Analyzer Display	Hewlett Packard	85662A	AALD	12/02/2004	13 mo
Antenna, Biconilog	EMCO	3141	AXE	12/03/2003	24 mo
Pre-Amplifier	Amplifier Research	LN1000A	APS	03/01/2005	13 mo
Antenna, Horn	EMCO	3115	AHC	09/07/2004	12 mo
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APJ	05/05/2005	3 mo
Pre-Amplifier	Miteq	JS4-26004000-40-8P	APV	02/21/2005	13 mo
Pre-Amplifier	Miteq	JS4-26004000-50-5A	AON	02/21/2005	13 mo
Antenna, Horn	EMCO	3160-10	AHI	NCR	NA
Antenna, Horn	EMCO	3160-09	AHG	NCR	NA
Pre-Amplifier	Miteq	JSD4-18002600-26-8P	APU	02/15/2005	13 mo
Pre-Amplifier	Miteq	AMF-4D-005180-24-10P	APC	02/17/2005	13 mo
Antenna, Horn	EMCO	3160-08	AHK	NCR	NA
5.8 GHz Notch Filter	Micro-Tronics	BRC50705	HFQ	03/09/2005	13 mo

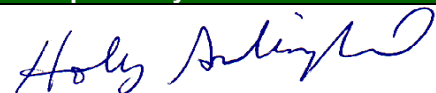
Test Description


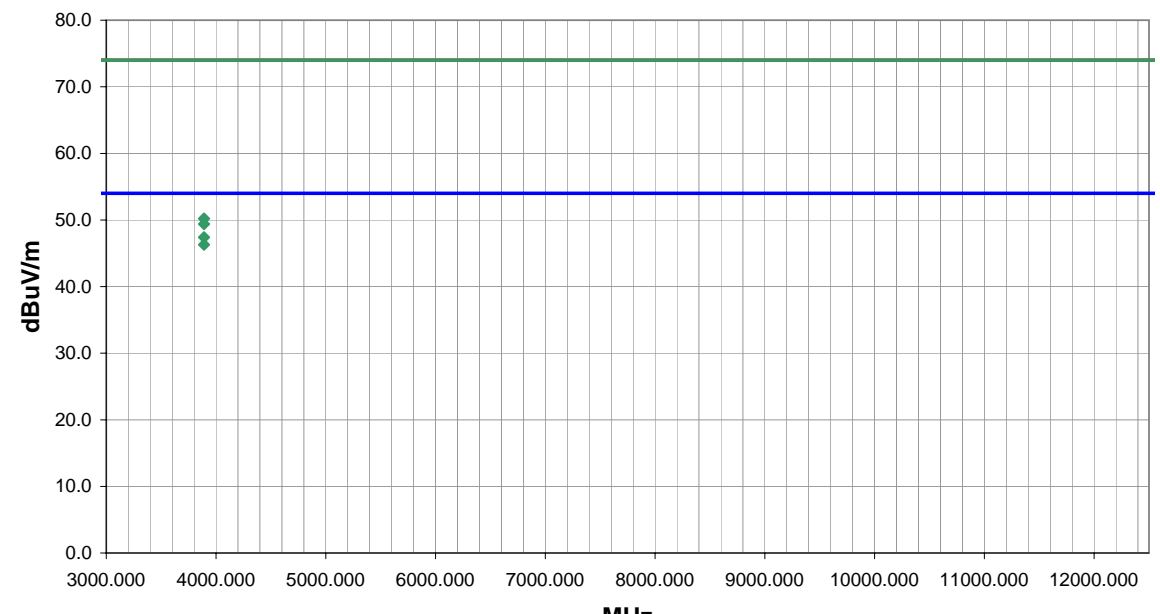
Requirement: The field strength of any spurious emissions or modulation products that fall in a restricted band, as defined in 47 CFR 15.205, is measured. The peak level must comply with the limits specified in 47 CFR 15.35(b). The average level (taken with a 10Hz VBW) must comply with the limits specified in 15.209.


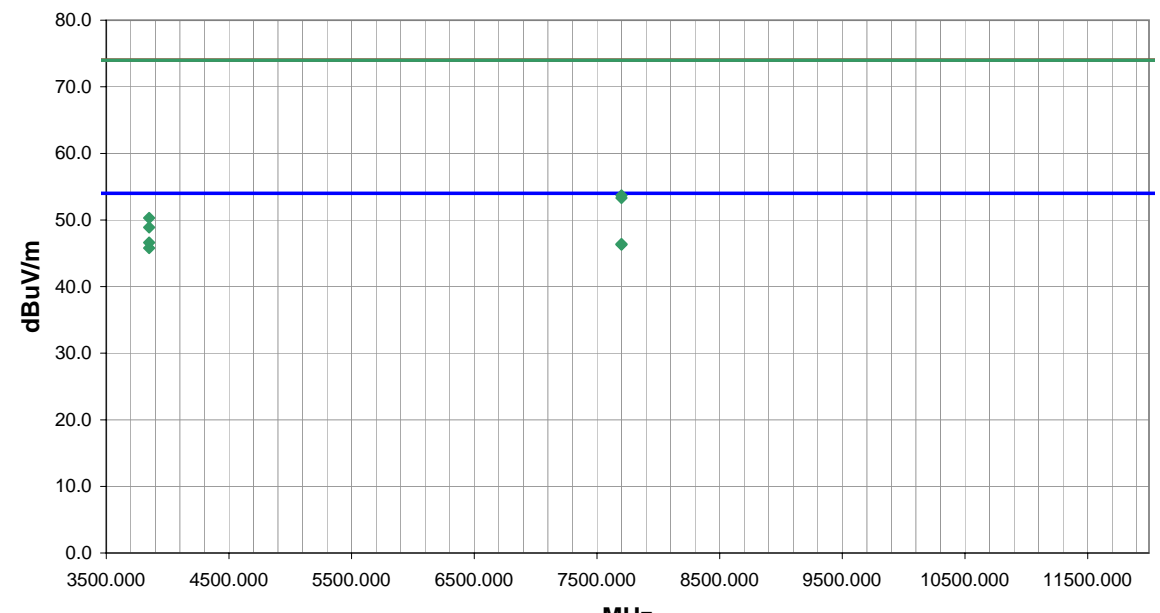
Configuration: The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis, and adjusting the measurement antenna height and polarization (per ANSI C63.4:2003). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.


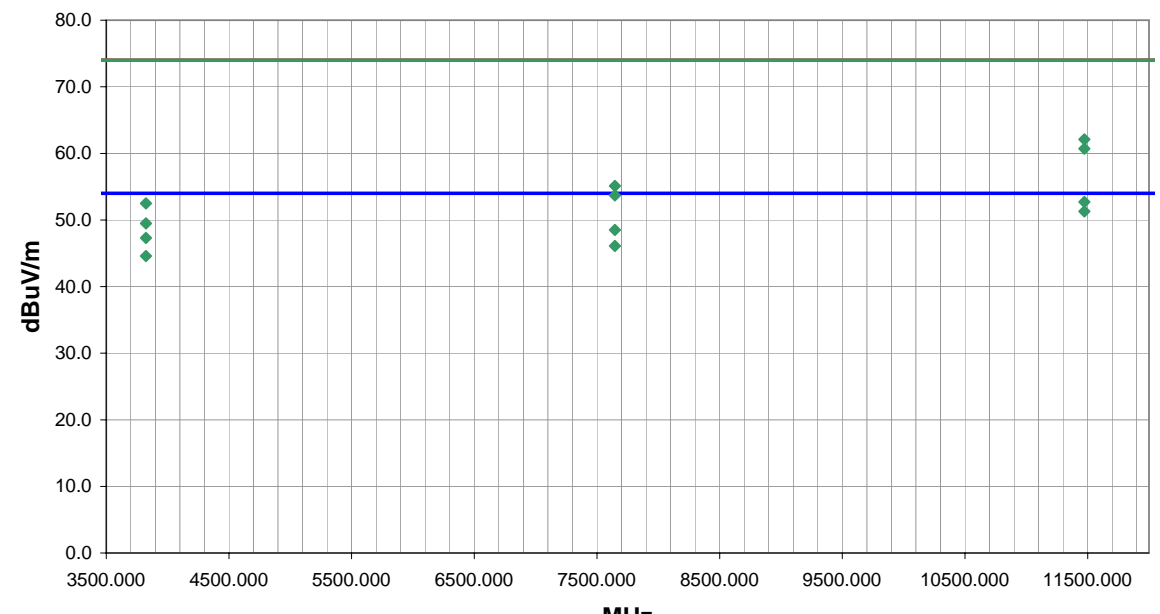
Bandwidths Used for Measurements			
Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 – 0.15	1.0	0.2	0.2
0.15 – 30.0	10.0	9.0	9.0
30.0 – 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0
Measurements were made using the bandwidths and detectors specified. No video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


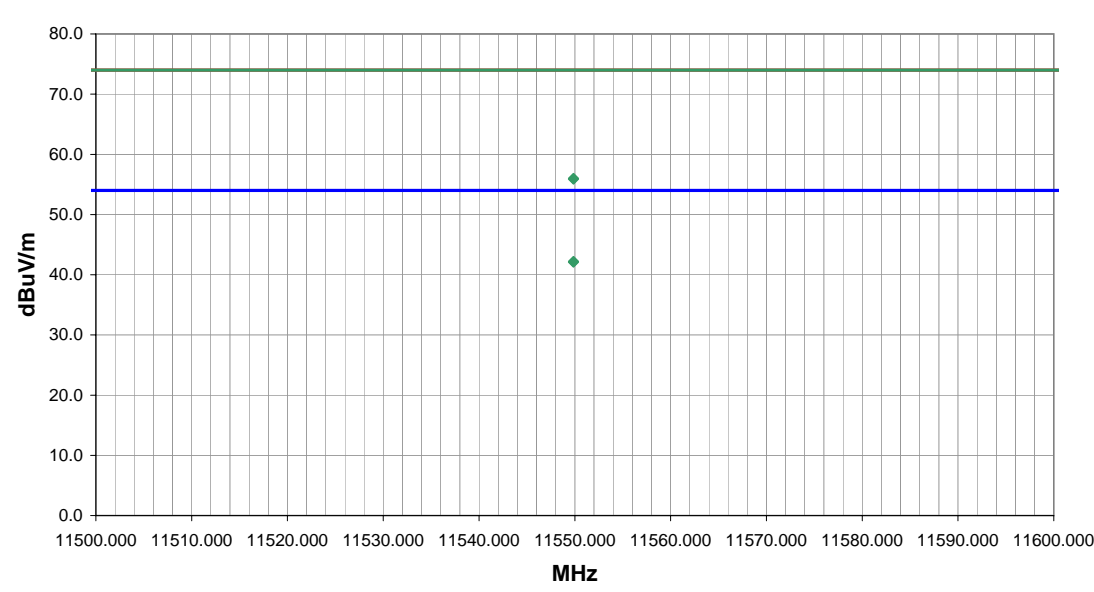
Completed by:

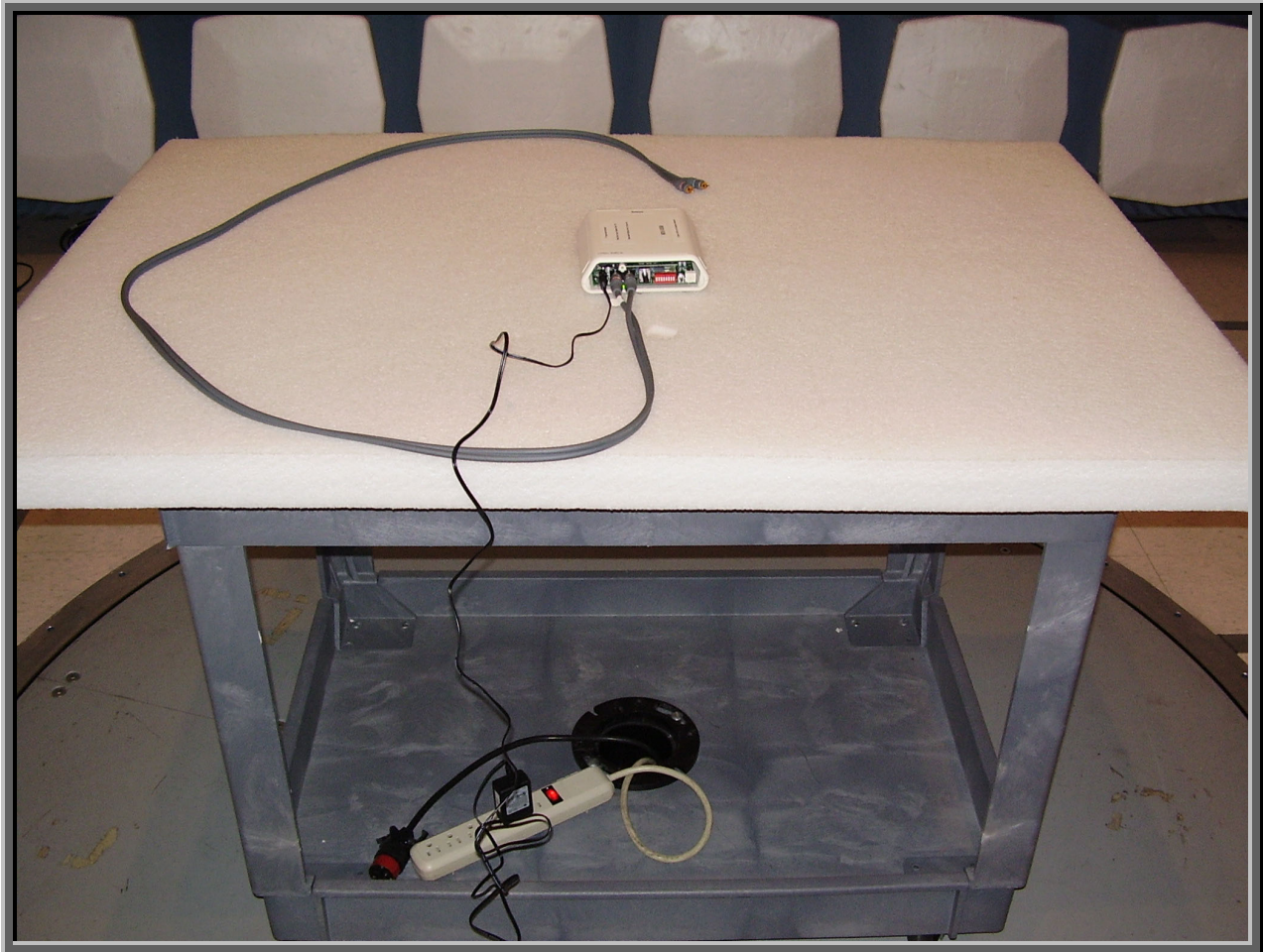


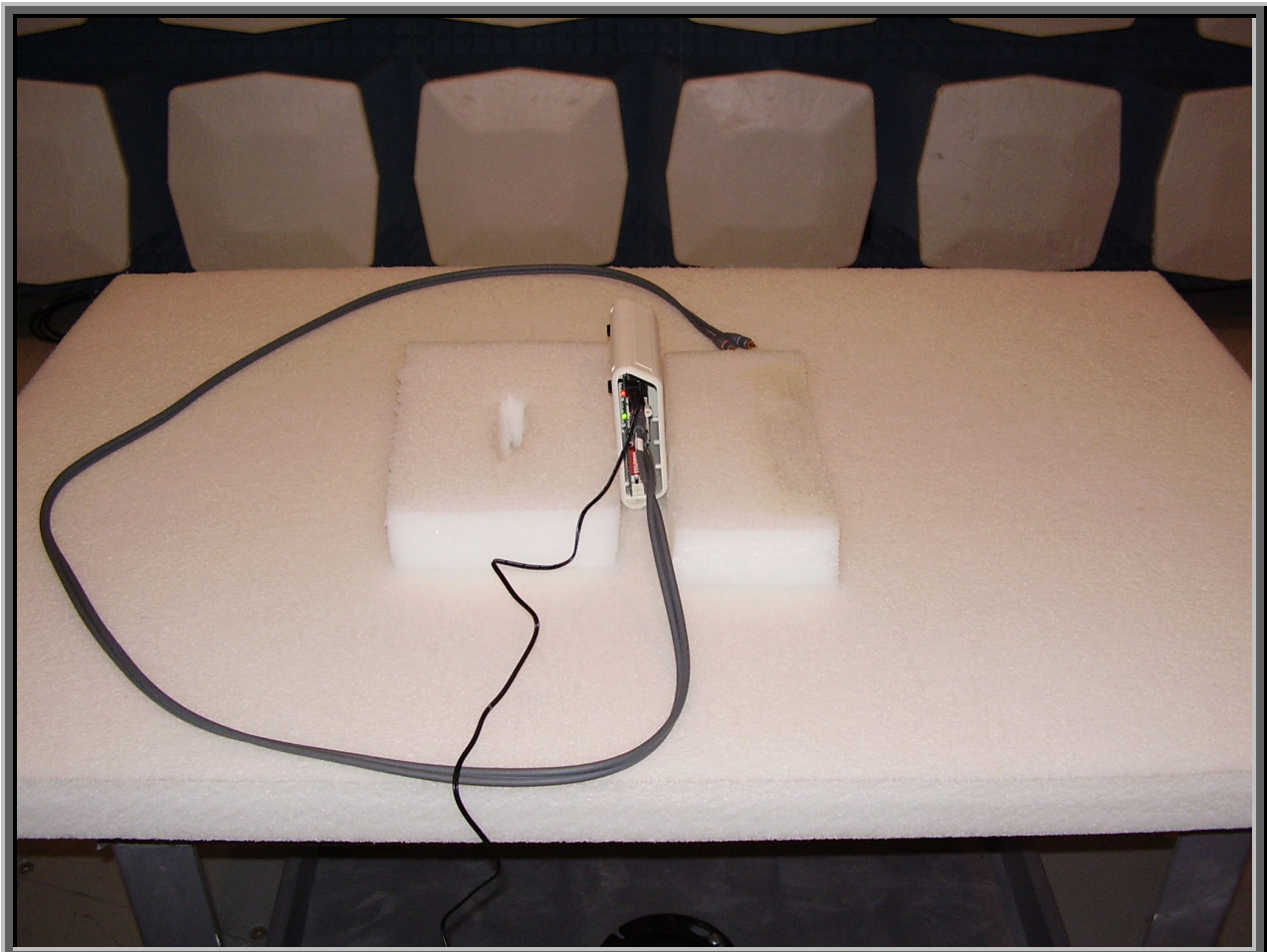
NORTHWEST EMC										ACQ 2005.6.24 EMI 2005.5.05			
RADIATED EMISSIONS DATA SHEET													
EUT: 2600T					Work Order: MUSI0002								
Serial Number:					Date: 06/26/05								
Customer: Music Sciences					Temperature: 25								
Attendees: None					Humidity: 42%								
Cust. Ref. No.:					Barometric Pressure: 29.86								
Tested by: Holly Ashkannejhad					Power: 120VAC, 60Hz					Job Site: EV01			
TEST SPECIFICATIONS													
Specification: FCC 15.247(d) Spurious Radiated Emissions:2005-04					Method: ANSI C63.4:2003								
SAMPLE CALCULATIONS													
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation													
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator													
COMMENTS													
5.725-5.850GHz band.													
EUT OPERATING MODES													
Transmitting High Channel													
DEVIATIONS FROM TEST STANDARD													
No deviations.													
RESULTS										Run #			
Pass										1			
Other													
										 Tested By:			
													
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)	
3889.953	43.9	3.5	331.0	1.2	3.0	0.0	V-Horn	AV	0.0	47.4	54.0	-6.6	
3889.953	42.8	3.5	74.0	1.8	3.0	0.0	H-Horn	AV	0.0	46.3	54.0	-7.7	
3889.953	46.7	3.5	331.0	1.2	3.0	0.0	V-Horn	PK	0.0	50.2	74.0	-23.8	
3889.953	45.9	3.5	74.0	1.8	3.0	0.0	H-Horn	PK	0.0	49.4	74.0	-24.6	

NORTHWEST		ACQ 2005.6.24 EMI 2005.5.05										
EMC		RADIATED EMISSIONS DATA SHEET										
EUT: 2600T		Work Order: MUSI0002										
Serial Number:		Date: 06/26/05										
Customer: Music Sciences		Temperature: 25										
Attendees: None		Humidity: 42%										
Cust. Ref. No.:		Barometric Pressure: 29.86										
Tested by: Holly Ashkannejhad		Power: 120VAC, 60Hz	Job Site: EV01									
TEST SPECIFICATIONS												
Specification: FCC 15.247(d) Spurious Radiated Emissions:2005-04		Method: ANSI C63.4:2003										
SAMPLE CALCULATIONS												
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation												
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator												
COMMENTS												
5.725-5.850GHz band.												
EUT OPERATING MODES												
Transmitting Mid Channel												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
RESULTS			Run #									
Pass			2									
Other												
		 Tested By:										
												
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)
3849.958	43.4	3.2	339.0	1.2	3.0	0.0	V-Horn	AV	0.0	46.6	54.0	-7.4
7699.856	34.2	12.2	246.0	1.8	3.0	0.0	V-Horn	AV	0.0	46.4	54.0	-7.6
7699.856	34.1	12.2	3.0	1.3	3.0	0.0	H-Horn	AV	0.0	46.3	54.0	-7.7
3849.958	42.6	3.2	164.0	1.8	3.0	0.0	H-Horn	AV	0.0	45.8	54.0	-8.2
7699.856	41.5	12.2	246.0	1.8	3.0	0.0	V-Horn	PK	0.0	53.7	74.0	-20.3
7699.856	41.1	12.2	3.0	1.3	3.0	0.0	H-Horn	PK	0.0	53.3	74.0	-20.7
3849.958	47.1	3.2	339.0	1.2	3.0	0.0	V-Horn	PK	0.0	50.3	74.0	-23.7
3849.958	45.7	3.2	164.0	1.8	3.0	0.0	H-Horn	PK	0.0	48.9	74.0	-25.1

NORTHWEST EMC		RADIATED EMISSIONS DATA SHEET		ACQ 2005.6.24 EMI 2005.5.05								
EUT: 2600T			Work Order: MUSI0002									
Serial Number:			Date: 06/26/05									
Customer: Music Sciences			Temperature: 25									
Attendees: None			Humidity: 42%									
Cust. Ref. No.:			Barometric Pressure: 29.86									
Tested by: Holly Ashkannejhad		Power: 120VAC, 60Hz		Job Site: EV01								
TEST SPECIFICATIONS												
Specification: FCC 15.247(d) Spurious Radiated Emissions:2005-04			Method: ANSI C63.4:2003									
SAMPLE CALCULATIONS												
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation												
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator												
COMMENTS												
5.725-5.850GHz band.												
EUT OPERATING MODES												
Transmitting Low Channel												
DEVIATIONS FROM TEST STANDARD												
No deviations.												
RESULTS					Run #							
Pass					3							
Other												
					 Tested By:							
												
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)
11472.880	34.8	17.9	241.0	1.5	3.0	0.0	V-Horn	AV	0.0	52.7	54.0	-1.3
11472.880	33.4	17.9	197.0	1.9	3.0	0.0	H-Horn	AV	0.0	51.3	54.0	-2.7
7646.571	36.3	12.2	196.0	1.3	3.0	0.0	H-Horn	AV	0.0	48.5	54.0	-5.5
3823.281	44.1	3.2	180.0	1.3	3.0	0.0	H-Horn	AV	0.0	47.3	54.0	-6.7
7646.571	33.9	12.2	259.0	1.9	3.0	0.0	V-Horn	AV	0.0	46.1	54.0	-7.9
3823.281	41.4	3.2	168.0	1.4	3.0	0.0	V-Horn	AV	0.0	44.6	54.0	-9.4
11472.880	44.2	17.9	241.0	1.5	3.0	0.0	V-Horn	PK	0.0	62.1	74.0	-11.9
11472.880	42.8	17.9	197.0	1.9	3.0	0.0	H-Horn	PK	0.0	60.7	74.0	-13.3
7646.571	42.9	12.2	196.0	1.3	3.0	0.0	H-Horn	PK	0.0	55.1	74.0	-18.9
7646.571	41.5	12.2	259.0	1.9	3.0	0.0	V-Horn	PK	0.0	53.7	74.0	-20.3
3823.281	49.3	3.2	180.0	1.3	3.0	0.0	H-Horn	PK	0.0	52.5	74.0	-21.5
3823.281	46.3	3.2	168.0	1.4	3.0	0.0	V-Horn	PK	0.0	49.5	74.0	-24.5

NORTHWEST EMC										RADIATED EMISSIONS DATA SHEET										ACQ 2005.6.24 EMI 2005.5.05	
EUT: 2600T										Work Order: MUSI0002											
Serial Number:										Date: 07/08/05											
Customer: Music Sciences										Temperature: 23											
Attendees: None										Humidity: 48%											
Cust. Ref. No.:										Barometric Pressure: 29.94											
Tested by: Holly Ashkannejhad										Power: 120VAC, 60Hz										Job Site: EV01	
TEST SPECIFICATIONS																					
Specification: FCC 15.247(d) Spurious Radiated Emissions:2005-04										Method: ANSI C63.4:2003											
SAMPLE CALCULATIONS																					
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation																					
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator																					
COMMENTS																					
5.725-5.850GHz band.																					
EUT OPERATING MODES																					
Transmitting Mid Channel																					
DEVIATIONS FROM TEST STANDARD																					
No deviations.																					
RESULTS										Run #											
Pass										7											
Other																					
										 Tested By:											
																					
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)	Comments								
11549.860	24.5	17.7	64.0	3.1	3.0	0.0	H-Horn	AV	0.0	42.2	54.0	-11.8	EUT Vertical								
11549.860	24.4	17.7	241.0	1.2	3.0	0.0	V-Horn	AV	0.0	42.1	54.0	-11.9	EUT on side								
11549.860	38.3	17.7	241.0	1.2	3.0	0.0	V-Horn	PK	0.0	56.0	74.0	-18.0	EUT on side								
11549.860	38.2	17.7	64.0	3.1	3.0	0.0	H-Horn	PK	0.0	55.9	74.0	-18.1	EUT Vertical								





Justification

The individuals and/or the organization requesting the test provided the modes, configurations and settings available to evaluate. While scanning the radiated emissions, all of the EUT parameters listed below were investigated. This includes, but may not be limited to, antennas, tuned transmit frequency ranges, operating modes, and data rates.

Channels in Specified Band Investigated:

High
Mid
Low

Operating Modes Investigated:

Typical

Data Rates Investigated:

Maximum

Output Power Setting(s) Investigated:

Maximum

Power Input Settings Investigated:

120 VAC, 60 Hz.

Firmware Applied During Test

Exercise firmware	GPE110_Tx	Version	1.0
Description			
The EUT was run with standard operating firmware.			

EUT and Peripherals

Description	Manufacturer	Model/Part Number	Serial Number
EUT	Music Sciences	2600T	Unknown
AC Adapter	CUI Inc.	EPAS-101W-12	N/A

Cables

Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
Audio (x2)	Yes	1.8	No	EUT	Unterminated
DC Leads	No	1.3	No	EUT	AC Adapter

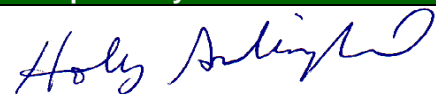
Measurement Equipment					
Description	Manufacturer	Model	Identifier	Last Cal	Interval
LISN	Solar	9252-50-R-24-BNC	LIN	12/29/2004	13 mo
High Pass Filter	TTE	H97-100k-50-720B	HFC	12/29/2004	13 mo
Attenuator	Tektronix	011-0059-02	ATH	12/29/2004	13 mo
Quasi-Peak Adapter	Hewlett-Packard	85650A	AQF	12/02/2004	13 mo
Spectrum Analyzer	Hewlett-Packard	8566B	AAL	12/02/2004	13 mo
Spectrum Analyzer Display	Hewlett Packard	85662A	AALD	12/02/2004	13 mo


Test Description

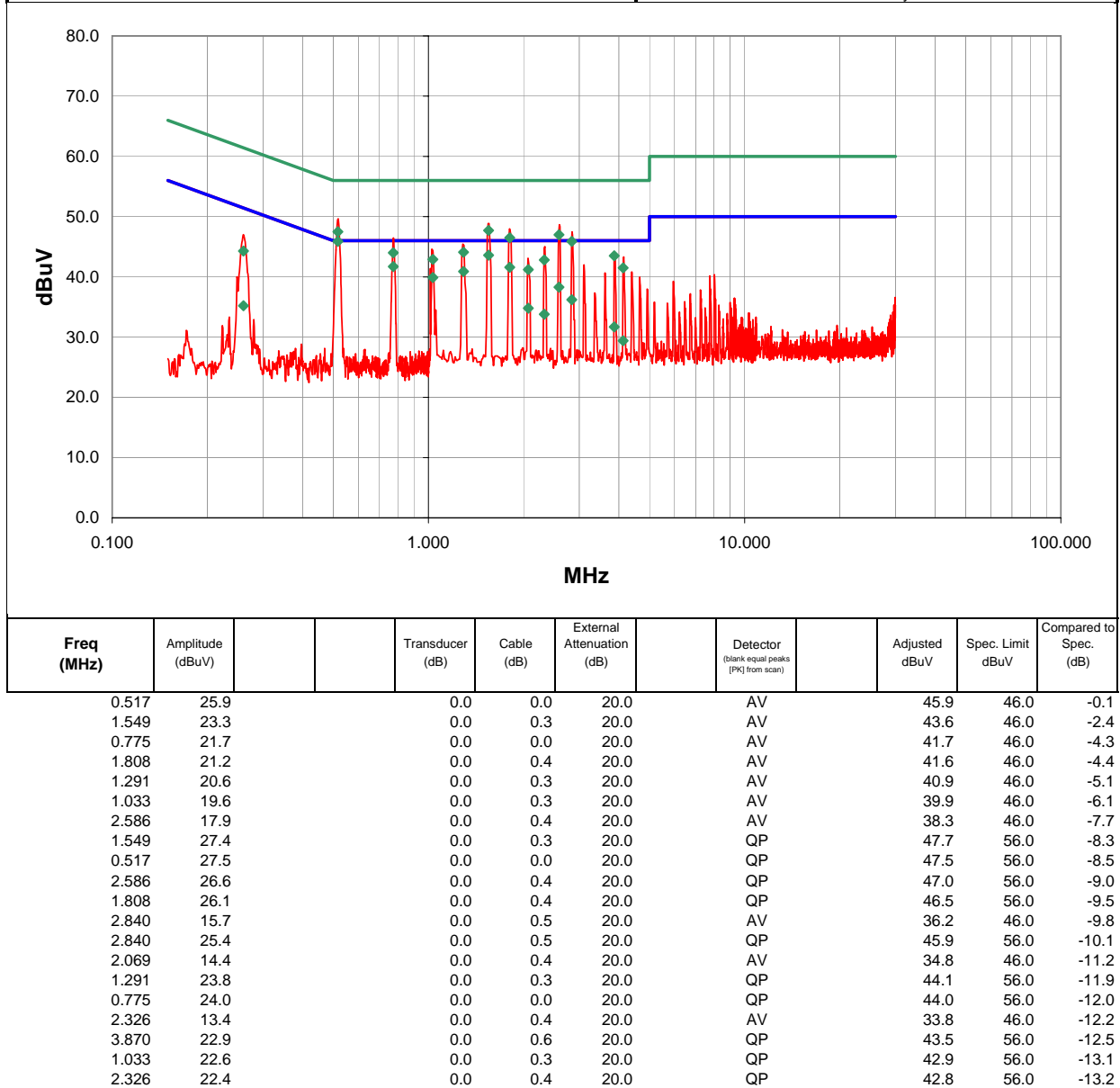
Requirement: Per 47 15.207(c), in addition to devices which are powered directly from the AC power line, conducted emissions measurements shall also be made on battery operated devices that can transmit while charging, as well as on devices that are powered from AC adaptors, or devices that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines. All of these devices shall be tested to demonstrate compliance with the conducted limits of 15.207.

Configuration: The EUT will be powered either directly or indirectly from the AC power line. Therefore, conducted emissions measurements were made on the AC input of the EUT, or on the AC input of the device used to power the EUT. The AC power line conducted emissions were measured with the EUT operating at the lowest, the highest, and a middle channel in the operational band. The EUT was transmitting at its maximum data rate. For each mode, the spectrum was scanned from 150 kHz to 30 MHz. The test setup and procedures were in accordance with ANSI C63.4-2003.

Completed by:



NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET		ACQ 2005.6.24 EMI 2005.5.05	
EUT:	2600T			Work Order:	MUSI0002
Serial Number:				Date:	07/18/05
Customer:	Music Sciences			Temperature:	25
Attendees:	None			Humidity:	43%
Cust. Ref. No.:				Barometric Pressure	29.83
Tested by:	Holly Ashkannejhad	Power:	120VAC, 60Hz	Job Site:	EV01
TEST SPECIFICATIONS					
Specification:	FCC 15.207 AC Powerline Conducted Emissions:2005-04		Method:	ANSI C63.4:2003	
SAMPLE CALCULATIONS					
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation					
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator					
COMMENTS					
EUT OPERATING MODES					
Transmitting Low Channel					
DEVIATIONS FROM TEST STANDARD					
No deviations.					
RESULTS				Line	Run #
Pass				L1	1
Other				 Tested By:	




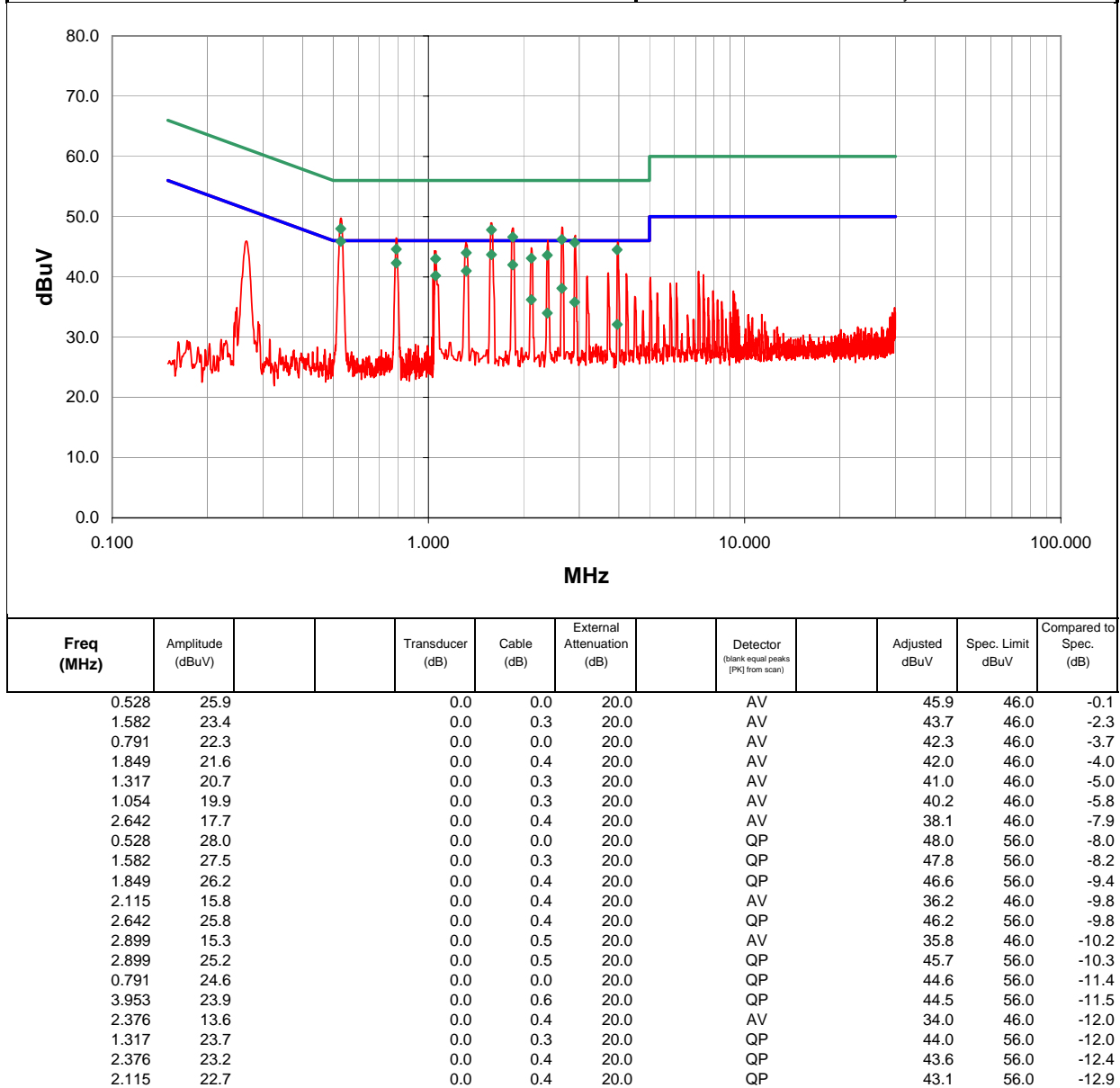
Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)		Detector <small>(blank equal peaks [PK] from scan)</small>		Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
3.870	11.1			0.0	0.6	20.0		AV		31.7	46.0	-14.3
4.130	20.9			0.0	0.6	20.0		QP		41.5	56.0	-14.5
2.069	20.8			0.0	0.4	20.0		QP		41.2	56.0	-14.8
0.260	15.2			0.0	0.0	20.0		AV		35.2	51.4	-16.2
4.130	8.8			0.0	0.6	20.0		AV		29.4	46.0	-16.6
0.260	24.3			0.0	0.0	20.0		QP		44.3	61.4	-17.1

Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)		Detector <small>(blank equal peaks [PK] from scan)</small>		Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
1.292	23.0			0.0	0.3	20.0		QP		43.3	56.0	-12.7
3.879	11.7			0.0	0.6	20.0		AV		32.3	46.0	-13.7
1.034	21.7			0.0	0.3	20.0		QP		42.0	56.0	-14.0
2.072	21.5			0.0	0.4	20.0		QP		41.9	56.0	-14.1
4.138	20.5			0.0	0.6	20.0		QP		41.1	56.0	-14.9
4.138	8.8			0.0	0.6	20.0		AV		29.4	46.0	-16.6


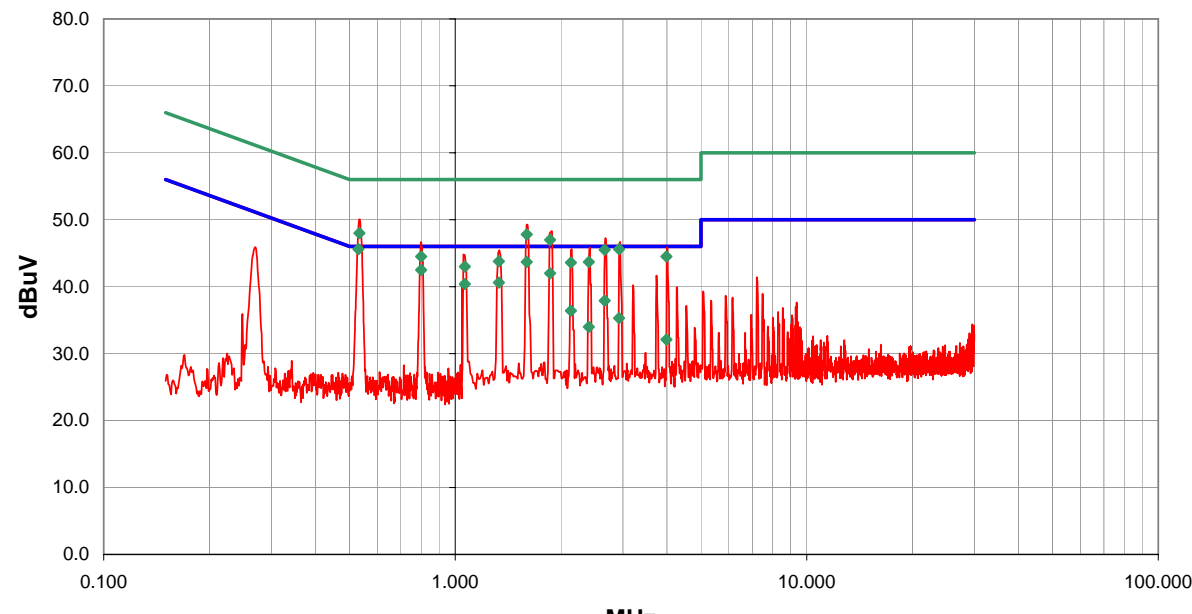
NORTHWEST		ACQ 2005.6.24						
EMI		EMI 2005.5.05						
EUT: 2600T		Work Order: MUSI0002						
Serial Number:		Date: 07/18/05						
Customer: Music Sciences		Temperature: 25						
Attendees: None		Humidity: 43%						
Cust. Ref. No.:		Barometric Pressure: 29.83						
Tested by: Holly Ashkannejhad		Power: 120VAC, 60Hz						
		Job Site: EV01						
TEST SPECIFICATIONS								
Specification: FCC 15.207 AC Powerline Conducted Emissions:2005-04		Method: ANSI C63.4:2003						
SAMPLE CALCULATIONS								
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation								
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator								
COMMENTS								
EUT OPERATING MODES								
Transmitting Mid Channel								
DEVIATIONS FROM TEST STANDARD								
No deviations.								
RESULTS								
Pass		Line	Run #					
		N	3					
Other								
		<div>Holly Ashkannejhad</div> <div>Tested By:</div>						
<div><div>80.0</div><div>70.0</div><div>60.0</div><div>50.0</div><div>40.0</div><div>30.0</div><div>20.0</div><div>10.0</div><div>0.0</div><div>0.100</div><div>1.000</div><div>10.000</div><div>100.000</div><div>MHz</div><div>dBuV</div></div>								
Freq (MHz)	Amplitude (dBuV)	Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.528	25.9	0.0	0.0	20.0	AV	45.9	46.0	-0.1
0.265	28.8	0.0	0.0	20.0	AV	48.8	51.3	-2.5
1.581	22.3	0.0	0.3	20.0	AV	42.6	46.0	-3.4
1.844	21.2	0.0	0.4	20.0	AV	41.6	46.0	-4.4
0.791	21.1	0.0	0.0	20.0	AV	41.1	46.0	-4.9
1.317	18.8	0.0	0.3	20.0	AV	39.1	46.0	-6.9
1.054	18.2	0.0	0.3	20.0	AV	38.5	46.0	-7.5
2.641	17.6	0.0	0.4	20.0	AV	38.0	46.0	-8.0
0.528	27.8	0.0	0.0	20.0	QP	47.8	56.0	-8.2
2.641	27.2	0.0	0.4	20.0	QP	47.6	56.0	-8.4
1.581	26.8	0.0	0.3	20.0	QP	47.1	56.0	-8.9
1.844	26.4	0.0	0.4	20.0	QP	46.8	56.0	-9.2
2.112	16.3	0.0	0.4	20.0	AV	36.7	46.0	-9.3
0.265	31.3	0.0	0.0	20.0	QP	51.3	61.3	-10.0
2.898	14.9	0.0	0.5	20.0	AV	35.4	46.0	-10.6
2.898	24.7	0.0	0.5	20.0	QP	45.2	56.0	-10.8
3.947	23.9	0.0	0.6	20.0	QP	44.5	56.0	-11.5
2.375	23.7	0.0	0.4	20.0	QP	44.1	56.0	-11.9
2.375	13.5	0.0	0.4	20.0	AV	33.9	46.0	-12.1
0.791	23.5	0.0	0.0	20.0	QP	43.5	56.0	-12.5

Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)		Detector <small>(blank equal peaks [PK] from scan)</small>		Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
2.112	22.7			0.0	0.4	20.0		QP		43.1	56.0	-12.9
1.317	22.8			0.0	0.3	20.0		QP		43.1	56.0	-12.9
3.947	11.5			0.0	0.6	20.0		AV		32.1	46.0	-13.9
1.054	21.8			0.0	0.3	20.0		QP		42.1	56.0	-13.9


NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET		ACQ 2005.6.24 EMI 2005.5.05	
EUT:	2600T	Work Order:	MUSI0002		
Serial Number:		Date:	07/18/05		
Customer:	Music Sciences	Temperature:	25		
Attendees:	None	Humidity:	43%		
Cust. Ref. No.:		Barometric Pressure	29.83		
Tested by:	Holly Ashkannejhad	Power:	120VAC, 60Hz	Job Site:	EV01
TEST SPECIFICATIONS					
Specification:	FCC 15.207 AC Powerline Conducted Emissions:2005-04	Method:	ANSI C63.4:2003		
SAMPLE CALCULATIONS					
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation					
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator					
COMMENTS					
EUT OPERATING MODES					
Transmitting Mid Channel					
DEVIATIONS FROM TEST STANDARD					
No deviations.					
RESULTS					
Pass		Line	L1	Run #	4
Other					
			 Tested By:		

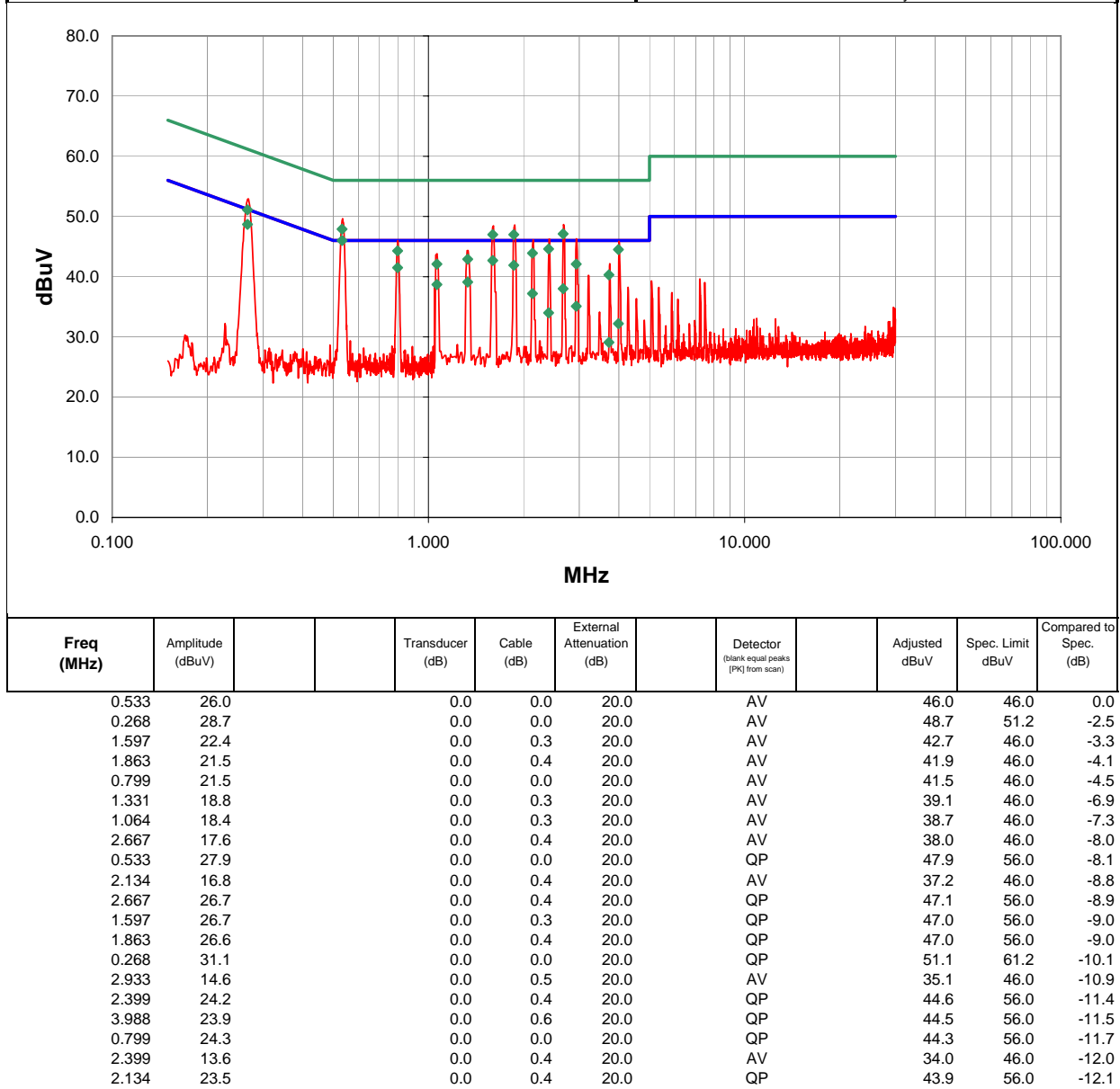


Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)		Detector <small>(blank equal peaks [PK] from scan)</small>		Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
1.054	22.7			0.0	0.3	20.0		QP		43.0	56.0	-13.0
3.955	11.5			0.0	0.6	20.0		AV		32.1	46.0	-13.9

NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET		ACQ 2005.6.24 EMI 2005.5.05					
EUT: 2600T			Work Order: MUSI0002						
Serial Number:			Date: 07/18/05						
Customer: Music Sciences			Temperature: 25						
Attendees: None			Humidity: 43%						
Cust. Ref. No.:			Barometric Pressure: 29.83						
Tested by: Holly Ashkannejhad		Power: 120VAC, 60Hz		Job Site: EV01					
TEST SPECIFICATIONS									
Specification: FCC 15.207 AC Powerline Conducted Emissions:2005-04			Method: ANSI C63.4:2003						
SAMPLE CALCULATIONS									
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation									
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator									
COMMENTS									
EUT OPERATING MODES									
Transmitting High Channel									
DEVIATIONS FROM TEST STANDARD									
No deviations.									
RESULTS									
Pass			Line	Run #					
			L1	5					
Other			 Tested By:						
									
Freq (MHz)	Amplitude (dBuV)		Transducer (dB)	Cable (dB)	External Attenuation (dB)	Detector (blank equal peaks [PK] from scan)	Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
0.531	25.6		0.0	0.0	20.0	AV	45.6	46.0	-0.4
1.597	23.4		0.0	0.3	20.0	AV	43.7	46.0	-2.3
0.800	22.5		0.0	0.0	20.0	AV	42.5	46.0	-3.5
1.863	21.6		0.0	0.4	20.0	AV	42.0	46.0	-4.0
1.331	20.3		0.0	0.3	20.0	AV	40.6	46.0	-5.4
1.065	20.1		0.0	0.3	20.0	AV	40.4	46.0	-5.6
0.534	28.0		0.0	0.0	20.0	QP	48.0	56.0	-8.0
2.660	17.5		0.0	0.4	20.0	AV	37.9	46.0	-8.1
1.597	27.5		0.0	0.3	20.0	QP	47.8	56.0	-8.2
1.863	26.6		0.0	0.4	20.0	QP	47.0	56.0	-9.0
2.134	16.0		0.0	0.4	20.0	AV	36.4	46.0	-9.6
2.926	25.1		0.0	0.5	20.0	QP	45.6	56.0	-10.4
2.660	25.1		0.0	0.4	20.0	QP	45.5	56.0	-10.5
2.926	14.8		0.0	0.5	20.0	AV	35.3	46.0	-10.7
0.800	24.5		0.0	0.0	20.0	QP	44.5	56.0	-11.5
3.989	23.9		0.0	0.6	20.0	QP	44.5	56.0	-11.5
2.399	13.6		0.0	0.4	20.0	AV	34.0	46.0	-12.0
1.331	23.5		0.0	0.3	20.0	QP	43.8	56.0	-12.2
2.399	23.3		0.0	0.4	20.0	QP	43.7	56.0	-12.3
2.134	23.2		0.0	0.4	20.0	QP	43.6	56.0	-12.4

Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)		Detector <small>(blank equal peaks [PK] from scan)</small>		Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
1.065	22.7			0.0	0.3	20.0		QP		43.0	56.0	-13.0
3.989	11.5			0.0	0.6	20.0		AV		32.1	46.0	-13.9

NORTHWEST EMC		CONDUCTED EMISSIONS DATA SHEET		ACQ 2005.6.24 EMI 2005.5.05
EUT: 2600T		Work Order: MUSI0002		
Serial Number:		Date: 07/18/05		
Customer: Music Sciences		Temperature: 25		
Attendees: None		Humidity: 43%		
Cust. Ref. No.:		Barometric Pressure: 29.83		
Tested by: Holly Ashkannejhad		Power: 120VAC, 60Hz		Job Site: EV01
TEST SPECIFICATIONS				
Specification: FCC 15.207 AC Powerline Conducted Emissions:2005-04		Method: ANSI C63.4:2003		
SAMPLE CALCULATIONS				
Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation				
Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator				
COMMENTS				
EUT OPERATING MODES				
Transmitting High Channel				
DEVIATIONS FROM TEST STANDARD				
No deviations.				
RESULTS				
Pass		Line	Run #	
		N	6	
Other		 Tested By:		



Freq (MHz)	Amplitude (dBuV)			Transducer (dB)	Cable (dB)	External Attenuation (dB)		Detector <small>(blank equal peaks [PK] from scan)</small>		Adjusted dBuV	Spec. Limit dBuV	Compared to Spec. (dB)
1.331	22.6			0.0	0.3	20.0		QP		42.9	56.0	-13.1
3.988	11.6			0.0	0.6	20.0		AV		32.2	46.0	-13.8
1.064	21.8			0.0	0.3	20.0		QP		42.1	56.0	-13.9
2.933	21.6			0.0	0.5	20.0		QP		42.1	56.0	-13.9
3.721	19.8			0.0	0.5	20.0		QP		40.3	56.0	-15.7
3.721	8.6			0.0	0.5	20.0		AV		29.1	46.0	-16.9



