

FCC CFR47 PART 15 SUBPART C INDUSTRY CANADA RSS-210 ISSUE 7 CLASS II PERMISSIVE CHANGE

CERTIFICATION TEST REPORT

FOR

WIRELESS LAN MODULE

MODEL NUMBER: DWM-W024

FCC ID: EW4DWMW024 IC: 4250A-DWMW024

REPORT NUMBER: 09J12729-1

ISSUE DATE: AUGUST 3, 2009

Prepared for MITSUMI ELECTRIC CO., LTD. 2-11-2, TSURUMAKI TAMA, TOKYO 206-8567, JAPAN

Prepared by COMPLIANCE CERTIFICATION SERVICES 47173 BENICIA STREET FREMONT, CA 94538, U.S.A. TEL: (510) 771-1000 FAX: (510) 661-0888



NVLAP LAB CODE 200065-0

Revision History

Rev.	lssue Date	Revisions	Revised By
	08/03/09	Initial Issue	T. Chan

Page 2 of 84

TABLE OF CONTENTS

1.	ATTESTATION OF TEST RESULTS	4
2.	TEST METHODOLOGY	5
3.	FACILITIES AND ACCREDITATION	5
4.	CALIBRATION AND UNCERTAINTY	5
4	4.1. MEASURING INSTRUMENT CALIBRATION	5
4	1.2. SAMPLE CALCULATION	5
4	4.3. MEASUREMENT UNCERTAINTY	5
5.	EQUIPMENT UNDER TEST	6
5	5.1. DESCRIPTION OF EUT	6
5	5.2. DESCRIPTION OF CLASS II PERMISSIVE CHANGE	6
5	5.3. DESCRIPTION OF AVAILABLE ANTENNAS	6
5	5.4. SOFTWARE AND FIRMWARE	6
5	5.5. WORST-CASE CONFIGURATION AND MODE	6
5	5.6. DESCRIPTION OF TEST SETUP	7
6.	TEST AND MEASUREMENT EQUIPMENT 1	0
7.	RADIATED TEST RESULTS1	1
	RADIATED TEST RESULTS 1 7.1. LIMITS AND PROCEDURE	
7	7.1. LIMITS AND PROCEDURE 7.2. TRANSMITTER ABOVE 1 GHz 7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND	11 12
7	7.1. LIMITS AND PROCEDURE 7.2. TRANSMITTER ABOVE 1 GHz 7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITH AC ADAPTER	11 12 12
7	7.1. LIMITS AND PROCEDURE 7.2. 7.2. TRANSMITTER ABOVE 1 GHz 7.2.1. 7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.2. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND	11 12 12 21
7	7.1. LIMITS AND PROCEDURE 7.2. TRANSMITTER ABOVE 1 GHz 7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.2. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 2 7.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 3 7.2.4. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND	111 12 12 21 30
7	7.1. LIMITS AND PROCEDURE 7.2. 7.2. TRANSMITTER ABOVE 1 GHz 7.2.1. 7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.2. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 2 7.2.4. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND	11 12 12 21 30 39
7	7.1. LIMITS AND PROCEDURE 7.2. 7.2. TRANSMITTER ABOVE 1 GHz 7.2.1. 7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.2. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 2 7.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 2 7.2.4. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.6. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND	111 12 12 21 30 39 48
7	7.1. LIMITS AND PROCEDURE 7.2. 7.2. TRANSMITTER ABOVE 1 GHz 7.2.1. 7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.2. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 2 7.2.4. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3	 11 12 14 1
7	7.1. LIMITS AND PROCEDURE 7.2. TRANSMITTER ABOVE 1 GHz 7.2. 7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND 1 WITH AC ADAPTER 1 7.2.2. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 1 7.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITH AC ADAPTER 2 7.2.4. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 3 7.2.6. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 4 7.2.6. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER 4 7.2.7. TX SPURIOUS EMISSION 30 TO 1000 MHz WITH TABUCHI AC ADAPTER 7.2.7. TX SPURIOUS EMISSION 30 TO 1000 MHz WITH TABUCHI AC	 11 12 14 1

Page 3 of 84

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	MITSUMI ELECTRIC CO., LTD. 2-11-2, TSURUMAKI TAMA, TOKYO 206-8567, JAPAN	
EUT DESCRIPTION:	WIRELESS LAN MODULE	
MODEL:	DWM-W024	
SERIAL NUMBER:	WJN000000789 / WJN000001175	
DATE TESTED:	JULY 24 TO 26, 2009	
	APPLICABLE STANDARDS	
ST	ANDARD	TEST RESULTS
CFR 47 P	art 15 Subpart C	Pass
INDUSTRY CANADA	A RSS-210 Issue 7 Annex 8	Pass
INDUSTRY CAN	IADA RSS-GEN Issue 2	Pass

Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For CCS By:

Tested By:

THU CHAN EMC MANAGER COMPLIANCE CERTIFICATION SERVICES

MENGISTU MEKURIA EMC ENGINEER COMPLIANCE CERTIFICATION SERVICES

Page 4 of 84

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 2, and RSS-210 Issue 7.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <u>http://www.ccsemc.com</u>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB) 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

Page 5 of 84

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a WIRELESS LAN MODULE (802.11 + 802.11b/g). The radio module is manufactured by Mitsumi Electric Co., Ltd.

5.2. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The major change filed under this application is adding a new host.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes one type of antenna, with a gain of 0.751 dBi for Foxconn antenna (Dipole).

5.4. SOFTWARE AND FIRMWARE

The EUT test utility software installed in the host computer during testing was Atheros Radio Test (ART) 6000, revision 1.5.1, BUILD MnM.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case data rate for each mode is determined to be as follows, based on preliminary tests of the chipset utilized in this radio.

All final tests in the 802.11 mode were made at 2 Mb/s. All final tests in the 802.11b mode were made at 1 Mb/s. All final tests in the 802.11g mode were made at 6 Mb/s.

For AC line conducted and radiated emissions below 1 GHz. To determine the worst-case, the EUT was investigated with two different AC/DC adapters, and the worst-case configuration is turned out to be a Tabuchi AC/DC adapter

Page 6 of 84

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST							
Description Manufacturer Model Serial Number FCC ID							
Notebool PC	HP	Compaq 6710b	CNU80800TB	DoC			
AC Adapter 2	HP	PA-1900-18H2	W97950ELLVI0VM	DoC			
EUT AC Adapter	Mitsumi	WAP-002 (USA)	M1	DoC			
EUT AC Adapter	Tabuchi	WAP-002 (USA)	T2	DoC			
USB Adapter Board	NA	NA	NA	NA			

I/O CABLES

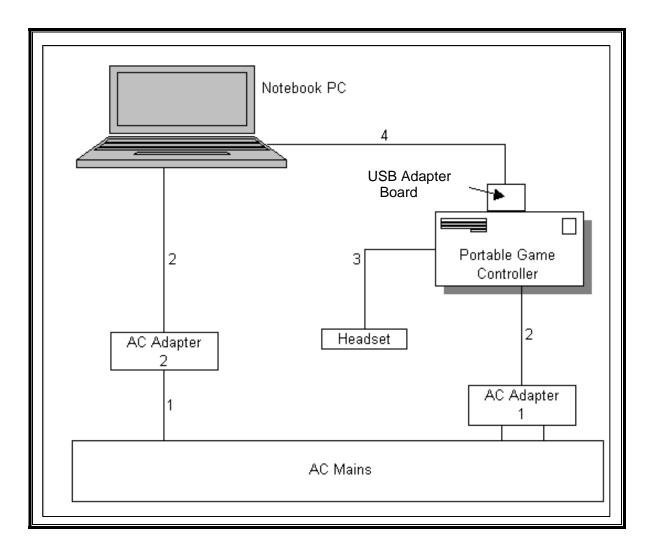
	I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks	
1	AC Input	1	US 115V	Un-Shielded	2m	N	
2	DC Input	2	DC	Un-Shielded	1m	N	
3	Audio	1	Earphone	Un-Shielded	1m	Ν	
4	USB	1	USB	Un-Shielded	0.5m	Y	

TEST SETUP

The EUT is a stand-alone unit, but connected to the laptop to the support laptop for the setup purpose only. Test software exercised the radio card.

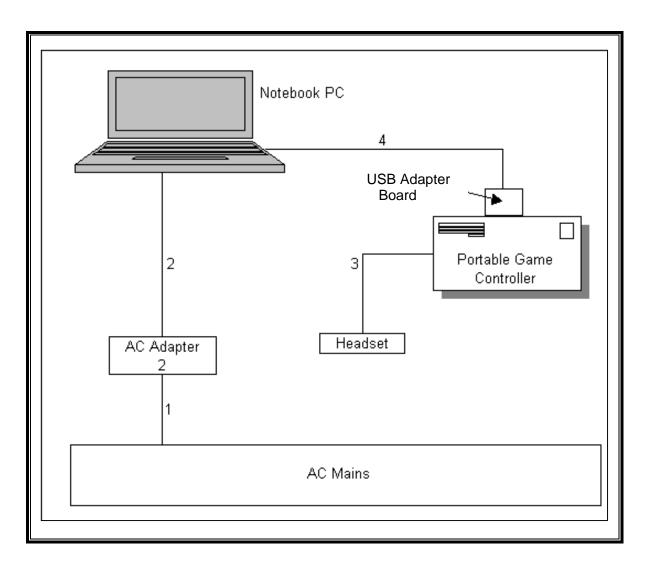
Page 7 of 84

SETUP DIAGRAM FOR TESTS WITH AC ADAPTER



Page 8 of 84

SETUP DIAGRAM FOR TESTS WITHOUT AC ADAPTER



Page 9 of 84

6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	Manufacturer	Model	Asset	Cal Due	
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01069	01/05/10	
Antenna, Bilog, 2 GHz	Sund Sciences	JB1	C01011	01/14/10	
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	12/16/09	
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	02/03/10	
Antenna, Bilog, 2 GHz	Sund Sciences	JB1	C01016	01/14/10	
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	12/16/09	
Antenna, Horn, 18 GHz	EVCO	3115	C00783	01/29/10	
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	02/04/10	
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	10/29/09	
LISN, 10 kHz~30 MHz	Solar	8012-50-R-24-BNC	N02481	10/29/09	
EM Test Receiver, 30 MHz	R&S	ESHS 20	N02396	08/06/09	

Page 10 of 84

7. RADIATED TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

Page 11 of 84

7.2. TRANSMITTER ABOVE 1 GHz

7.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITH AC ADAPTER

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

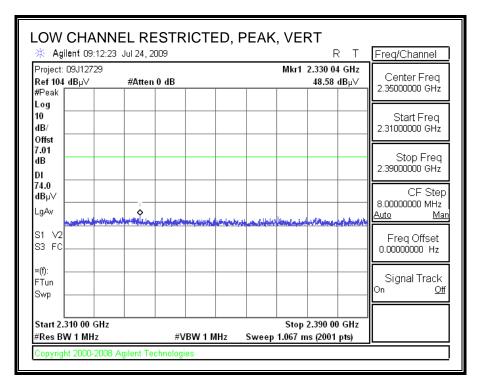
Agilent 09:18 Project: 09J12729			M1	R T 2.318 60 GHz	Freq/Channel
²roject: 09312729 Ref 104 dB µ∨ #Peak	#Atten 0 dB			2.318 60 GHZ 48.06 dBµ∨	Center Freq 2.3500000 GHz
-og 10 1B/					Start Freq 2.31000000 GHz
)ffst 1.01 IB					Stop Freq 2.39000000 GHz
/4.0 IBµ∨ .αAv					CF Step 8.00000000 MHz Auto Ma
51 V2 53 FC		nin da da antinin	and lease had been the second	in and a firmed the potential	Freq Offset 0.00000000 Hz
i(f): :Tun Swp					Signal Track
Start 2.310 00 GH Res BW 1 MHz	-	#VBW 1 MHz	Stop Sweep 1.067 I	2.390 00 GHz ns (2001 pts)	

Page 12 of 84

🔆 Agilent 09:20:		TRICTED,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	R T	Freq/Channel
Project: 09J12729 Ref 104 dB µ∨ #Peak	#Atten 0	dB	Mkr	1 2.327 36 GHz 36.31 dBµ∨	Center Freq 2.35000000 GHz
Log 10 dB/					Start Freq 2.31000000 GHz
Offst 7.01 dB DI					Stop Freq 2.39000000 GHz
54.0 dBµ∨ LqAv					CF Step 8.00000000 MHz
S1 V2 S3 FC	1				Auto Mar Freq Offset 0.00000000 Hz
×(f): FTun Swp					Signal Track
Start 2.310 00 GHz #Res BW 1 MHz	<u> </u>	#VBW 10 Hz		p 2.390 00 GHz 8 s (2001 pts)	

Page 13 of 84

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

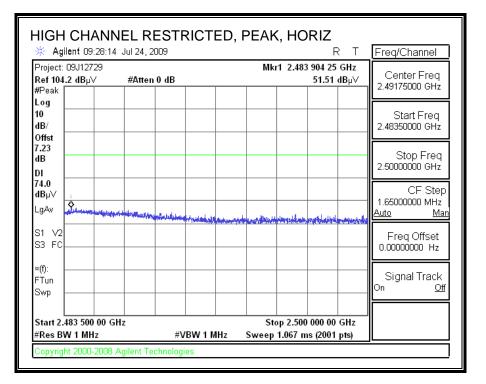


Page 14 of 84

🔆 Agilent 09:13:4			AVG, VEF	RT	Freq/Channel
Project: 09J12729 Ref 104 dB µ∀ #Peak	#Atten 0	dB	Mkr	I 2.327 08 GHz 36.04 dBµ∨	Center Freq 2.35000000 GHz
Log 10 dB/					Start Freq 2.31000000 GHz
Offst 7.01 dB					Stop Freq 2.39000000 GHz
DI					CF Step 8.0000000 MHz
LgAv S1 V2 S3 FC	1.				Auto Mar Freq Offset 0.00000000 Hz
×(f): FTun Swp					Signal Track
Start 2.310 00 GHz #Res BW 1 MHz		#VBW 10 Hz		p 2.390 00 GHz 8 s (2001 pts)	*

Page 15 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

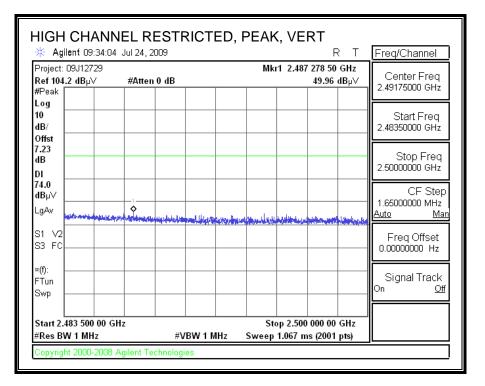


Page 16 of 84

* Agilent 09:28:50 Jul 24	RESTRICTED,	R T	Freq/Channel
Project: 09J12729 Ref 104.2 dB µ∨ #Att #Peak	ten 0 dB	Mkr1 2.484 201 25 GHz 42.57 dBµ∀	Center Freq 2.49175000 GHz
Log 10 dB/ Offst			Start Freq 2.48350000 GHz
7.23 dB DI			Stop Freq 2.50000000 GHz
54.0 dBμV LgAv			CF Step 1.6500000 MHz <u>Auto Mar</u>
S1 V2 S3 FC			Freq Offset 0.00000000 Hz
*(f):			Signal Track On <u>Off</u>
Start 2.483 500 00 GHz #Res BW 1 MHz	#VBW 10 Hz	Stop 2.500 000 00 GHz Sweep 1.287 s (2001 pts)	

Page 17 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Page 18 of 84

🔆 Agilent 09:34:	38 Jul 24, 2009	-	-	RT	Freq/Channel
Project: 09J12729 Ref 104.2 dB µ∨ #Peak □ □ □	#Atten 0 dB		Mkr1 2.	484 316 75 GHz 38.88 dBµ∨	Center Freq 2.49175000 GHz
Log 10 dB/ Offst					Start Freq 2.48350000 GHz
7.23 dB DI					Stop Freq 2.50000000 GHz
54.0 dBµ∨ LgAv					CF Step 1.65000000 MHz <u>Auto Mar</u>
S1 V2					Freq Offset 0.00000000 Hz
×(f): FTun Swp					Signal Track On <u>Off</u>
Start 2.483 500 00 #Res BW 1 MHz		BW 10 Hz		500 000 00 GHz 87 s (2001 pts)	

Page 19 of 84

HARMONICS AND SPURIOUS EMISSIONS

Compan Project : Date: Test En Configu Mode:	#: gineer:		NINTENDO 09J12729 7/26/2009 MENGISTU M EUT with AC TX, 802.11 M	Adapter											
Test Eq		<u>t:</u> 18GHz	Pre-a	nplifer	1-260	GHz	Pre-am	plifer	26-40GH	z	н	orn > 18	3GHz		Limit
T59; S	5/N: 324	5 @3m	▼ T145 /	Agilent 3	3008A0	05(🖵				-				-	FCC 15.209
	uency Cal	bles	12' o	able 2	28076	600	20' cal	ble 22	807500		HPF	R	eject Filte		<u>k Measurements</u> W=VBW=1MHz
3' ca	able 228	307700	• 12' ca	nble 228	07600	•	20' cab	le 228(•			▼ R	_001		<u>ge Measurements</u> 1MHz ; VBW=10Hz
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	1		n Pk Mar dB	Avg Mar dB	Notes (V/H)
Low Ch. (0.0	(8.8	31.4					v
1.824 1.824	3.0 3.0	40.1 38 <i>.</i> 5	27.7 25.9	32.8 32.8	5.8 5.8	-34.8 -34.8	0.0 0.0	0.0 0.0	43.8 42.2	31.4 29.6	74 74	54 54	-30.2 -31.8	-22.6 -24.4	ч Н
/lid Ch. (/	2442 MH	(x)													
.884	3.0	38.8	26.7	32.8	5.8	-34.9	۵٥	0.0	42.6	30.5	74	54	-31.4	-23.5	V
1.884	3.0	38.7	26.4	32.8	5.8	-34.9	0.0	0.0	42.5	30.2	74	54	-31.5	-23.8	H
Hi Ch. (24 1.944	72 MHz 3.0) 37.8	26.5	32.9	59	-34.9	0.0	0.0	41.7	30.4	74	54	-32.3	-23.6	v
1944 1944	3.0	37.8 38.8	26.2	32.9	59 59	-34.9 -34.9	0.0	0.0 0.0	41.7 42.7	30.4 30.1	74 74	54 54	-32.3	-23.0 -23.9	v H
Rev. 11.10	1.08														
	f	Measurem	ent Frequenc	y		Amp	Preamp (Gain				Avg Lim	Average F	ield Strengt	h Limit
		Distance to							ct to 3 mete			Pk Lim			
		Analyzer R	0			Avg			Strength @				Margin vs.		
	AF	Antenna Fa	actor			Peak HPF		:d Peal s Filter	c Field Stre	ngth		Pk Mar	Margin vs.	Peak Limit	;

Page 20 of 84

7.2.2. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITH AC ADAPTER

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

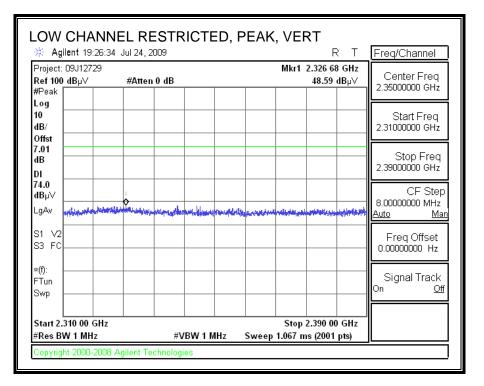
LOW CHANNE	EL RESTRICT	ED, PEAK, HO	DRIZ R T	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mkr	1 2.325 80 GHz 48.67 dBµ∨	Center Freq 2.3500000 GHz
Log 10 dB/ Offst				Start Freq 2.3100000 GHz
7.01 dB DI				Stop Freq 2.3900000 GHz
74.0 dBµ∨ LgAv thereautions	Charlowing and a strategic for a subsequence	peritoria dependente de la companya	he later and the state of the s	CF Step 8.0000000 MHz <u>Auto Mar</u>
S1 V2 S3 FC				Freq Offset 0.00000000 Hz
×(f): FTun Swp				Signal Track ^{On <u>Off</u>}
Start 2.310 00 GHz #Res BW 1 MHz	#VBW 1		p 2.390 00 GHz ms (2001 pts)	
Copyright 2000-2008 A	gilent Technologies			

Page 21 of 84

🔆 Agilent 19:32			AVG, HORIZ	RΤ	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB			327 20 GHz 38.07 dBµ∀	Center Freq 2.35000000 GHz
Log 10 dB/					Start Freq 2.31000000 GHz
Offst 7.01 dB DI					Stop Freq 2.39000000 GHz
54.0 dBµ∨ LqAv					CF Step 8.0000000 MHz
S1 V2			•		Auto Mar Freq Offset 0.00000000 Hz
×(f): FTun Swp					Signal Track
Start 2.310 00 GH #Res BW 1 MHz		W 10 Hz	Stop 2.3 Sweep 6.238 s (390 00 GHz 2001 pts)	

Page 22 of 84

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

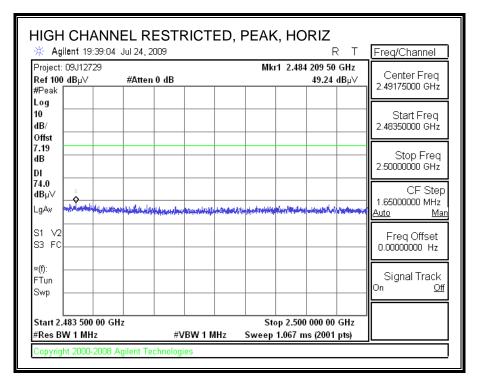


Page 23 of 84

🔆 Agilent 19:27:2	26 Jul 24, 2009		RT	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mkr1	2.326 88 GHz 36.83 dBµ∨	Center Freq 2.35000000 GHz
Log 10 dB/				Start Freq 2.31000000 GHz
Offst 7.01 dB				Stop Freq 2.39000000 GHz
DI 54.0 dBµ∨ LqAv				CF Step 8.00000000 MHz
S1 V2	1			<u>Auto Mar</u> Freq Offset 0.00000000 Hz
×(f): FTun Swp				Signal Track On <u>Off</u>
Start 2.310 00 GHz #Res BW 1 MHz	#VBW 1		2.390 00 GHz	

Page 24 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

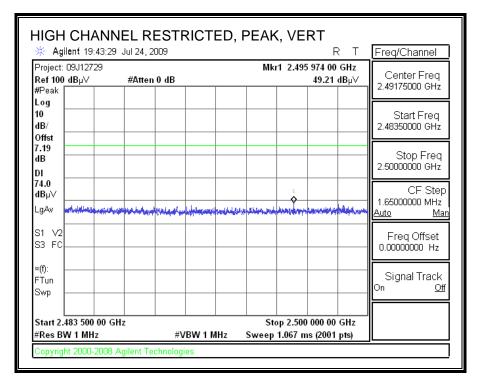


Page 25 of 84

HIGH CHANNEL	RESTRICTED,	AVG, HORIZ	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Att #Peak	en 0 dB	Mkr1 2.484 292 00 GHz 36.76 dBµ∀	Center Freq 2.49175000 GHz
Log 10 dB/ Offst			Start Freq 2.48350000 GHz
7.19 dB			Stop Freq 2.5000000 GHz
54.0 dBµ∀ LgAv			CF Step 1.65000000 MHz Auto Man
S1 V2			Freq Offset 0.00000000 Hz
×(f):			Signal Track On <u>Off</u>
Start 2.483 500 00 GHz #Res BW 1 MHz	#VBW 10 Hz	Stop 2.500 000 00 GHz Sweep 1.287 s (2001 pts)	

Page 26 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Page 27 of 84

🔆 Agilent 19:43:5	53 Jul 24, 2009		RΤ	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mkr1 2.483 59 36	0 75 GHz 5.09 dBµ∨	Center Freq 2.49175000 GHz
Log 10 dB/				Start Freq 2.48350000 GHz
Offst 7.19 dB DI				Stop Freq 2.5000000 GHz
54.0 dBµ∨ LgAv				CF Step 1.6500000 MHz <u>Auto Mar</u>
S1 V2 S3 FC				Freq Offset 0.00000000 Hz
≈(f): FTun Swp				Signal Track On <u>Off</u>
Start 2.483 500 00 #Res BW 1 MHz	GHz #VBW 10	Stop 2.500 00 Hz Sweep 1.287 s (2		

Page 28 of 84

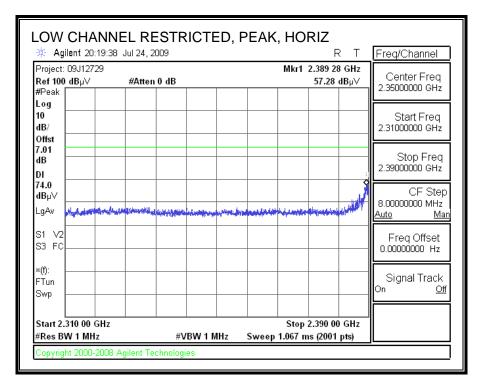
HARMONICS AND SPURIOUS EMISSIONS

	ice Cei	tification S	Services, Fr	emont	5m Ch	amber									
Company			NINTENDO												
Project #:			09J12729												
Date:			7/26/2009												
fest Eng			MENGISTU N		4										
Configura	tion:		EUT with AC												
Vlode:			ТХ, 802.11 Ъ №	APDE											
fest Equi	ipment														
Ho	rn 1-1	8GHz	Pre-ar	nplifer	1-260	GHz	Pre-am	plifer	26-40GH	z	н	orn >	18GHz		Limit
T59; S/	N+ 2245	@?m	T145 /	gilent 3	2009 00	05(-							FCC 15.209
159; 5/	n: 3243	ക്രണ	▼ 1143 F	ignent a	000A0	• J(•	
Hi Frequ	ency Cab	les —				-						_			
3' ca	able 22	2807700	12' c	able 2	28076	500	20' cal	ble 22	2807500		HPF		Reject Filte		<u>k Measurements</u> 3W=VBW=1MHz
3' cal	ble 228	07700	12' ca	ble 228	07600		20' cab	le 228(07500 _				R_001		age Measurements
									•				-	RBW:	=1MHz;VBW=10Hz
f			Read Avg.	AF	CL	Amp	D Сон		Peak	Avg	Pk Lim		im Pk Mar		
GHz	(m)	dBuV	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dBuV/m	dBuV	/m dB	dB	(V/H)
ow Ch. (24	3.0	() 40.7	30.4	32.8	5.8	-34.8	0.0	0.0	44.4	34.2	74	54	-29.6	-19.8	v
.824	3.0	38.5	26.4	32.8	5.8	-34.8	0.0	0.0	42.2	30.1	74	54	-31.8	-23.9	H
Aid Ch. (24 .874	37 MHz 3.0	s) 40.1	28.5	32.8	5.8	-34.9	0.0	0.0	43.9	32.3	74	54	-30.1	-21.7	v
.874	3.0	39.0	26.6	32.8	5.8	-34.9	0.0	0.0	42.8	30.4	74	54	-31.2	-23.6	H
				ļ				ļ							1
li Ch. (246 924	2 MHz) 3.0	41.1	29.4	32.8	5.9	-34.9	0.0	0.0	44.9	33.3	74	54	-29.1	-20.7	v
924	3.0	38.3	26.2	32.8	59	-34.9	0.0	0.0	42.1	30.1	74	54	-31.9	-23.9	H
	l.	l		I	L	L	<u>I</u>	l							1

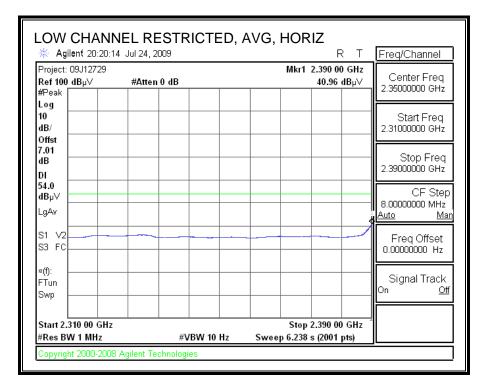
Page 29 of 84

7.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITH AC ADAPTER

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

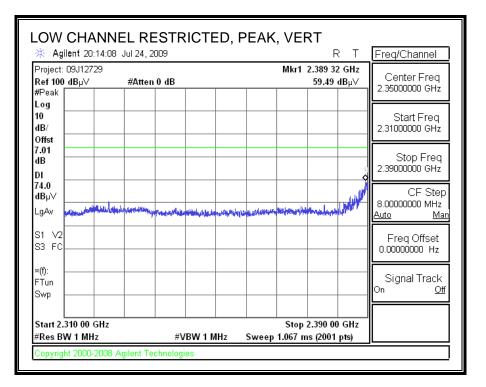


Page 30 of 84



Page 31 of 84

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

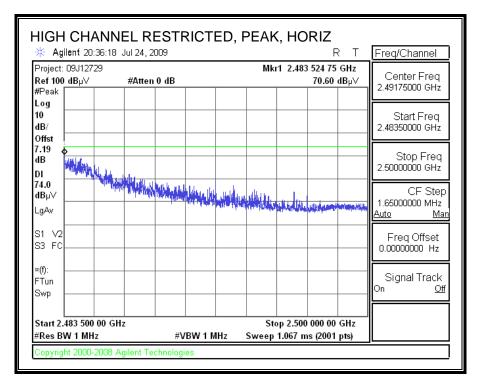


Page 32 of 84

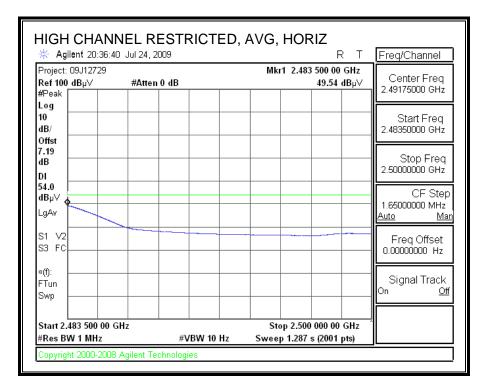
🔆 Agilent 20:14:	51 Jul 24, 2009	· ·	RΤ	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mkr1 2.39(42.	0 00 GHz 09 dBµ∀	Center Freq 2.35000000 GHz
Log 10 dB/				Start Freq 2.31000000 GHz
Offst 7.01 dB DI			_	Stop Freq 2.39000000 GHz
54.0 dBµ∨ LqAv				CF Step 8.0000000 MHz Auto Mar
S1 V2				Freq Offset 0.00000000 Hz
×(f): FTun Swp				Signal Track ^{On <u>Off</u>}
Start 2.310 00 GH: #Res BW 1 MHz	z #VBW 10	Stop 2.390 Hz Sweep 6.238 s (20		

Page 33 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

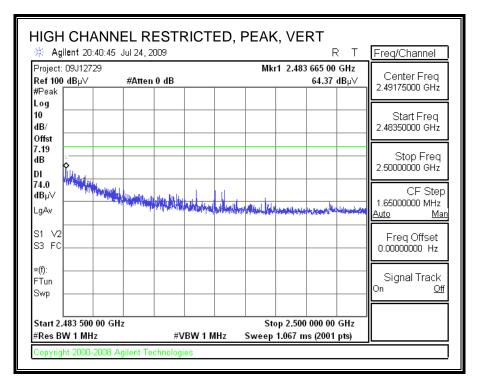


Page 34 of 84



Page 35 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Page 36 of 84

🔆 Agilent 20:41:1	4 Jul 24, 2009		RΤ	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mkr1 2.483 508 44	:25 GHz .33 dBµ∨	Center Freq 2.49175000 GHz
Log 10 dB/ Offst				Start Freq 2.48350000 GHz
dB				Stop Freq 2.5000000 GHz
54.0 dBµ∨ LgAv				CF Step 1.6500000 MHz <u>Auto Mar</u>
S1 V2 S3 FC				Freq Offset 0.00000000 Hz
×(f): FTun Swp				Signal Track On <u>Off</u>
Start 2.483 500 00 (#Res BW 1 MHz	GHz #VBW 10	Stop 2.500 000 Hz Sweep 1.287 s (20		*

Page 37 of 84

HARMONICS AND SPURIOUS EMISSIONS

0 7. E	NINTENDO 19712729 1726/2009 MENGISTU M UUT with AC. Pre-ar T145 A 12' c	MEKURIA A dapter	4 r 1-260 3008A00	GHz 05(–		ıplifer	- 26-40GH	z •	Но	orn > 180	эНz		Limit
0 7, № ± T 18GHz 5@3m • bbles	09J12729 7/26/2009 MENGISTU M EUT with AC J TX, 802.11 g M Pre-ar T145 A 12' c	Adapter MODE mplifer Agilent 3	r 1-260 3008A00	05(🖵		ıplifer	26-40GH	z v	Но	orn > 180	Hz		
0 7, № ± T 18GHz 5@3m ↓ bibles	09J12729 7/26/2009 MENGISTU M EUT with AC J TX, 802.11 g M Pre-ar T145 A 12' c	Adapter MODE mplifer Agilent 3	r 1-260 3008A00	05(🖵		ıplifer	26-40GH	z v	Но	orn > 180	Hz		
E N E T T S @3m S 22807700	MENGISTU M EUT with AC J TX, 802.11 g M Pre-ar T145 A 12' c	Adapter MODE mplifer Agilent 3	r 1-260 3008A00	05(🖵		ıplifer	26-40GH	z •	Но	orn > 180	γHz		
E T -18GHz 5 @3m •bbles 	EUT with AC . TX, 802.11 g M Pre-ar T145 A 12' c	Adapter MODE mplifer Agilent 3	r 1-260 3008A00	05(🖵		ıplifer	26-40GH	z	Н	orn > 180	€Hz		
T -18GHz -5 @3m ables 	TX, 802.11 g M Pre-ar T145 A 12' c	MODE mplifer Agilent 3	1-260 3008A0	05(🖵		ıplifer	26-40GH	z	Но	orn > 180	Hz		
nt: -18GHz -5@3m 	Pre-ar T145 A	mplifer Agilent 3	3008A0	05(🖵		ıplifer	26-40GH	z •	Н	orn > 18(€Hz		
-18GHz ¹⁵ @3m ¹⁵	T145 A	Agilent 3	3008A0	05(🖵		ıplifer	26-40GH	z	H	orn > 180	Hz		
15 @3m _	T145 A	Agilent 3	3008A0	05(🖵		nplifer	26-40GH	z	Н	orn > 180	SHz		
15 @3m _	T145 A	Agilent 3	3008A0	05(🖵		рштег	26-40GH	•		orh > 160	HZ		
ables	12' c							-					ECC 15 200
22807700		able 22	28076	:00								-	FCC 15.209
22807700		able 21	28076	300									
		able 2.	28076	500		LIA 22	2807500					Peal	k Measurements
807700	12' ca				20 Ca	bie 22	807500		HPF	Re	ject Filte	r	W=VBW=1MHz
		able 228	07600	_	20' cab	le 2280	07500 了			R	001		ige Measurements
												RBW=	1MHz; VBW=10Hz
Read Pk I	Pood Avg	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Di Lim	Avg Lim	Pl: Mar	Avg Mar	Notes
dBuV	dBuV	dB/m		dB	dB	dB		Avg dBuV/m	1	· · ·	rk Mar dB	dB	(V/H)
Hz)						1							(,
42.2	29.0	32.8	5.8	-34.8	0.0	0.0	45.9	32.7	74	54	-28.1	-21.3	V
39.2	26.3	32.8	5.8	-34.8	0.0	0.0	43.0	30.0	74	54	-31.0	-24.0	H
łz)							++						
41.9	28.3	32.8	5.8	-34.9	0.0	0.0	45.7	32.1	74	54	-28.3	-21.9	V
38.5	20.8	32.8	5.8	-34.9	ແບ	ບມ	423	30.0	74	54	-31.7	-23.4	H
9					-		1						Н
43.3	29.4	32.8	5.9	-34.9	0.0	0.0	47.2	33.3	74	54	-26.8	-20.7	V H
39.1	20.3	32.8	39	-34.9		0.0	43.0	30.2	74	54	-31.0	-23.8	н
										•			
	Hz) 42.2 39.2 Hz) 41.9 38.5 ()	tz) 29.0 39.2 26.3 tz) - 41.9 28.3 38.5 26.8 39.0 26.3 41.9 28.3 38.5 26.8 33.3 29.4	ta) 22 29.0 32.8 39.2 26.3 32.8 ta)	iz) 29.0 32.8 5.8 39.2 26.3 32.8 5.8 iv)	tr.) 32.8 5.8 -34.8 39.2 26.3 32.8 5.8 -34.8 39.2 26.3 32.8 5.8 -34.8 ta)		tr.) 29.0 32.8 5.8 -34.8 0.0 0.0 39.2 26.3 32.8 5.8 -34.8 0.0 0.0 ta)	tz) 328 58 -34.8 0.0 0.0 45.9 39.2 263 32.8 58 -34.8 0.0 0.0 45.9 39.2 263 32.8 5.8 -34.8 0.0 0.0 43.0 tz)		iz) 328 58 -348 0.0 0.0 459 32.7 74 39.2 263 328 58 -348 0.0 0.0 459 32.7 74 39.2 263 328 58 -348 0.0 0.0 43.0 30.0 74 it 28.3 32.8 58 -34.9 0.0 0.0 45.7 32.1 74 38.5 26.8 32.8 5.8 -34.9 0.0 0.0 42.3 30.6 74 9 43.3 29.4 32.8 5.9 -34.9 0.0 0.0 47.2 33.3 74		$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

Page 38 of 84

7.2.4. TRANSMITTER ABOVE 1 GHz FOR 802.11 MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

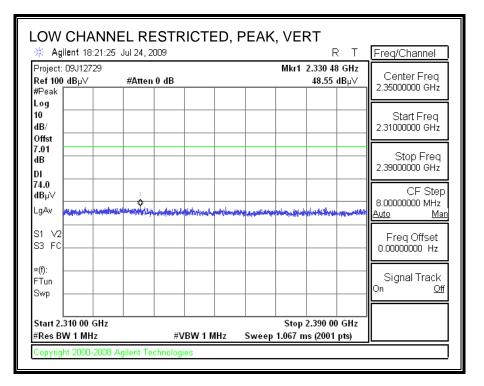
LOW CHANNE		ED, PEAK, H	ORIZ R T	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mk	r1 2.322 28 GHz 48.59 dBµ∀	Center Freq 2.3500000 GHz
Log 10 dB/ Offst				Start Freq 2.3100000 GHz
7.01 dB DI				Stop Freq 2.3900000 GHz
74.0 dBµ∨ ⊥ LgAv ⊔tγνωμιαν γγουλούγα	and the property of the second second second	hand a subsection of the subse	hai principalita di mana di man	CF Step 8.0000000 MHz <u>Auto Man</u>
S1 V2 S3 FC				Freq Offset 0.00000000 Hz
×(f): FTun Swp				Signal Track ^{On <u>Off</u>}
Start 2.310 00 GHz #Res BW 1 MHz	#VBW 1		op 2.390 00 GHz 7 ms (2001 pts)	
Copyright 2000-2008 A	gilent Technologies			

Page 39 of 84

🔆 Agilent 18:50:	NEL RESTRI 50 Jul 24, 2009	,	,	RT	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB		Mkr1	2.327 24 GHz 36.75 dBµ∨	Center Freq 2.35000000 GHz
Log 10 dB/					Start Freq 2.31000000 GHz
Offst 7.01 dB					Stop Freq 2.39000000 GHz
DI 54.0 dBµ∨ LqAv					CF Step 8.0000000 MHz
S1 V2			· · · · · · · · · · · · · · · · · · ·		<u>Auto Mar</u> Freq Offset 0.0000000 Hz
×(f): FTun Swp					Signal Track On <u>Off</u>
Start 2.310 00 GH: #Res BW 1 MHz		W 10 Hz	Stop Sweep 6.238	2.390 00 GHz s (2001 pts)	*

Page 40 of 84

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

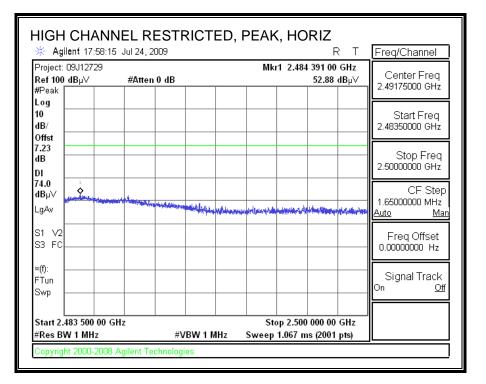


Page 41 of 84

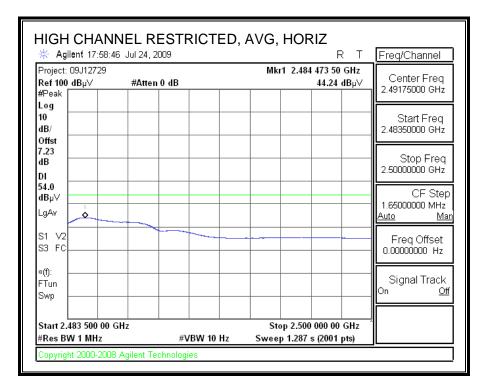
🔆 Agilent 18:22	:04 Jul 24, 2009	R	T Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak □	#Atten 0 dB	Mkr1 2.328 20 GH 36.04 dBµ	Contor Frod
Log 10 dB/ Offst			Start Freq 2.31000000 GHz
dB			Stop Freq 2.39000000 GHz
54.0 dBµ∨ LgAv			CF Step 8.0000000 MHz Auto Mar
S1 V2	↓ ↓		Freq Offset 0.00000000 Hz
×(f): FTun Swp			Signal Track
Start 2.310 00 GH #Res BW 1 MHz	z #VBW 10	Stop 2.390 00 GH Hz Sweep 6.238 s (2001 pts)	z

Page 42 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

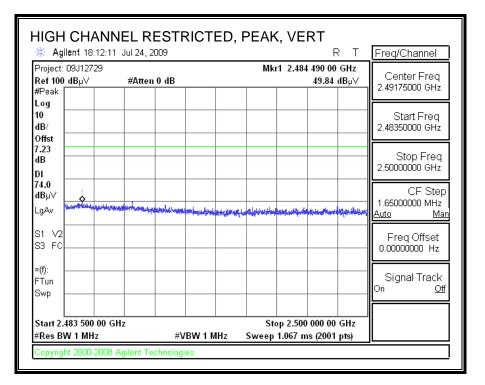


Page 43 of 84



Page 44 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Page 45 of 84

🔆 Agilent 18:12:31	I Jul 24, 2009	RT	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak □ □	#Atten 0 dB	Mkr1 2.484 242 50 GHz 39.70 dBµ∨	Center Freq 2.49175000 GHz
Log 10 dB/ Offst			Start Freq 2.48350000 GHz
7.23 dB DI			Stop Freq 2.50000000 GHz
54.0 dBµ∨ LgAv			CF Step 1.6500000 MHz <u>Auto Mar</u>
S1 V2 S3 FC			Freq Offset 0.00000000 Hz
×(f): FTun Swp			Signal Track On <u>Off</u>
Start 2.483 500 00 G #Res BW 1 MHz	Hz #VBW 10 Hz	Stop 2.500 000 00 GHz Sweep 1.287 s (2001 pts)	_

Page 46 of 84

HARMONICS AND SPURIOUS EMISSIONS

			Measurem												
Complia	nce Ce	rtification	Services, Fr	emont	5m Ch	amber									
Compan	v:		NINTENDO												
roject			09J12729												
Date:			7/26/2009												
fest En			MENGISTU N	IEKURIA	4										
Configu	ration:		EUT ALONE												
/Iode:			TX, 802.11 M	ODE											
fest Eq	uipmen	<u>t:</u>													
ш	orp 1 -	18GHz	Pre-ar	nnlifer	1 260	247	Dre om	nlifer	26-40GH	-	ц	orn > 18(244		Limit
				·			i i e-am	piner	20-4000	<u> </u>		011 > 100	5112		
T59; S	5/N: 3245	ö@3m	T145 #	Agilent 3	3008A0	05(🗸				-				-	FCC 15.209 🗸
r Hi Frea	uency Cab	oles					1			 ¬				_	,
		2807700	101 -	able 2	20070	00	20' cal	hla 23	2807500		HPF			Peal	k Measurements
3.0	able 2	2807700	12 0	able 2	28076	000	20 Ca		2007000		HPF	Re	ject Filte		W=VBW=1MHz
3' ca	able 228	07700	12' ca	ble 228	07600	_	20' cab	le 228(07500 🖕			• R	001	Avera	ige Measurements
														RBW=	1MHz ; VBW=10Hz
f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
GHz	(m)	dBuV	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	(V/H)
ow Ch. (2 .824	2412 MH 3.0	z) 39.2	27.7	32.8	5.8	-34.8	0.0	0.0	42.9	31.4	74	54	-31.1	-22.6	v
.824	3.0	39.2 39.5	27.0	32.8	5.8 5.8	-34.8	0.0	0.0	42.9	31.4	74 74	54 54	-31.1	-22.0	т Н
Aid Ch. (2 .884	2442 MH 3.0	z) 38.7	26.6	32.8	5.8	-34.9	0.0	0.0	42.5	30.4	74	54	-31.5	-23.6	v
.884	3.0	38.7	26.4	32.8	5.8 5.8	-34.9	0.0	0.0	42.5	30.4	74 74	54 54	-31.5	-23.8	т Н
li Ch. (24 944	72 MHz)	38.5	26.5	32.9	50	-34.9	0.0	0.0	12.1	30.3	74	54	-31.6	22.7	v
944 944	3.0	38.5 38.5	26.5	329	59 59	-34.9	0.0 0.0	0.0 0.0	42.A 42.A	30.3 30.1	74 74	54 54	-31.6 -31.6	-23.7 -23.9	т Н
			<u> </u>			L			<u> </u>			<u> </u>		<u> </u>	
ev. 11.10	.08														
	f	Maggirero	ent Frequenc			Amp	Preamp (Cain				Arra Tim	Amerage T	Field Strengt	h Timit
		Distance to		,		-	-		ct to 3 mete	ers.		-	-	d Strength L	
		Analyzer B				Avg			Strength @					: Average L	
	AF	Antenna F	<u> </u>			Peak	-		k Field Stre			-	-	. Peak Limit	
		Cable Los				HPF	High Pas								-
							0								

Page 47 of 84

7.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11b MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

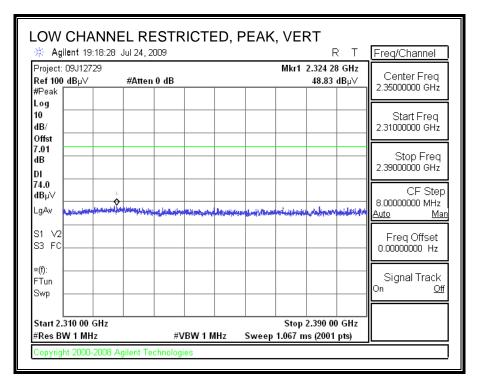
LOW CHANNEL RI		PEAK, HORIZ	R T Freq/Channel
Project: 09J12729 Ref 100 dB µV #Atter #Peak	n0 dB	Mkr1 2.389 24 49.15	Contor Frog
Log 10 dB/ Offst			Start Freq 2.31000000 GHz
dB DI			Stop Freq 2.39000000 GHz
74.0 dBµ∨ LgAv	lifutiliyaashiidandaanaashiinadandat	a produkte fan fan stere skriet skriet skriet fan stere	CF Step 8.00000000 MHz <u>Auto Ma</u> i
S1 V2 S3 FC			Freq Offset 0.00000000 Hz
«(f): FTun Swp			Signal Track On <u>Off</u>
Start 2.310 00 GHz #Res BW 1 MHz	#VBW 1 MHz	Stop 2.390 00 Sweep 1.067 ms (2001	

Page 48 of 84

🔆 Agilent 19:14	21 Jul 24, 2009	R	T Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mkr1 2.326 96 G 38.27 dB	Contor Frod
Log 10 dB/			Start Freq 2.31000000 GHz
Offst 7.01 dB			Stop Freq
DI 54.0 dBµ∨ LqAv			CF Step 8.0000000 MHz
S1 V2	1		Freq Offset
×(f): FTun Swp			Signal Track
Start 2.310 00 GH #Res BW 1 MHz	z #VBW 10	Stop 2.390 00 G Hz Sweep 6.238 s (2001 pts)	

Page 49 of 84

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

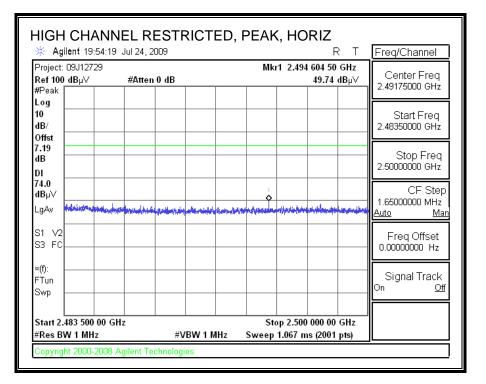


Page 50 of 84

🔆 Agilent 19:19:	09 Jul 24, 2009			RΤ	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB		Mkr1	2.326 92 GHz 36.99 dBµ∨	Center Freq 2.35000000 GHz
Log 10 dB/					Start Freq 2.31000000 GHz
Offst 7.01 dB					Stop Freq 2.39000000 GHz
DI 54.0 dBµ∨ LqAv					CF Step 8.0000000 MHz
S1 V2	1 ••••••••••••••••••••••••••••••••••••				Auto Mar Freq Offset 0.00000000 Hz
×(f):					Signal Track
Swp Start 2.310 00 GH: #Res BW 1 MHz		BW 10 Hz	Stop Sweep 6.238	2.390 00 GHz	

Page 51 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

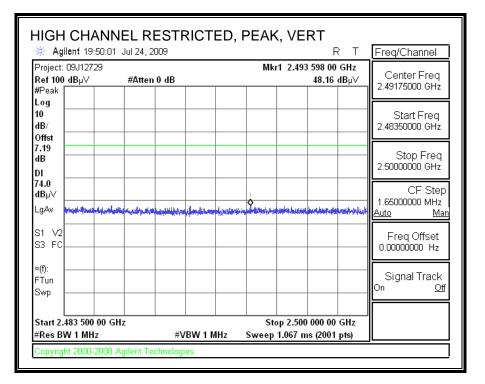


Page 52 of 84

Agilent 19:55:0	NEL RESTRIC 19 Jul 24, 2009	, ILD,	AVO, IK	R T	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB		Mkr1 2.	483 508 25 GHz 36.66 dBµ∀	Center Freq 2.49175000 GHz
Log 10 dB/					Start Freq 2.48350000 GHz
Offst 7.19 dB DI					Stop Freq 2.5000000 GHz
54.0 dBµ∨ LgAv					CF Step 1.6500000 MHz Auto Man
S1 V2 S3 FC					Freq Offset 0.00000000 Hz
»(f): FTun Swp					Signal Track On <u>Off</u>
Start 2.483 500 00 #Res BW 1 MHz	GHz #VBW	10 Hz		500 000 00 GHz 87 s (2001 pts)	

Page 53 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Page 54 of 84

🔆 Agilent 19:50:	23 Jul 24, 2009		RΤ	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak □	#Atten 0 dB	Mkr1 2.484 5	64 25 GHz 35.67 dBµ∀	Center Freq 2.49175000 GHz
Log 10 dB/				Start Freq 2.48350000 GHz
Offst 7.19 dB DI				Stop Freq 2.50000000 GHz
54.0 dBµ∨ LgAv				CF Step 1.6500000 MHz <u>Auto Mar</u>
S1 V2				Freq Offset 0.00000000 Hz
»(f): FTun Swp				Signal Track On <u>Off</u>
Start 2.483 500 00 #Res BW 1 MHz	GHz #VBW 10	Stop 2.500 0 Hz Sweep 1.287 s		

Page 55 of 84

HARMONICS AND SPURIOUS EMISSIONS

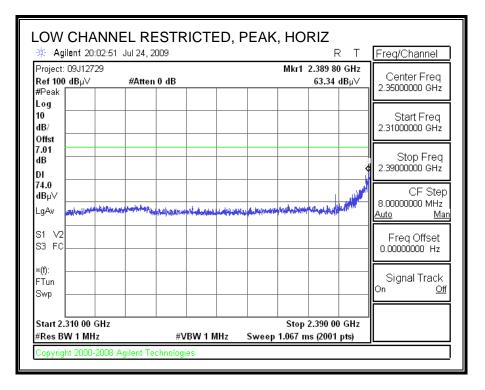
Compan Project # Date: Test En; Configu Mode:	#: gineer:		NINTENDO 09J12729 7/26/2009 MENGISTU N EUT ALONE TX, 802.11b 1		2										
Test Eq		_													
	orn 1- 5/N: 324	18GHz 5@3m		mplifer Agilent 3			Pre-am	plifer	26-40GH	•	H	orn > 18(GHz	•	Limit FCC 15.209
3' 0	uency Cal cable 2 able 228	2807700		able 2		600	20' cal		2807500		HPF		ject Filter	RBV	<u>Measurements</u> W=VBW=1MHz ge Measurements
	1016 220	,01700	• 12 Ci	able 220	07600	•	20 cab	16 2200	•			<u> </u>			1MHz ; VBW=10Hz
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	GT GT	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
.ow Ch. (/ 1.824 1.824	2412 MH 3.0 3.0	z) 41.0 38.4	30.4 26.2	32.8 32.8	5.8 5.8	-34.8 -34.8	0.0 0.0	۵0 ۵0	44.7 42.1	34.1 29.9	74 74	54 54	-29.3 -31.9	-19.9 -24.1	V H
Mid Ch. (2															
1.874 1.874	3.D 3.D	40.0 38.8	28.4 26.7	32.8 32.8	5.8 5.8	-34.9 -34.9	0.0 0.0	0.0 0.0	43.7 42.6	32.2 30.5	74 74	54 54	-30.3 -31.4	-21.8 -23.5	V H
li Ch. (24 1924	62 MHz 3.0) 40.2	29.4	32.8	59	-34.9	0.0	0.0	44.1	33.3	74	54	-29.9	-20.7	v
1924 1924	3.0 3.0	40.2 38.6	29.4 26.1	32.8	59 59	-34.9	0.0	0.0	44.1	33-3 30.0	74 74	54 54	-299	-20.7 -24.0	H
Rev. 11.10	.08			<u> </u>				L							
	f Dist	Measurem Distance to	ent Frequenc Antenna	у		Amp D Corr		Corre	ct to 3 mete			Pk Lim	Peak Field	ield Strength Strength Li	mit
		Analyzer B				Avg	American	Field 9	Strength @	2 m		Arra Mor	Morgin me	Average Li	mit

Page 56 of 84

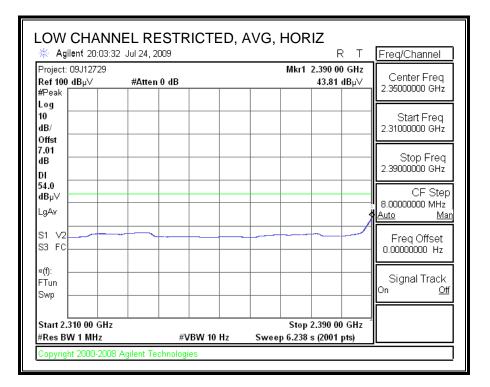
COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4701C 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.

7.2.6. TRANSMITTER ABOVE 1 GHz FOR 802.11g MODE IN THE 2.4 GHz BAND WITHOUT AC ADAPTER

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

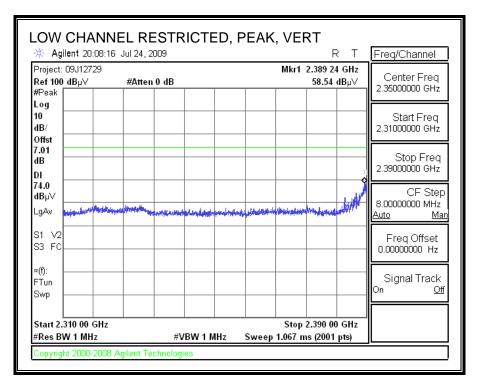


Page 57 of 84



Page 58 of 84

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

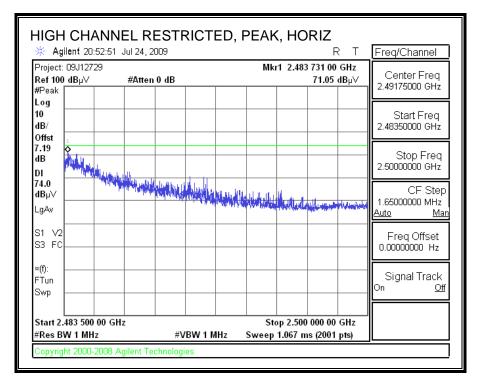


Page 59 of 84

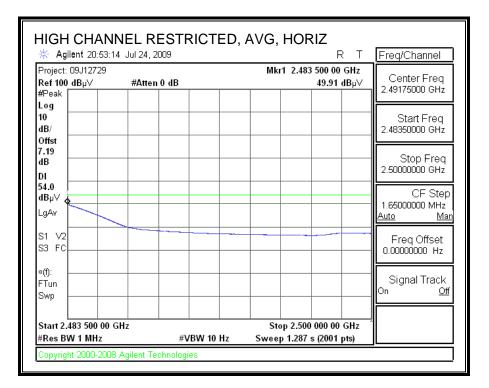
🔆 Agilent 20:08	INEL RESTRICTE :55 Jul 24, 2009	R	T Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mkr1 2.390 00 G 41.95 dB	Contor Frog
Log 10 dB/			Start Freq 2.31000000 GHz
Offst 7.01 dB DI			Stop Freq 2.39000000 GHz
54.0 dBµ∨ LgAv			CF Step 8.00000000 MHz Auto Mai
S1 V2			Freq Offset 0.00000000 Hz
×(f): FTun Swp			Signal Track
Start 2.310 00 GH #Res BW 1 MHz	z #VBW 10 I	Stop 2.390 00 G Hz Sweep 6.238 s (2001 pts	

Page 60 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

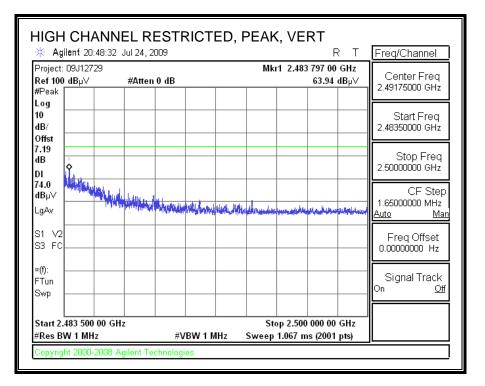


Page 61 of 84



Page 62 of 84

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



Page 63 of 84

🔆 Agilent 20:48:5	58 Jul 24, 2009	RT	Freq/Channel
Project: 09J12729 Ref 100 dB µ∨ #Peak	#Atten 0 dB	Mkr1 2.483 500 00 GHz 42.63 dBµ∀	Center Freq 2.49175000 GHz
Log 10 dB/			Start Freq 2.48350000 GHz
Offst 7.19 dB DI			Stop Freq 2.5000000 GHz
54.0 dBµ∨ LgAv ₫			CF Step 1.6500000 MHz <u>Auto Mar</u>
S1 V2 S3 FC			Freq Offset 0.00000000 Hz
≈(f): FTun Swp			Signal Track On <u>Off</u>
Start 2.483 500 00 / #Res BW 1 MHz	GHz #VBW 10 H	Stop 2.500 000 00 GHz Iz Sweep 1.287 s (2001 pts)	

Page 64 of 84

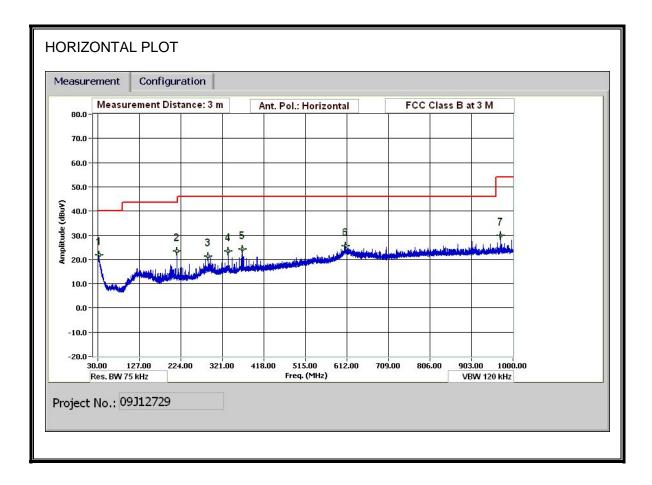
HARMONICS AND SPURIOUS EMISSIONS

			/ Measurem												
Complia	nce Ce	rtification	Services, Fr	emont	5m Ch	amber									
Compan	v:		NINTENDO												
roject			09J12729												
Date:			7/24/2009												
fest En			MENGISTU M	IEKURIA	7										
Configu Mode:	ration:		EUT ALONE												
vioue:			TX, 802.11 g N	AFDE											
fest Eq	uipmen	t <u>:</u>													
ш	orp 1	18GHz	Pre-ar	nnlifer	1 260	24-	Dre om	nlifer	26-40GH	-	ш	orn > 18(244		Limit
				·			i re-am	piner	20-4001	<u> </u>			5112		
T59; S	5/N: 3245	5 @3m	T145 A	Agilent 3	3008A0	05(🗸				-				-	FCC 15.209
- F HiFreq	juency Cat	oles				_									
		2807700	12' 0	able 2	28074	500	20' cal	ble 22	807500		HPF		ject Filte	Peal	k Measurements
50	able 2	2807700	12 0	able 2	20070		20 00	510 22			HEE	Re	ject Flite		W=VBW=1MHz
3' c	able 228	07700	🖌 12' ca	ble 228	07600	-	20' cab	le 228(07500 🖕			• R_	001	T	ige Measurements
									_					RBW=	1MHz ; VBW=10Hz
f	Dist	Read Pk	Read Avg.	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim	Avg Lim	Pk Mar	Avg Mar	Notes
GHz	(m)	dBuV	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	(V/H)
	2412 MH								44.9	32.3			-29.1		
.824 .824	3.0 3.0	41.2 39.1	28.5 26.8	32.8 32.8	5.8 5.8	-34.8 -34.8	0.0 0.0	0.0 0.0	44.9	32.3 30.5	74 74	54 54	-29.1 -31.2	-21.7 -23.5	V H
Aid Ch. (2 .874	2437 MH 3.0	z) 40.7	28.2	32.8	5.8	-34.9	0.0	0.0	44.5	32.0	74	54	-29.5	-22.0	v
.874	3.0	40./ 38.9	26.5	32.8	5.8 5.8	-34.9	0.0	0.0	44.5	32.0	74 74	54 54	-29.5	-22.0	Y H
li Ch. (24 924	62 MHz) 3.0	41.4	28.5	32.8	59	-34.9	0.0	0.0	45.2	32.4	74	54	-28.8	-21.6	v
924	3.0	38.6	26.6	32.8	59	-34.9	0.0	0.0	43.2	30.5	74	54 54	-20.0	-23.5	H
				•											
	1			l	L		1	l				L		L	
ev. 11.10	.08														
	f	Measurem	ent Frequency			Amp	Preamp (Tain				AvoTim	Average T	Field Strengt	h Timit
		Distance to		,		-	-		ct to 3 mete	rs		-	-	d Strength L	
		Analyzer R				Avg			Strength @					. Average L	
	AF	Antenna Fa	<u> </u>			Peak	-		c Field Stre			-	-	. Peak Limit	
	CL	Cable Los:	3			HPF	High Pas			-			-		
							-								

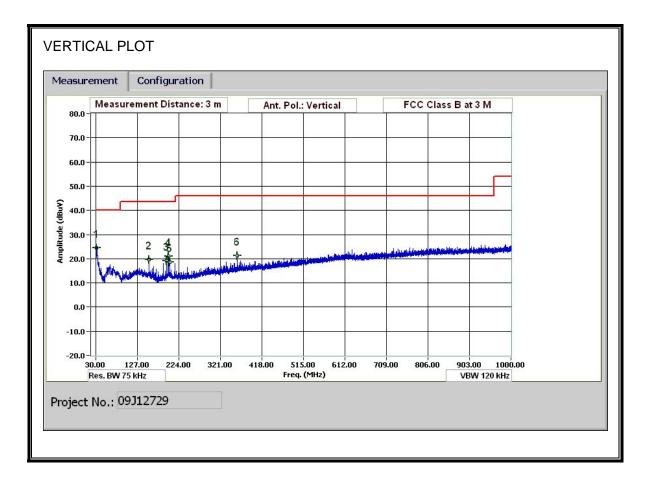
Page 65 of 84

7.2.7. TX SPURIOUS EMISSION 30 TO 1000 MHz WITH TABUCHI AC ADAPTER

RADIATED EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



Page 66 of 84



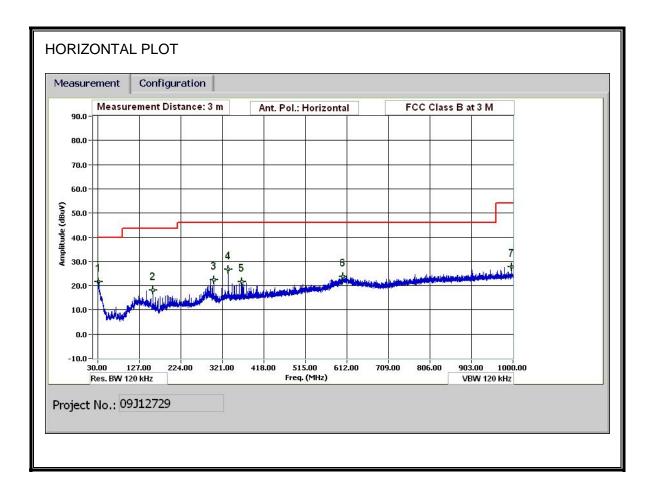
Page 67 of 84

Compliar		iency Meas fication Se			t 5m Cha	amber									
- Test Engr			,												
Date: 07/3	3/09														
Project #:															
Company															
		02.11 +802.	.11b/g Ra	adio M	odule in	Game Co	ontrolle	r							
EUT M/N: Test Targ															
Mode Op															
mode Op	f	Measurem	ont From	671017	Amp	Preamp	Tain			Marrin	Margin vs.	Limit			
	Dist	Distance t						to 3 meters		marênt	Maight *3.	Lintar			
	Read	Analyzer l			Filter	Filter Ins									
	AF	Antenna F			Corr.	Calculate		irength							
	CL	Cable Loss			Limit	Field Stre									
							-								
f	Dist	Read	AF	CL	Amp	D Corr		Corr.	Limit		Ant. Pol.	Det.	Ant. Higł	Table Angle	Notes
MHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	cm	Degree	
<u>With AC</u> 32.280	Adapter: 3.0	Horizonta 30.7	1 19.1	0.5	28.4	0.0	0.0	21.9	40.0	-18.1	H	Р	121.0	183.5	
214.808	3.0	38.5	11.9	1.3	28.2	0.0	0.0	23.5	43.5	-20.0	H	P	132.6	346.6	
287.651	3.0	34.8	13.0	1.5	28.1	0.0	0.0	21.2	46.0	-24.8	H	Р	118.2	104.7	
335.173	3.0	36.0	13.9	1.6	28.1	0.0	0.0	23.4	46.0	-22.6	H	Р	112.1	37.4	
368.654	3.0	36.2	14.4	1.7	28.1	0.0	0.0	24.3	46.0	- 21.7	H	Р	100.0	110.1	
609.624	3.0	32.3	18.5	2.3	27.5	0.0	0.0	25.6	46.0	-20.4	H	P	108.4	137.5	
971.919	3.0	32.6	22.3	2.9	27.9	0.0	0.0	30.0	54.0	-24.0	H	Р	155.5	178.3	
With AC	Adapter:	Vertical	ļ						•						
												~			
32.160	3.0 3.0	33.2 34.5	19.2 12.2	0.5 1.1	28.4 28.3	0.0 0.0	0.0 0.0	24.5 19.6	40.0 43.5	-15.5 -23.9	V V	P P	121.0 127.4	186.2 45.2	
154 905	3.0	34.5	12.2	1.1	28.3	0.0	0.0 0.0	19.6 19.1	43.5	-23.9	v V	P P	127.4	45.2 360.0	
154.805	3.0	36.0	11.9	1.2	28.2	0.0	0.0	20.9	43.5	-22.6	v	P	112.0	357.8	
154.805 195.367 199.087	3.0	33.6	12.0	1.3	28.2	0.0	0.0	18.7	43.5	-24.8	v	P	104.0	358.2	
195.367		33.4	14.3	1.7	28.1	0.0	0.0	21.3	46.0	-24.7	V	Р	117.0	0.0	
195.367 199.087	3.0														
195.367 199.087 202.687	3.0														

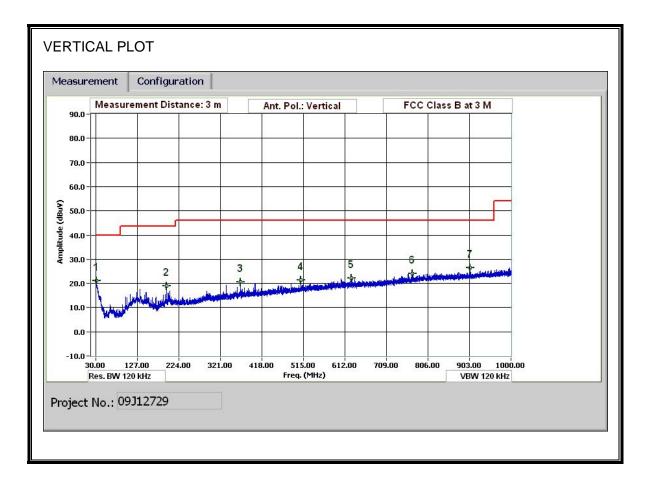
Page 68 of 84

7.2.8. TX SPURIOUS EMISSION 30 TO 1000 MHz WITHOUT TABUCHI AC ADAPTER

RADIATED EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



Page 69 of 84



Page 70 of 84

		ency Meas lication Se			5m Cha	amber									
- Test Engr:	Doug Ar	dercon													
Date: 07/2		LILLIVOIT													
Project #:	09J1272	9													
Company	: Nintend	lo													
		02.11 +802.	.11b/g Ra	dio Me	odule in	Game Co	ntrolle	r							
EUT M/N:															
Test Targe															
Mode Ope												.			
	f	Measurem			Amp	Preamp (Margin	Margin vs.	Linut			
	Dist P J	Distance t Analyzer l		a		Distance Filter Ins		to 3 meters							
	Read AF	Analyzer I Antenna F	-		Filter Corr.	Filter Ins Calculate		increase the							
	CL	Cable Loss			Limit	Field Stre									
	CL.	Caule LOSS			-mar	T leiu Stře	ngin LB								
f	Dist	Read	AF	CL	Amp	D Corr	Filter	Corr.	Limit	Margin	Ant. Pol.	Det.	Ant. High	Table Angle	Notes
MHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	cm	Degree	
Battery Po	ower: Ho	<u>rizontal</u>	1		<u></u>	<u></u>					•		1		
			ļ												
31.200	3.0	30.9	19.8	0.5	29.7	0.0	0.0	21.5	40.0	-18.5	H	Р	100.0	339.6	
159.245	3.0	35.2	10.9	1.1	29.3	0.0	0.0	18.1	43.5	-25.4	H	P	142.6	127.0	
301.691 335.173	3.0 3.0	36.4 40.0	13.3 13.9	1.6 1.7	28.8 29.0	0.0 0.0	0.0 0.0	22.5 26.6	46.0 46.0	-23.5 -19.4	H H	P P	125.1 121.2	235.4 245.7	
	3.0	34.5	13.3	1.7	29.0	0.0	0.0	20.0	46.0	-13.4	H	P P	119.8	245.7	
	3.0	32.7	18.3	2.4	29.6	0.0	0.0	23.7	46.0	-22.3	H	P	115.7	235.8	
365.894			22.6	3.2	28.4	0.0	0.0	27.8	54.0	-26.2	H	P	100.0	290.4	
365.894 603.264 997.000	3.0	30.4				1									
603.264		30.4									1		1		
603.264 997.000	3.0										ļ		·\$		
603.264 997.000	3.0										•				
603.264 997.000 <u>Battery P</u> e	3.0 ower: Ve	rtical		0.5	70 7	0.0	0.0	21.0	40.0	10.0	T7	ъ	100 P	0.0	
603.264 997.000 <u>Battery P</u> 31.440	3.0 ower: Ve 3.0	rtical 30.5	19.7	0.5	29.7	0.0	0.0	21.0	40.0 43.5	-19.0	V	P P	100.0	0.0	
603.264 997.000 <u>Battery P</u> 31.440 195.367	3.0 ower: Ve 3.0 3.0	rtical 30.5 35.0	19.7 11.6	1.3	28.9	0.0	0.0	18.9	43.5	-24.6	V V V	P P P	104.0	59.5	
603.264 997.000 <u>Battery P</u> 31.440	3.0 ower: Ve 3.0	rtical 30.5	19.7						¢		v	Р			
603.264 997.000 Battery Po 31.440 195.367 368.654	3.0 ower: Ve: 3.0 3.0 3.0 3.0	rtical 30.5 35.0 33.5	19.7 11.6 14.5	1.3 1.8	28.9 29.1	0.0 0.0	0.0 0.0	18.9 20.7	43.5 46.0	-24.6 -25.3	V V	P P	104.0 114.2	59.5 360.0	
603.264 997.000 Battery Pe 31.440 195.367 368.654 508.700	3.0 ower: Ve 3.0 3.0 3.0 3.0 3.0	rtical 30.5 35.0 33.5 32.1	19.7 11.6 14.5 16.9	1.3 1.8 2.2	28.9 29.1 29.7	0.0 0.0 0.0	0.0 0.0 0.0	18.9 20.7 21.4	43.5 46.0 46.0	-24.6 -25.3 -24.6	V V V	P P P	104.0 114.2 100.0	59.5 360.0 9.2	

Page 71 of 84

8. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted I	Limit (dBuV)
	Quasi-peak	Average
0.15-0.5	66 to 56 °	56 to 46 *
0.5-5	56	46
5-30	60	50

Decreases with the logarithm of the frequency.

TEST PROCEDURE

ANSI C63.4

RESULTS

Page 72 of 84

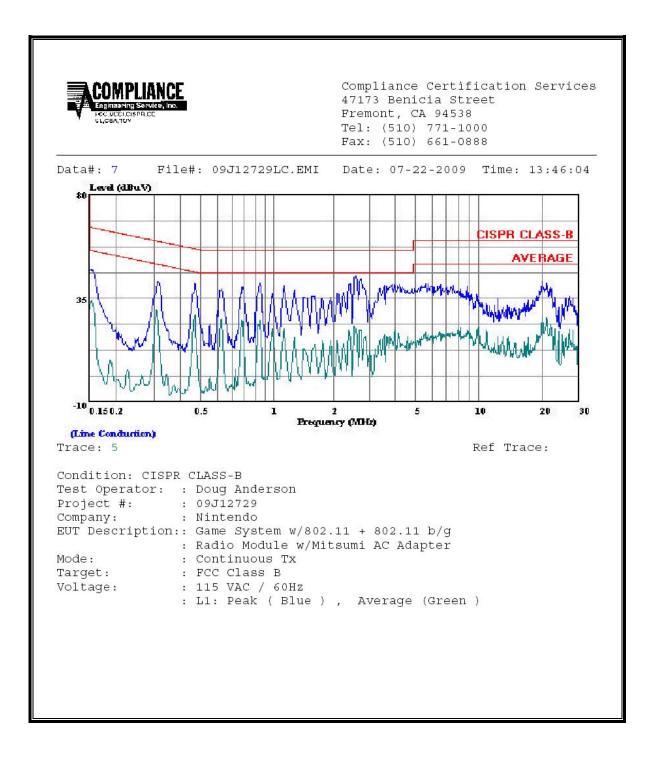
MITSUMI AC/DC ADAPTER:

6 WORST EMISSIONS

(MHz) PK (dBuV) QP (dBuV) AV (dBuV) (dB) QP AV QP (dB) AV (dB) 0.47 41.79 27.62 0.00 56.58 46.58 -14.79 -18. 0.94 41.83 25.52 0.00 56.00 46.00 -14.17 -20. 2.68 44.78 22.99 0.00 56.00 46.00 -11.22 -23. 0.51 43.70 29.97 0.00 56.00 46.00 -12.30 -16.	
0.94 41.83 25.52 0.00 56.00 46.00 -14.17 -20. 2.68 44.78 22.99 0.00 56.00 46.00 -11.22 -23.	96 L1
2.68 44.78 22.99 0.00 56.00 46.00 -11.22 -23.	
	48 L1
0.51 43.70 29.97 0.00 56.00 46.00 -12.30 -16	01 L1
0.51 45.70 25.57 0.00 50.00 40.00 -12.50 -10.	03 L2
0.84 43.78 34.35 0.00 56.00 46.00 -12.22 -11.	65 L2
2.69 44.81 29.35 0.00 56.00 46.00 -11.19 -16.	65 L2

Page 73 of 84

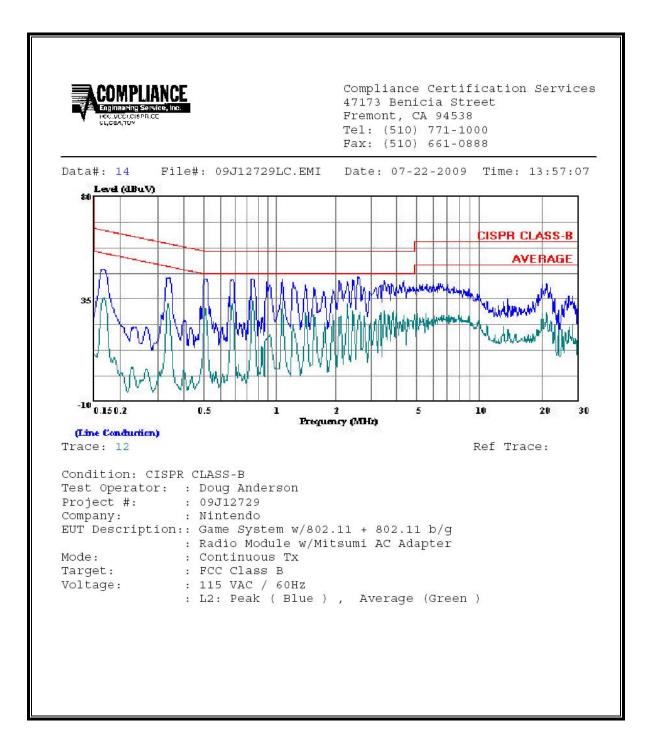
LINE 1 RESULTS



Page 74 of 84

COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4701C 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.

LINE 2 RESULTS



Page 75 of 84

COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4701C 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.

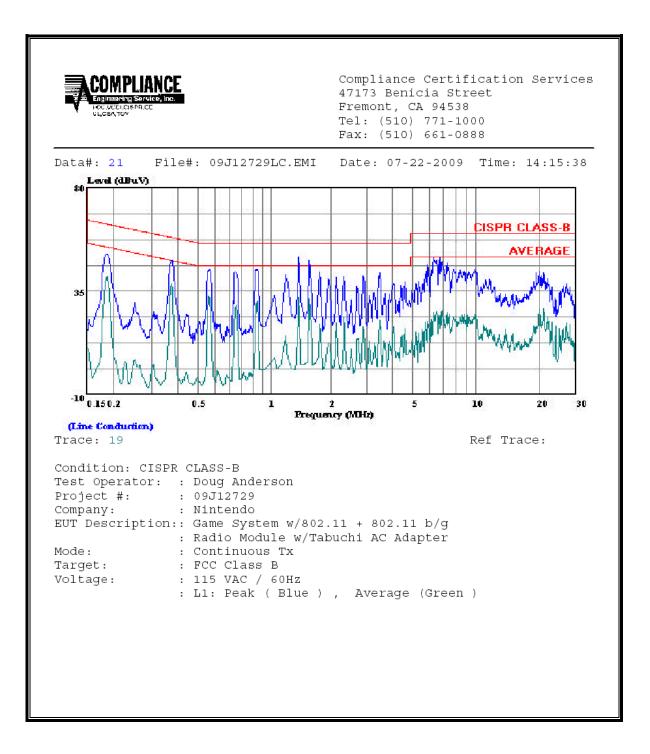
TABUCHI AC/DC ADAPTER:

6 WORST EMISSIONS

	CONDUCTED EMISSIONS DATA (115VAC 60Hz)											
Freq.		Reading		Closs	Limit	EN_B	Mar	gin	Remark			
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2			
0.38	48.38		38.21	0.00	58.39	48.39	-10.01	-10.18	L1			
1.49	49.81		32.51	0.00	56.00	46.00	-6.19	-13.49	L1			
1.66	48.30		31.57	0.00	56.00	46.00	-7.70	-14.43	L1			
0.39	48.90		38.12	0.00	58.17	48.17	-9.27	-10.05	L2			
1.32	48.05		33.53	0.00	56.00	46.00	-7.95	-12.47	L2			
1.52	47.07		34.85	0.00	56.00	46.00	-8.93	-11.15	L2			
6 Worst I	Data											

Page 76 of 84

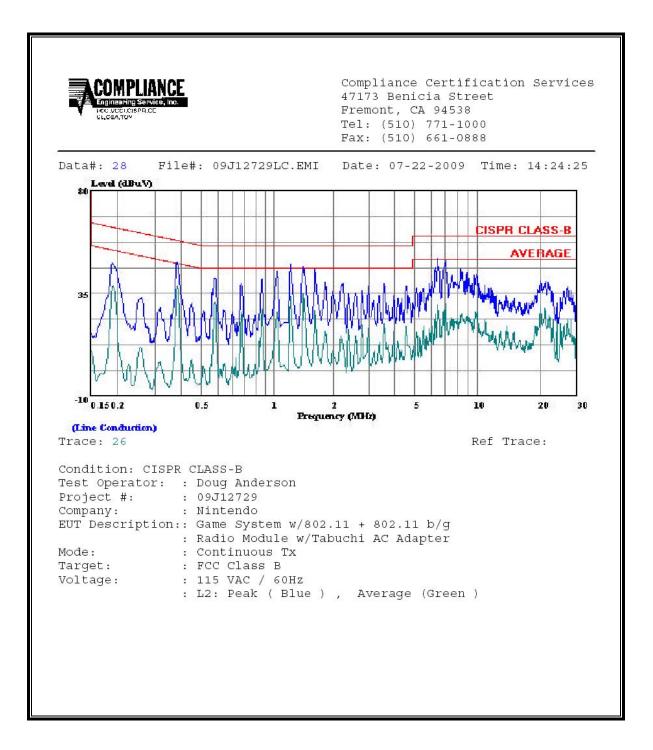
LINE 1 RESULTS



Page 77 of 84

COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4701C 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.

LINE 2 RESULTS



Page 78 of 84

COMPLIANCE CERTIFICATION SERVICES FORM NO: CCSUP4701C 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of CCS.