

FCC CFR47 PART 15 SUBPART C INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

A tablet (PAD) computer, contains 802.11a/b/g/n transceiver (radio module)

FCC MODEL NUMBER: TP00045A1 IC MODEL NUMBER: TP00045A1IT

> FCC ID: PU5-TP00045A1IT IC: 4182A-TP00045A1IT

REPORT NUMBER: 12U14545-2, Revision B

ISSUE DATE: NOVEMBER 26, 2012

Prepared for WINSTRON CORPORATION 21F., NO. 88, SEC. 1 HSINTAI 5TH RD., HSICHIH DIST. NEW TAIPEI CITY 22181, TAIWAN (R.O.C.)

> Prepared by UL CCS 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
	10/04/12	Initial Issue	T. LEE
A	10/26/12	Updated IC model number	A. Zaffar
В	11/26/12	Add 5.2/5.3/5.6GHz Chain B and Chain A+B band edge and harmonic spurious.	C. Pang

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1. ATTESTATION OF TEST RESULTS

DATE TESTED:	AUGUST 24, 2012 – September 27 and November 17-21, 2012
SERIAL NUMBER:	R9-R1PMH 12/07
FCC MODEL NUMBER: IC MODEL NUMBER:	TP00045A1 TP00045A1IT
EUT DESCRIPTION:	A tablet (PAD) computer, contains 802.11a/b/g/n transceiver (radio module)
COMPANY NAME:	WISTRON CORPORATION 21F., No. 88, Sec.1, Hsintai 5 th Rd., Hsichih Dist. New Taipei City 22181, Taiwan (R.O.C.)

APPLICABLE STANDARDS					
STANDARD	TEST RESULTS				
CFR 47 Part 15 Subpart E	Pass				
INDUSTRY CANADA RSS-210 Issue 8 Annex 9	Pass				
INDUSTRY CANADA RSS-GEN Issue 3	Pass				

UL 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 UL 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 UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL 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 UL CCS By:

Tested By:

Tri 1

TIM LEE EMC SUPERVISOR UL CCS

14 dive Sn

OLIVER SU EMC ENGINEER UL CCS

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, FCC 06-96, FCC KDB 789033, ANSI C63.10-2009, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

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

UL 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%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a The EUT is a Tablet (PAD) computer, contains 802.11a/b/g/n transceiver (radio module).

The radio module (Model: 62205ANSFF) is manufactured by Intel.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

	Frequency			Measured Output Power
Band	(MHz)	Mode	Channel	(dBm)
	5180	11a	36	15.1
	5200	11a	40	15.5
	5240	11a	48	15.8
5.2 G	5180	11n HT20 (1x1)	36	15.5
	5200	11n HT20 (1x1)	40	15.0
	5240	11n HT20 (1x1)	48	15.0
	5180	11n HT20 (2x2)	36	13.0/13.0
	5200	11n HT20 (2x2)	40	13.0/13.0
	5240	11n HT20 (2x2)	48	13.1/13.1
	5190	11n HT40 (1x1)	38	10.5
	5230	11n HT40 (1x1)	46	10.5
	5190	11n HT40 (2x2)	38	9.1/9.1
	5230	11n HT40 (2x2)	46	9.1/9.1
	5260	11a	52	15.5
	5300	11a	60	14.9
	5320	11a	64	14.0
5.3 G	5260	11n HT20 (1x1)	52	15.5
	5300	11n HT20 (1x1)	60	15.5
	5320	11n HT20 (1x1)	64	14.0
	5260	11n HT20 (2x2)	52	13.2/13.2
	5300	11n HT20 (2x2)	60	13.1/13.2
	5320	11n HT20 (2x2)	64	13.1/13.2
	5270	11n HT40 (1x1)	54	11.1
	5310	11n HT40 (1x1)	62	11.1
	5270	11n HT40 (2x2)	54	9.5/9.6
	5310	11n HT40 (2x2)	62	9.5/9.5

	5500	11a	100	15.1
	5680	11a	136	16.0
	5700	11a	140	14.2
	5500	11n HT20 (1x1)	100	15.1
5.5 G	5600	11n HT20 (1x1)	120	16.0
	5680	11n HT20 (1x1)	136	15.5
	5700	11n HT20 (1x1)	140	14.0
	5500	11n HT20 (2x2)	100	13.0/13.2
	5600	11n HT20 (2x2)	120	13.1/13.1
	5700	11n HT20 (2x2)	140	13.5/13.5
	5510	11n HT40 (1x1)	102	13.6
	5590	11n HT40 (1x1)	118	13.5
	5670	11n HT40 (1x1)	134	13.5
	5510	11n HT40 (2x2)	102	12.6/12.6
	5590	11n HT40 (2x2)	118	13.1/13.0
	5670	11n HT40 (2x2)	134	13.0/13.1

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

WNC Antenna Assembly Summary:

1A	1B	1C		
Antenna Part Number	Manufacture	Antenna Type	Frequency band (MHz)	Peak gain with cable loss (dBi)
Main Antenna	Wistron Neweb	PIFA	2.4GHz band	-1.88
(P/N:25.90AFI.001)	Corporation	FILA	5 GHz band	-2.33
Auxiliary antenna	Wistron Neweb	PIFA	2.4GHz band	0.58
(P/N:25.90AFJ.001)	Corporation	FIFA	5 GHz band	0.20

WhaYU Antenna Assembly Summary:

1A Antenna Part Number	1B Manufacture	1C Antenna Type	Frequency band (MHz)	Peak gain with cable loss (dBi)
Main Antenna	WHAYU Industrial	PIFA	2.4GHz band	-1.95
(P/N:25.90AFI.011)	Co,.Ltd		5 GHz band	-2.61
Auxiliary antenna	WHAYU Industrial	PIFA	2.4GHz band	0.38
(P/N:25.90AFJ.011)	Co,.Ltd	FIFA	5 GHz band	0.08

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5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was DRTU, rev. 1.5.5-0427.

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5.5. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y, Z, it was determined that Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

Only the radiated tests were conducted. Conducted test data were leveraged from the original report Sporton International, Report number FR&CR1D1211AA.

The entire radiated suite of testing was conducted on Chain A and MIMO. Preliminary testing on Harmonic and Spurious indicates Chain A testing is representative for Chain B. Bandedge testing was also conducted on Chain B on worst case channels and modes.

Worst-case measured data rates were:

802.11a mode: 6 Mbps 802.11n HT20mode: MCS0 802.11n HT40mode: MCS0

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List						
Description	Manufacturer	Model	Serial Number	FCC ID		
AC-DC Adapter	LENOVO	ADP-65FD A	69PW26W002V	DoC		

I/O CABLES

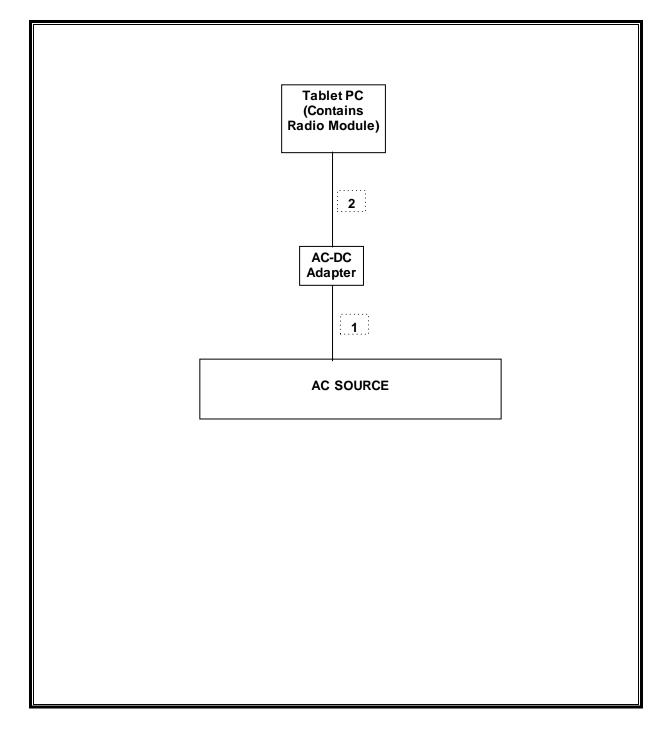
	I/O Cable List							
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks		
1	AC	1	US	Un-shielded	1.8			
2	DC	1	DC	Un-shielded	1.8	A ferrite core is at output end		

TEST SETUP

Test software exercised the radio card during the tests.

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SETUP DIAGRAM FOR TESTS



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6. TEST AND MEASUREMENT EQUIPMENT

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

	Test Equipme	nt List			
Description	Manufacturer	Model	Asset	Cal Date	Cal Due
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01171	01/26/12	01/26/13
Antenna, Horn, 18 GHz	EMCO	3115	C00872	09/20/11	09/20/12
Antenna, Horn, 26.5 GHz	ARA	SWH-28	C01015	04/23/12	04/23/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	11/11/11	11/11/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	11/11/11	11/11/12
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01016	08/14/12	08/14/13
Antenna, Horn, 18 GHz	EMCO	3115	C00945	10/06/11	10/06/12
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00885	11/11/11	11/11/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	11/11/11	11/11/12
Antenna, Bilog, 30MHz-1 GHz	Sunol Sciences	JB1	C01011	03/23/12	03/23/13
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/12	10/25/13
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00580	12/30/11	12/01/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	10/22/12	10/22/13
Antenna, Horn, 40 GHz	ARA	MWH-2640/B	C00981	06/14/11	06/14/13
Preamplifier, 40 GHz	Miteq	NSP4000- SP2	C00990	08/02/11	08/02/13
Power Meter	Agilent / HP	437B	s/n 3125U	07/25/12	07/25/13
Average Power Sensor	Agilent / HP	8481A	s/n 1926A	07/26/12	07/26/13
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	02/16/12	02/16/13
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	08/18/12	08/18/13
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01069	08/18/12	08/18/13

Note: Horns C00872 and C00C00945 were used before its cal due date. Amplifiers CC00558, C00749, C00885, and C01052 were used before its cal due date.

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7. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

<u>LIMITS</u>

None; for reporting purposes only.

PROCEDURE

KDB 789033 Zero-Span Spectrum Analyzer Method.

7.1. ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time	Period	Duty Cycle	Duty	Duty Cycle	1/B
	В		х	Cycle	Correction Factor	Minimum VBW
	(msec)	(msec)	(linear)	(%)	(dB)	(kHz)
802.11a 20 MHz	2.072	2.096	0.989	98.9%	0.05	0.483
802.11n HT20	1.928	1.960	0.984	98.4%	0.07	0.519
802.11n HT40	0.944	0.974	0.969	96.9%	0.14	1.059

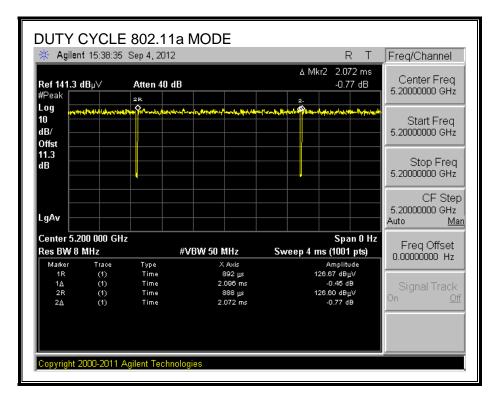
7.2. MEASUREMENT METHOD FOR AVERAGE SPURIOUS EMISSIONS ABOVE 1 GHz

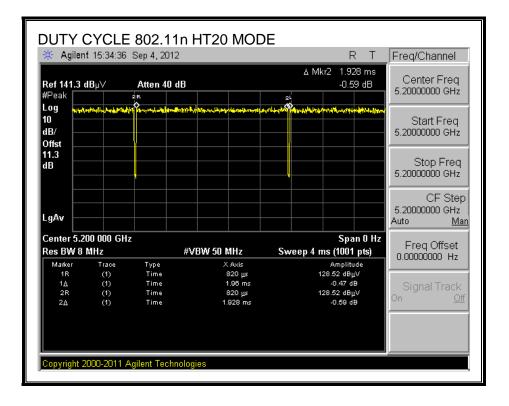
The Duty Cycle is greater than or equal to 98%, KDB 789033 Method VB with Power RMS Averaging is used.

The Duty Cycle is less than 98% and consistent, KDB 789033 Method VB with Power RMS Averaging is used.

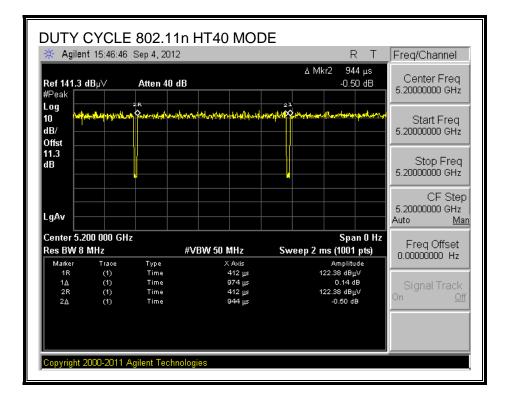
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7.2.1. DUTY CYCLE PLOTS





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8. RADIATED TEST RESULTS

8.1. LIMITS AND PROCEDURE

<u>LIMITS</u>

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.

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; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

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.

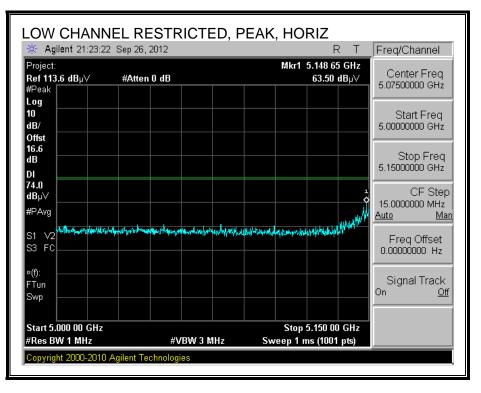
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

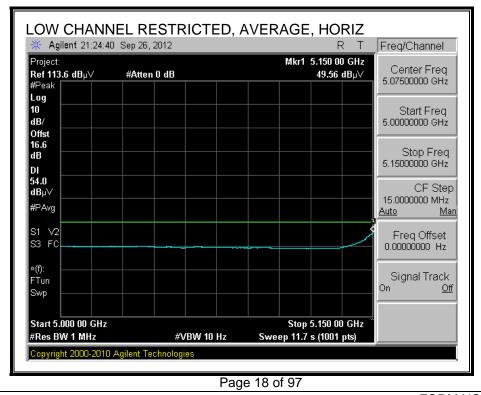
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8.2. **TRANSMITTER ABOVE 1 GHz**

8.2.1. TX ABOVE 1 GHz 802.11a IN THE 5.2 GHz BAND, CHAIN A

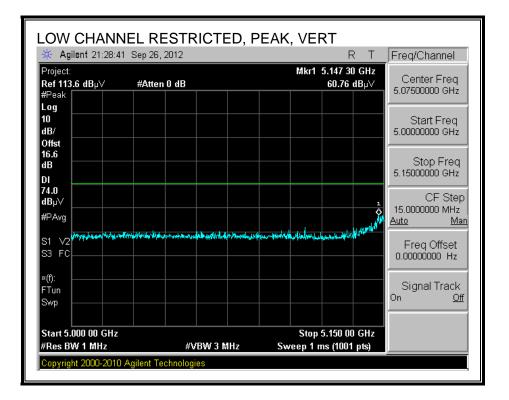
RESTRICTED BANDEDGE (LOW CHANNEL)

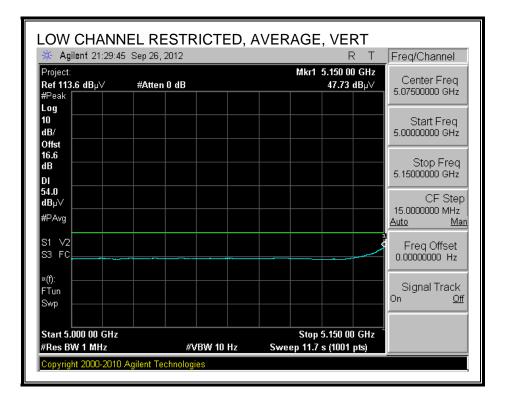




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HARMONICS AND SPURIOUS EMISSIONS

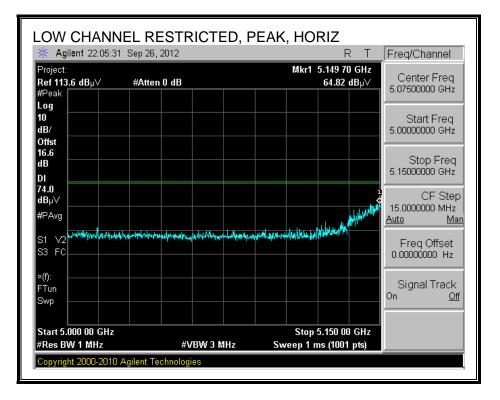
f Dist Read Pk Read Avg. dBuV AF CL Amp dB D Corr Fltr Peak dB Avg dBuV/m Avg Lim dBuV/m Pk Mar dBuV/m Avg Mar dBuV/m Notes dBuV/m 6Hz (m) dBuV dBuV dB/m dB dB dB dB dB dBuV/m dBuV/m dBuV/m dBuV/m dBuV/m dBuV/m dB dB (V/H) 0.36 3.0 39.25 26.34 38.2 9.5 -35.8 0.0 0.0 51.1 38.2 74 54 -22.9 -15.8 Noise floor/V 0.36 3.0 39.45 26.75 38.2 9.5 -35.8 0.0 0.0 51.3 38.1 74 54 -22.9 -15.8 Noise floor/V 0.40 3.0 38.54 26.75 38.2 9.5 -35.8 0.0 0.0 51.4 38.5 74 54 -23.5 -15.3 Noise floor/H 0.40 3.0 39.42	roject #: i 2011445 ate: i 97/2012 set Euglineer: Thank Ngvyen onfiguration: EUT at verse petition tote: Transmit est Faujement: Horn 1.18GHz Pre-amplifer 1.26GHz T144 Miteq 3008A0033 Pre-amplifer 26.40GHz T125; ARA 18.26GHz; SN:1007 Pre-amplifer 26.40GHz T125; ARA 18.26GHz; SN:1007 Pre-amplifer 26.40GHz T125; ARA 18.26GHz; SN:1007 Pre-amplifer 28.40GHz T25; ARA 18.26GHz; SN:1007 Pre-amplifer 28.40GHz Pre-amplifer 28.40GHz Pre-amplifer 28.40GHz; SN:1007 Pre-amplifer 28.40GHz Pre-amplifer 28.40GHz; SN:1007 Pre-amplifer 28.40GHz; SN:10007 Pre-amplifer 28.40GHz; SN:1007 Pre-amplifer	oject #			Services, Fr	emont :	5m Ch	amber-A	A										
Horn 1-18GHz Pre-amplifer 1-26GHz Horn > 18GHz Limit TT3: SN: 6717 @3m Pre-amplifer 1-26GHz TH IT44 Miteg 3008A00931 Image: Cable 22807700 Limit TT2: cable 22807600 Colspan="2">Limit Limit Colspan="2">Colspan="2" Limit Colspan="2" To colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" Colspan="2" <th <<="" colspan="2" th=""><th>Horn 1.18GHz TT3; S/R: 6717 @3m Pre-amplifer 1.28GHz T144 Miteq 3008A0933 Horn > 18GHz Limit Horn 1.18GHz T13; S/R: 6717 @3m Colspan="2">Limit Limit 3' cable 22807700 12' cable 22807600 20' cable 22807500 3' cable 22807700 12' cable 22807600 20' cable 22807500 Pre-amplifer 26.40GHz HPF Reject Filter R_002 Peak Measurements RBW=VBW=1MHz A registree and registree and a registree and a registree</th><th>est Eng onfigur</th><th>#: gineer:</th><th></th><th>12U14545 9/7/2012 Thanh Nguyer EUT at worst p</th><th>1</th><th>ATION</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th>	<th>Horn 1.18GHz TT3; S/R: 6717 @3m Pre-amplifer 1.28GHz T144 Miteq 3008A0933 Horn > 18GHz Limit Horn 1.18GHz T13; S/R: 6717 @3m Colspan="2">Limit Limit 3' cable 22807700 12' cable 22807600 20' cable 22807500 3' cable 22807700 12' cable 22807600 20' cable 22807500 Pre-amplifer 26.40GHz HPF Reject Filter R_002 Peak Measurements RBW=VBW=1MHz A registree and registree and a registree and a registree</th> <th>est Eng onfigur</th> <th>#: gineer:</th> <th></th> <th>12U14545 9/7/2012 Thanh Nguyer EUT at worst p</th> <th>1</th> <th>ATION</th> <th></th>		Horn 1.18GHz TT3; S/R: 6717 @3m Pre-amplifer 1.28GHz T144 Miteq 3008A0933 Horn > 18GHz Limit Horn 1.18GHz T13; S/R: 6717 @3m Colspan="2">Limit Limit 3' cable 22807700 12' cable 22807600 20' cable 22807500 3' cable 22807700 12' cable 22807600 20' cable 22807500 Pre-amplifer 26.40GHz HPF Reject Filter R_002 Peak Measurements RBW=VBW=1MHz A registree and registree and a registree and a registree	est Eng onfigur	#: gineer:		12U14545 9/7/2012 Thanh Nguyer EUT at worst p	1	ATION										
Trist in the contract of any prior for contract of the contract	Tr3; SN: 6717 @3m T144 Miteq 3008A00931 T100 mpmore to contrained in the intervent of the interven	est Equ	uipmen	<u>t:</u>															
Historium Presidential Structure Presidential Structure Presidential Structure Presidential Structure Historium Presidential Structure 12' cable 22807600 20' cable 22807500 Presidential Structure Presiden	Intermined addacdostic In					·			Pre-am	plifer	26-40GH								
3' cable 22807700 12' cable 22807600 20' cable 22807500 Peak Measurements BRW=VBW=1MHz 3' cable 22807700 20' cable 22807500 Peak Measurements Reject Filter Peak Measurements 1' cable 22807600 20' cable 22807500 Peak Avg Peak Measurements The peak Measurements GHz (m) Age ad Avg AF CL Amp D Corr Fltr Peak Avg Pk Lim Negett Filter Peak Measurements Superiments Cli Arg Arg Mar Avg Mar Notes GHz (m) BuV/m BuV/m BuV/m BuV/m BuV/m Mar Avg Mar Notes GHZ (a) 0 O O O	3' cable 22807700 12' cable 22807600 20' cable 22807500 Image: cable 22807600 Peak Measurements RBW=1MHz Average Measurements RBW=1MHz 1' cable 22807600 20' cable 22807500 Image: cable 22807600 Peak Measurements RBW=1MHz 1' cable 22807600 20' cable 22807500 Image: cable 22807600 Peak Measurements RBW=1MHz 1' cable 22807600 O' cable 22807500 Image: cable 22807600 Peak Measurements RBW=1MHz 1' cable 22807600 O' cable 22807500 Image: cable 22807600 Peak Measurements RBW=1MHz 1' cable 22807600 O' cable 22807500 Image: cable 22807600 Peak Measurements RBW=1MHz Cable 22807600 O' Cable 22807500 Image: cable 22807600 Peak Mage: cable 22807600 O' Cable 22807600 O' Cable 22807500 Image: cable 22807600 Peak Mage: Cable 22807600 O' Cable 22807600 O' Cable 22807600 Image: cable 22807600 O' Cable 22807600																		

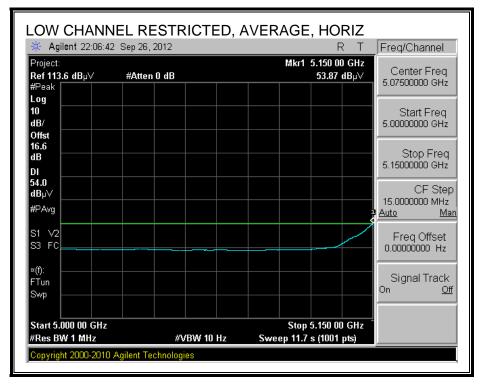
UL CCS FORM NO: CCSUP4701H 47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888 This report shall not be reproduced except in full, without the written approval of UL CCS.

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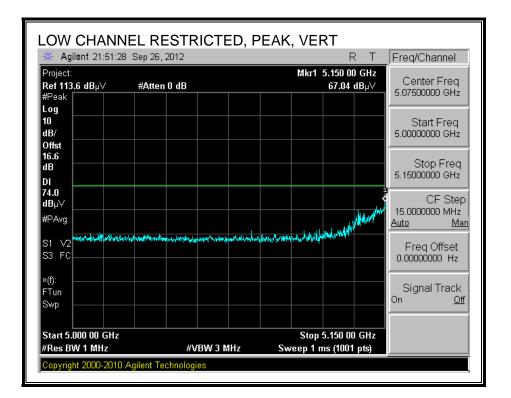
8.2.2. TX ABOVE 1 GHz 802.11n HT20 IN THE 5.2 GHz BAND, CHAIN A

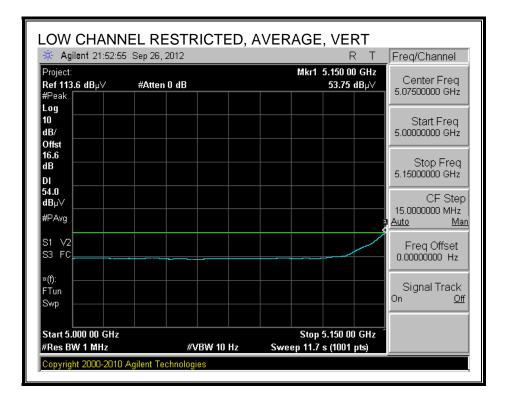
RESTRICTED BANDEDGE (LOW CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

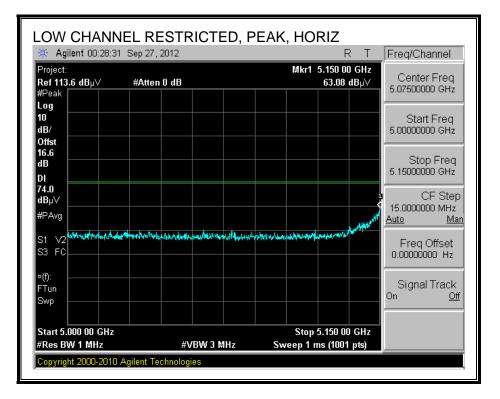
	lorn 1- S/N: 671	18GHz 7 @3m	Pre-ar	nplifer ⁄liteq 30			Pre-am	plifer	26-40GH		Ho 5; ARA 18-26	orn > 180 GHz; S/N:1		•	Limit FCC 15.209
3'	quency Cal cable 2 able 228	2807700		able 2		500	20' cal		807500		HPF		eject Filte	RB	<u>k Measurements</u> W=VBW=1MHz ge Measurements
f	Dist		Read Avg.	ble 228	07600 CL	• Amp	D Corr	Fltr	Peak	Avg	Pk Lim		002		IMHz; VBW=10Hz
GHz	(m)	dBuV	dBuV	Ar dB/m	dB	dB	dB	ниг dB	1	Avg dBuV/m		dBuV/m	dB	dB	(V/H)
0.36	3.0	39.42	26.12	38.2	9.5	-35.8	0.0	0.0	51.3	38.0	74	54	-22.7	-16.0	Noise floor/V
0.36 fid Chai	3.0 nnel 5200	39.26 MHz	26.15	38.2	9.5	-35.8	0.0	0.0	51.1	38.0	74	54	-22.9	-16.0	Noise floor/H
0.40 0.40	3.0	39.15 39.24	25.89 26.13	38.2 38.2	9.5 9.5	-35.8 -35.8	0.0	0.0 0.0	51.1 51.2	37.8 38.1	74 74	54 54	-22.9 -22.8	-16.2 -15.9	Noise floor/V Noise floor/H
	5240MHz 3.0		26.45	38.2	9.6	-35.8	0.0	0.0	52.3	38.5	74	54	-21.7	-15.5	Noise floor/V
0.48 0.48	3.0	40.25 39.36	26.45	38.2 38.2	9.6 9.6	-35.8	0.0	0.0	52.5 51.4	38.5 38.5	74	54	-21.7	-15.5	Noise floor/H
o other	emission	s were detect	ed above the sys	stems no	ise floo	r									
ev. 10.2	f Dist	Measurem Distance to Analyzer R Antenna Fa Cable Loss	eading actor	y		Amp D Corr Avg Peak HPF	Average	Correc Field S d Peal	ct to 3 mete strength @ c Field Stre	3 m		Pk Lim Avg Mar	Peak Fiel Margin vs	Field Strengt I Strength L . Average L . Peak Limit	imit imit

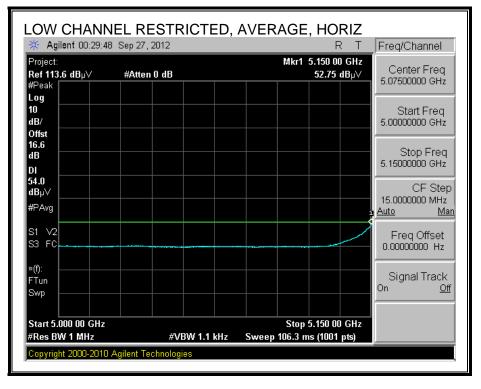
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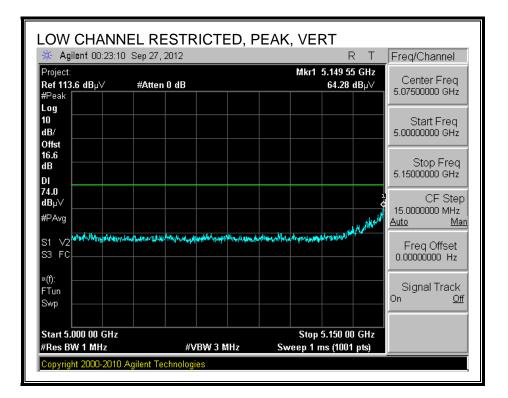
8.2.3. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.2 GHz BAND, CHAIN A

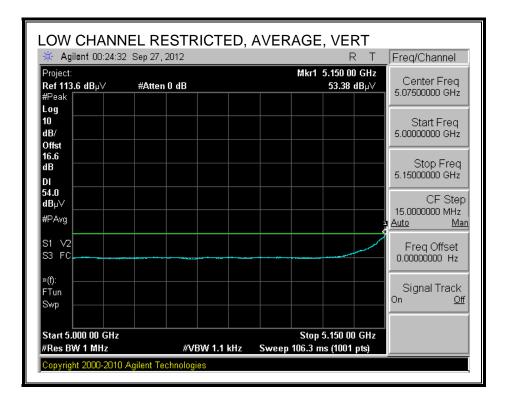
RESTRICTED BANDEDGE (LOW CHANNEL)





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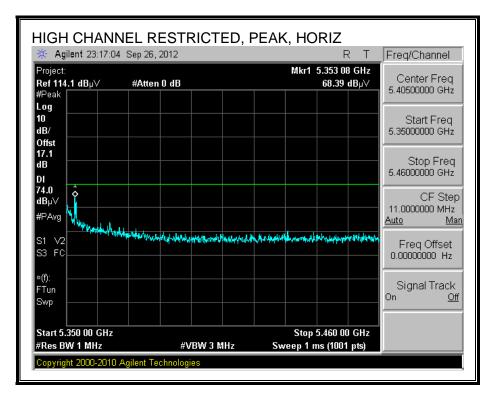
HARMONICS AND SPURIOUS EMISSIONS

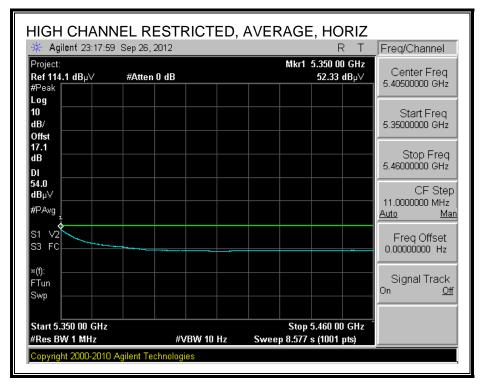
If Frequency Cables 3' cable 22807700 12' cable 22807600 20' cable 22807500 Peak Measurements Peak Measurements 3' cable 22807700 12' cable 22807600 20' cable 22807500 3' cable 22807700 Peak Measurements Peak Measurements Colspan="4">Reject Filter Peak Measurements Reject Filter Peak Measurements Colspan="4">Peak Measurements Colspan="4">Peak Measurements Colspan="4">Peak Measurements Output Peak Measurements Output Peak Measurements Output Peak Measurements Measurements Peak Measurements Output Peak Meas	H T73; S	S/N: 671	18GHz 7 @3m	_	40 Mode mplifer Aiteq 30			Pre-am	plifer	26-40GH		Ho 5; ARA 18-26	orn > 180 GHz; S/N:1		•	Limit FCC 15.209
GHz (m) dBuV dBv/m dB dC/(H) dB dB dB (V/H) owch 5190 MHz	3' 0	cable 2	2807700									HPF			RB Avera	W=VBW=1MHz age Measurements
ow Ch 5190MHz 26.85 38.2 9.5 -35.8 0.0 0.0 51.6 38.8 74 54 -22.4 -15.2 Noise floor/V 0.38 3.0 40.02 26.22 38.2 9.5 -35.8 0.0 0.0 51.6 38.8 74 54 -22.4 -15.2 Noise floor/V 0.38 3.0 40.02 26.22 38.2 9.5 -35.8 0.0 0.0 51.9 38.1 74 54 -22.4 -15.9 Noise floor/V 0.46 3.0 40.25 26.45 38.2 9.6 -35.8 0.0 0.0 51.4 38.5 74 54 -21.7 -15.5 Noise floor/V 0.46 3.0 39.36 26.42 38.2 9.6 -35.8 0.0 0.0 51.4 38.5 74 54 -21.7 -15.5 Noise floor/V 0.46 3.0 39.36 26.42 38.2 9.6 -35.8 0.0 <		1	1			(£	1			1 0	:	1 0 1	
0.38 3.0 39.69 26.85 38.2 9.5 -35.8 0.0 0.0 51.6 38.8 74 54 -22.4 -15.2 Noise floor/V 0.38 3.0 40.02 26.22 38.2 9.5 -35.8 0.0 0.0 51.9 38.1 74 54 -22.4 -15.2 Noise floor/V ligh Ch 5230MHz <t< th=""><th></th><th></th><th>dBuV</th><th>dBuV</th><th>dB/m</th><th>dB</th><th>dB</th><th>dB</th><th>dB</th><th>dBuV/m</th><th>dBuV/m</th><th>dBuV/m</th><th>dBuV/m</th><th>dB</th><th>dB</th><th>(V/H)</th></t<>			dBuV	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	(V/H)
f Measurement Frequency Dist Amp Preamp Gain Preamp Gain Read Avg Lim Af Avg Lim Arean Avg Lim Area Avg Lim	0.38	3.0														
0.46 3.0 40.25 26.45 38.2 9.6 -35.8 0.0 0.0 52.3 38.5 74 54 -21.7 -15.5 Noise floor/V 0.46 3.0 39.36 26.42 38.2 9.6 -35.8 0.0 0.0 51.4 38.5 74 54 -21.7 -15.5 Noise floor/V o other emissions were detected above the systems noise floor				26.22	38.2	9.5	-35.8	0.0	0.0	51.9	38.1	74	54	-22.1	-15.9	Noise floor/H
a other emissions were detected above the systems noise floor a).46	3.0	40.25													
intervention intervention intervention intervention intervention intervention intervention intervention intervention).46	3.0	39.36	26.42	38.2	9.6	-35.8	0.0	0.0	51.4	38.5	74	54	-22.6	-15.5	Noise floor/H
	ev. 10.24	f Dist Read AF	Distance to Analyzer R	Antenna eading actor	у		D Corr Avg	Distance Average	Correc Field S d Peal	Strength @ k Field Stre	3 m		Pk Lim Avg Mar	Peak Fiel Margin vs	d Strength L . Average L	imit imit

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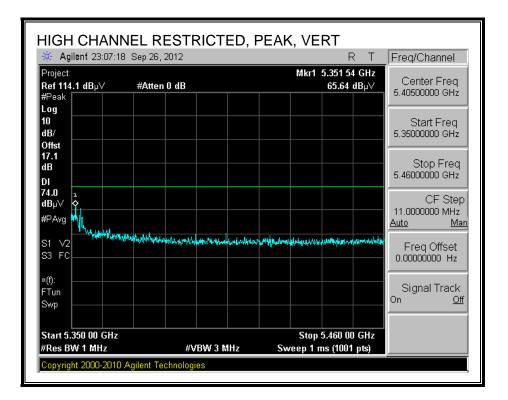
8.2.4. TX ABOVE 1 GHz 802.11a IN THE 5.3 GHz BAND, CHAIN A

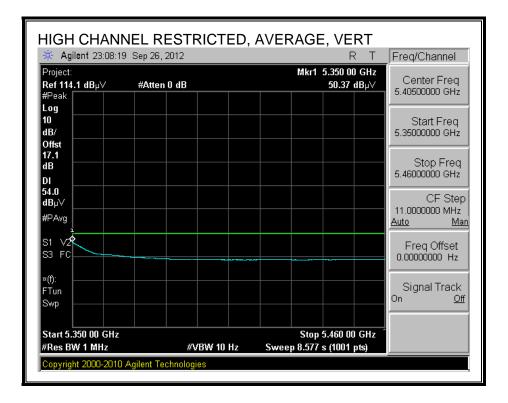
RESTRICTED BANDEDGE (HIGH CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

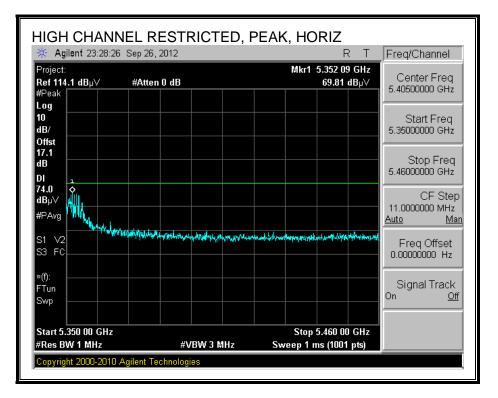
	orn 1- S/N: 671	18GHz 7 @3m	T144 M	nplifer ⁄liteq 30			Pre-am	plifer	26-40GH		Ho 5; ARA 18-26	orn > 180 GHz; S/N:1		•	Limit FCC 15.209
3'	quency Cat cable 2 able 228	2807700	┥┍━━	able 2		500	20' cal		807500		HPF		eject Filte	RB	<u>k Measurements</u> W=VBW=1MHz ge Measurements
f	Dist		Read Avg.	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim				IMHz ; VBW=10Hz
GHz	(m)	dBuV	dBuV	dB/m	dB	dB	dB	dB	1	dBuV/m		dBuV/m	dB	dB	(V/H)
0.52	260MHz 3.0	38.84	25.96	38.3	9.6	-35.8	0.0	0.0	51.0	38.1	74	54	-23.0	-15.9	Noise floor/V
0.52 fid Chai	3.0 mel 5300	38.57 MHz	26.10	38.3	9.6	-35.8	0.0	0.0	50.7	38.2	74	54	-23.3	-15.8	Noise floor/H
0.60 0.60	3.0 3.0	38.62 39.12	26.25 26.22	38.3 38.3	9.7 9.7	-35.7 -35.7	0.0	0.0 0.0	50.9 51.4	38.5 38.5	74 74	54 54	-23.1 -22.6	-15.5 -15.5	Noise floor/V Noise floor/H
igh Ch	5320MHz	5													
0.64 0.64	3.0	38.65 39.23	26.32 26.32	38.3 38.3	9.8 9.8	-35.7 -35.7	0.0	0.0 0.0	51.0 51.5	38.6 38.6	74 74	54 54	-23.0 -22.5	-15.4 -15.4	Noise floor/V Noise floor/H
lo other	emission	s were detect	ed above the sys	stems no	ise floo	r									
	-														
ev. 10.2	f Dist	Measurem Distance to Analyzer R Antenna Fa Cable Loss	eading actor	y		Amp D Corr Avg Peak HPF	Average	Correc Field S d Peal	et to 3 mete Strength @ c Field Stre	3 m		Pk Lim Avg Mar	Peak Fiel Margin vs	⁷ ield Strengt I Strength L . Average L . Peak Limit	imit imit

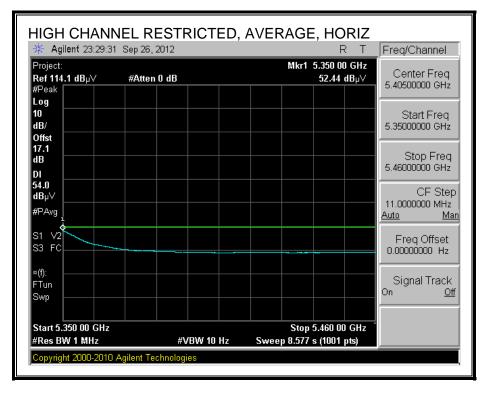
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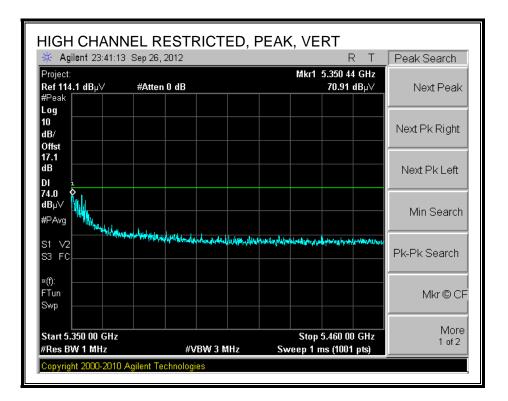
8.2.5. TX ABOVE 1 GHz 802.11n, HT20 IN THE 5.3 GHz BAND, CHAIN A

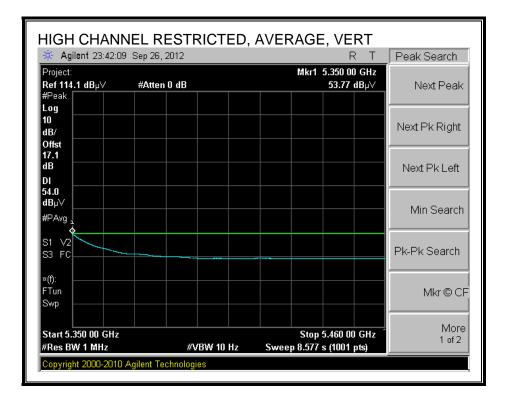
RESTRICTED BANDEDGE (HIGH CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

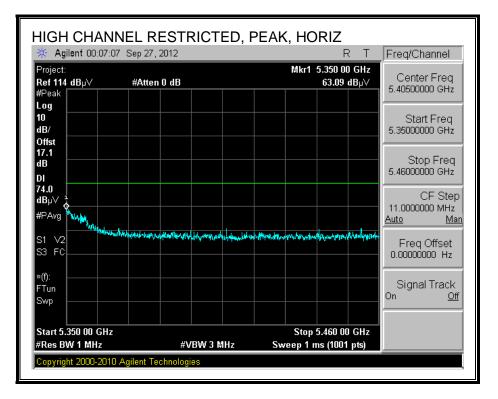
_	orn 1- S/N: 671	18GHz 7 @3m	Pre-ar	nplifer Aiteq 30			Pre-am	plifer	26-40GH		Ho 5; ARA 18-26	orn > 180 GHz; S/N:1		•	Limit FCC 15.209
3'	quency Cat cable 2 able 228	2807700		able 2		500	20' cal		807500		HPF		eject Filte	RB	<u>x Measurements</u> W=VBW=1MHz ge Measurements
f	Dist	,	Read Avg.	AF	CL	Amp	D Corr	Fltr	Peak	Avg	Pk Lim				1MHz ; VBW=10Hz Notes
GHz	(m) 260MHz	dBuV	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dBuV/m	dBuV/m	dB	dB	(V/H)
0.52 0.52	3.0 3.0	39.16 38.63	25.97 26.06	38.3 38.3	9.6 9.6	-35.8 -35.8	0.0	0.0 0.0	51.3 50.8	38.1 38.2	74 74	54 54	-22.7 -23.2	- <u>15.9</u> -15.8	Noise floor/V Noise floor/H
fid Chai	nnel 5300	MHz													
0.60 0.60	3.0	38.87 39.22	26.45 26.35	38.3 38.3	9.7 9.7	-35.7 -35.7	0.0	0.0 0.0	51.1 51.5	38.7 38.6	74 74	54 54	-22.9 -22.5	-15.3 -15.4	Noise floor/V Noise floor/H
igh Ch 0.64	5320MHz 3.0	38.82	26.22	38.3	9.8	-35.7	0.0	0.0	51.1	38.5	74	54	-22.9	-15.5	Noise floor/V
0.64	3.0	39.13	26.40	38.3	9.8	-35.7	0.0	0.0	51.4	38.7	74	54	-22.6	-15.3	Noise floor/H
o other	emission	s were detect	ed above the sys	 stems no	ise floo	r									
ev. 10.2	f Dist	Measurem Distance to Analyzer R Antenna Fa Cable Loss	eading actor	y		Amp D Corr Avg Peak HPF	Average	Correc Field S d Peal	ct to 3 mete Strength @ c Field Stre	3 m		Pk Lim Avg Mar	Peak Fiel Margin vs	⁷ ield Strengt d Strength L . Average L . Peak Limit	irnit irnit

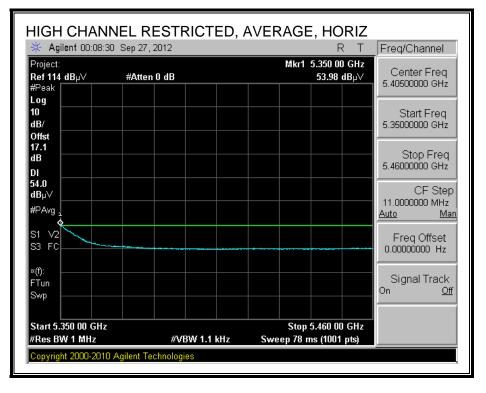
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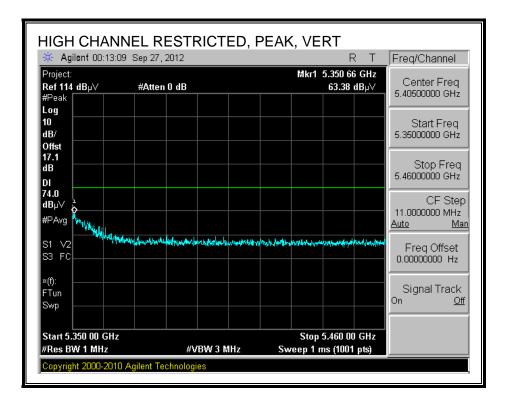
8.2.6. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.3 GHz BAND, CHAIN A

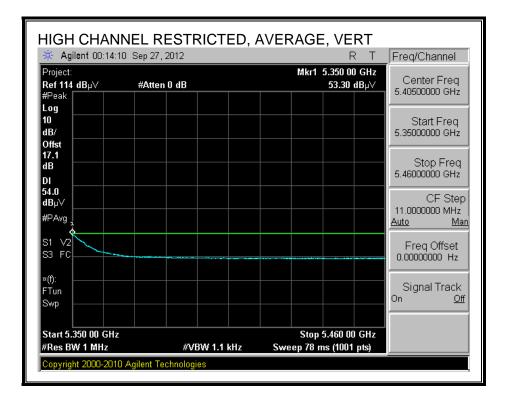
RESTRICTED BANDEDGE (HIGH CHANNEL)





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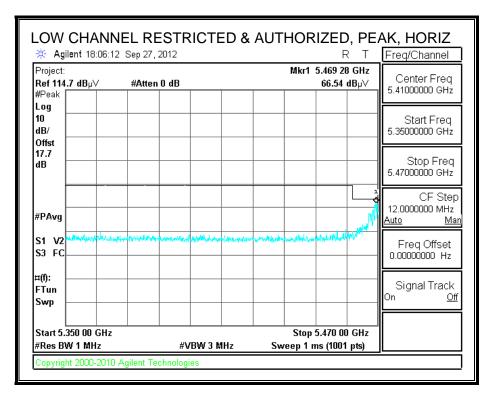
HARMONICS AND SPURIOUS EMISSIONS

T144 Miteq 3008A00931 v T125; ARA 18-28GHz; S/N:1007 v FCC 15.209 If Fequency Cables 3' cable 22807700 12' cable 22807600 Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2" FCC 15.209 I 12' cable 22807600 Colspan="2" Peak Measurements RBW=VBW=IMHz A registration of the colspan="2" Peak Measurements RBW=VBW=IMHz A registration of the colspan="2" Peak Measurements RBW=VBW=IMHz A registration of the colspan="2" Peak Measurements RBW=IMHz A registration of the colspan="2" Peak Measurements RBW=IMHz A registration of the colspan="2" Peak Measurements RBW=IMHz A registration of the colspan="2" Peak Measurements RBW=IMHz Average Measurements RBW=IMHz A registration of the colspan="2" Peak Measurements RBW=IMHz Peak Average Measurements RBW=IMHz A registration of the colspan="2" Peak Measurement Section of the colspan="2" O colspan="2" Average Field Strength Limit <th colsp<="" th=""></th>	
3' cable 22807700 12' cable 22807600 20' cable 22807500 10' cable 22807500 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/dB dB dB dB dB/dV/m dBuV/m dB/dV/m dB/	
GHz (m) dBuV dB/m dB dW/m dB dB dB (V/H) owch 5270 MHz 0.0 38.46 25.87 38.3 9.7 -35.7 0.0 0.0 50.6 38.0 74 54 -23.4 -16.0 Noise floor/V 0.54 3.0 38.77 25.60 38.3 9.7 -35.7 0.0 0.0 52.1 38.0 74 54 -23.4 -16.0 Noise floor/V 0.62 3.0 38.77 25.60 38.3 9.7 -35.7 0.0 0.0 50.8 38.1 74 54 -22.9 -16.1 Noise floor/V 0.62 3.0 38.76 25.82 38.3 9.7 -35.7 0.0 0.0 50.8 38.1	
ow Ch 5270MHz 0.54 38.46 25.87 38.3 9.7 -35.7 0.0 0.0 50.6 38.0 74 54 -23.4 -16.0 Noise floor/V 0.54 3.0 39.96 25.86 38.3 9.7 -35.7 0.0 0.0 52.1 38.0 74 54 -23.4 -16.0 Noise floor/V 0.54 3.0 39.96 25.86 38.3 9.7 -35.7 0.0 0.0 52.1 38.0 74 54 -21.9 -16.0 Noise floor/V 0.62 3.0 38.77 25.60 38.3 9.7 -35.7 0.0 0.0 51.1 37.9 74 54 -22.9 -16.1 Noise floor/V 0.62 3.0 38.56 25.82 38.3 9.7 -35.7 0.0 0.0 50.8 38.1 74 54 -23.2 -15.9 Noise floor/H 6 other emissions were detected above the systems noise floor	
0.54 3.0 39.96 25.86 38.3 9.7 -35.7 0.0 0.0 52.1 38.0 74 54 -21.9 -16.0 Noise floor/H igh Ch 5310MHz	
0.62 3.0 38.77 25.60 38.3 9.7 -35.7 0.0 0.0 51.1 37.9 74 54 -22.9 -16.1 Noise floor/V 0.62 3.0 38.56 25.82 38.3 9.7 -35.7 0.0 0.0 50.8 38.1 74 54 -22.9 -16.1 Noise floor/V 0 other emissions were detected above the systems noise floor <	
0.62 3.0 38.56 25.82 38.3 9.7 -35.7 0.0 0.0 50.8 38.1 74 54 -23.2 -15.9 Noise floor/H o other emissions were detected above the systems noise floor Image: Constraint of the systems noise floor Image: Consystems noise floor	
f Measurement Frequency Amp Preamp Gain Avg Lim Average Field Strength Limit pist Distance to Antenna D Corr Distance Correct to 3 meters Pk Lim Peak Field Strength Limit AF Antenna Factor Peak Calculated Peak Field Strength Pk Mar Margin vs. Peak Limit	
AF Antenna Factor Peak Calculated Peak Field Strength Pk Mar Margin vs. Peak Limit	

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8.2.7. TX ABOVE 1 GHz 802.11a IN THE 5.5 GHz BAND, CHAIN A

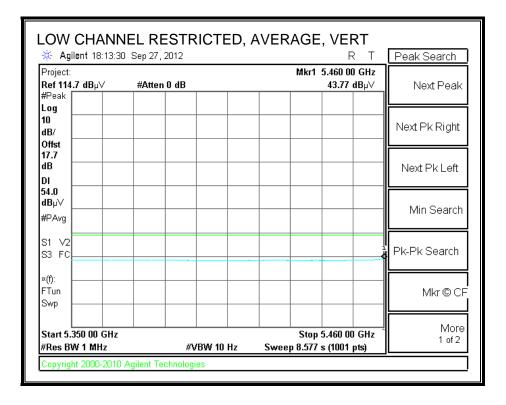
RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)



Agilent 18:07 Project:			Milet	5.460 00 GHz	Freq/Channel
Project. Ref 114.7 dB µ∨ #Peak	#Atten 0 dB			43.99 dBµ∀	Center Freq 5.40500000 GHz
Log 10 dB/ Offst					Start Freq 5.35000000 GHz
17.7 dB DI					Stop Freq 5.46000000 GHz
54.0 dBµ∀ #PAvg					CF Step 11.0000000 MHz <u>Auto Mar</u>
S1 V2 S3 FC				:	Freq Offset 0.00000000 Hz
×(f): FTun Swp					Signal Track On <u>Off</u>
Start 5.350 00 GH #Res BW 1 MHz	-	/ 10 Hz	Stop Sweep 8.577	5.460 00 GHz s (1001 pts)	

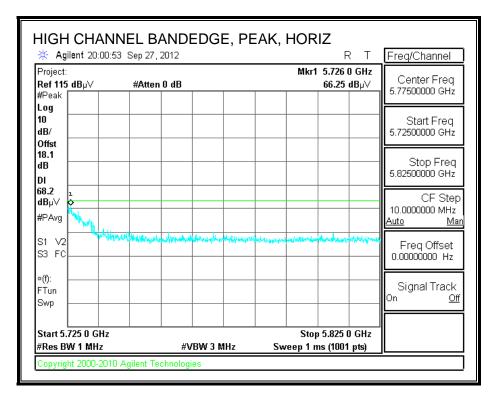
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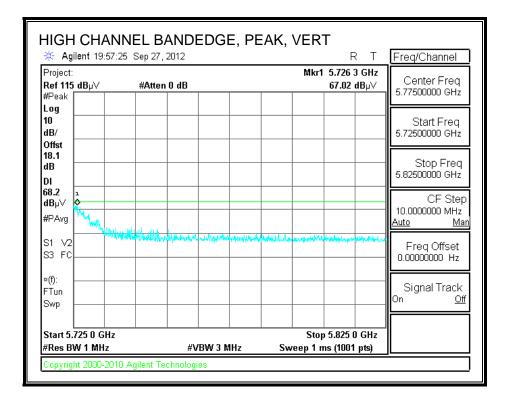
🔆 Agilent 18:12	:40 Sep 27, 2012			RT	Peak Search
Project: Ref 114.7 dBµ∨	#Atten 0 dB		Mkr1	5.469 16 GHz 65.37 dBµ∨	Next Peak
#Peak Log					
10 dB/					Next Pk Right
Offst 17.7 dB					Next Pk Left
#PAvg					Min Search
S1 V2 S3 FC	fan an a	reselledgemeeters watters	New following and the second	alden en linne by the first and	Pk-Pk Search
¤(f): FTun Swp					Mkr © Cl
Start 5.350 00 GH #Res BW 1 MHz	_	W 3 MHz	•	5.470 00 GHz ns (1001 pts)	More 1 of 2



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AUTHORIZED BANDEDGE (HIGH CHANNEL)





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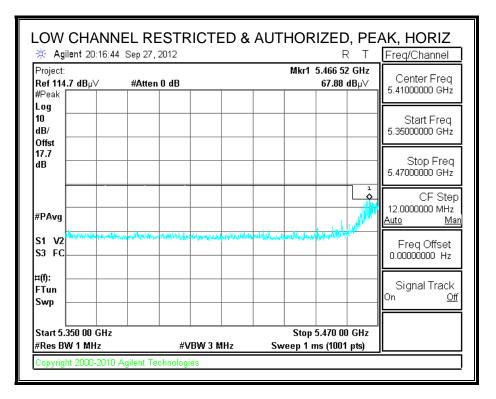
HARMONICS AND SPURIOUS EMISSIONS

Test Engr		Oliver S													
Date:	•	09/10/12	u												
Project #:	:	12U1454	5												
Company		Wistron													
Test Targ		FCC 15.4													
Mode Op	er:	5.5GHz,	Tx Con	tinuou	ısly, EU	T stand-a	lone								
	f	Measuren	ent Free	mencv	Amp	Preamp (Gain			Average	Field Stren	gth Limit			
	Dist	Distance				Distance		et to 3 me	ters		eld Strength				
	Read	Analyzer	Reading		Avg			trength @		Margin	vs. Average	Limit			
	AF	Antenna			Peak			Field Stre	ength	Margin	vs. Peak Lii	mit			
	CL	Cable Los	s		HPF	High Pas	s Filter	r							
f	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr.	Limit	Margin	Ant. Pol.	Det.	Ant.High	Table Angle	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB		dBuV/m	dB	V/H	P/A/QP	cm	Degree	
1a_Low															
1.000	3.0	33.3	38.4	10.1	-35.6	0.0	0.0	46.0	74.0	-28.0	V	Р	161.7	304.6	
1.000	<u>3.0</u> 3.0	23.5 35.5	<u>38.4</u> 38.4	10.1 10.1	-35.6 -35.6	0.0 0.0	0.0 0.0	36.3 48.2	54.0 74.0	-17.7 -25.8	V H	A P	161.7 151.3	<u>304.6</u> 159.2	
1.000	3.0	23.7	38.4	10.1	-35.6	0.0	0.0	36.5	54.0	-17.5	H	A	151.3	159.2	
1a Mid (Ch (5580	(MHz)								l					
1.160	3.0	33.8	38.5	10.2	-35.6	0.0	0.0	46.9	74.0	-27.1	H	Р	199.7	319.2	
1.160	3.0	22.9 34.4	38.5 38.5	10.2 10.2	-35.6 -35.6	0.0	0.0 0.0	36.0 47.5	54.0 74.0	-18.0 -26.5	H V	A P	199.7 197.2	319.2 117.5	
1.160	3.0	22.8	38.5	10.2	-35.6	0.0	0.0	35.9	54.0	-18.1	v	A	197.2	117.5	
1a High	çh (570	(MHz)													
1.400	3.0	33.6	38.7	10.4 10.4	-35.6	0.0	0.0	47.2	74.0	-26.8	V	P	200.0	213.1	
1.400	3.0	22.7 34.4	38.7 38.7	10.4 10.4	-35.6 -35.6	0.0 0.0	0.0	36.3 48.1	54.0 74.0	-17.7 -26.0	V H	A P	200.0 199.9	213.1 358.1	
1.400					-35.6	0.0	0.0	36.3	54.0	-17.7	H	Ā	199.9	358.1	
	3.0	22.7	38.7	10.4							· · · · · · · · · · · · · · · · · · ·				
		22.7	38.7	10.4						ļ	}				
1.400	3.0	22.7	38.7	10.4											
1.400 Rev. 4.1.2	3.0					he system	n nois	se floor					1		
1.400 Rev. 4.1.2	3.0	22.7				he syster	n nois	se floor.							
1.400 ev. 4.1.2	3.0					the system	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					the system	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					ihe syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he system	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he system	m nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
11.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
11.400 11.400 Rev. 4.1.2 Note: No	3.0					he syster	n nois	se floor.							
11.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
11.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							
1.400 Rev. 4.1.2	3.0					he syster	n nois	se floor.							

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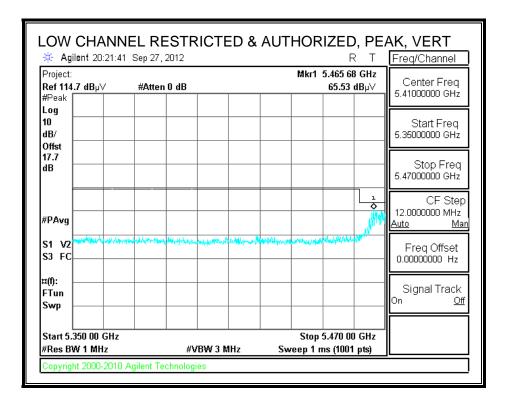
8.2.8. TX ABOVE 1 GHz 802.11n HT20 IN THE 5.5 GHz BAND, CHAIN A

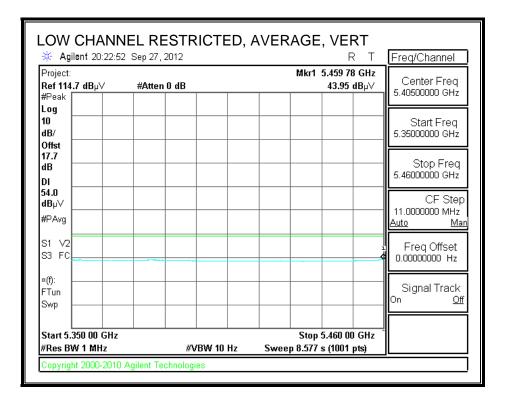
RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)



#Res BW 1 MHz		VBW 10 Hz	5top 5.4 Sweep 8.577 s (
Start 5.350 00 GHz			Stop 5 A	60 00 GHz	
Swp					
FTun					Signal Track
×(f):					
33 10				~	0.00000000 Hz
S1 V2 S3 FC					Freq Offset
Ŭ					
#PAvg					11.0000000 MHz Auto Ma
54.0 dBµ∀					CF Step
DI					3.4000000 0112
dB					Stop Freq 5.4600000 GHz
17.7					
dB/ Offst					5.35000000 GHz
10					Start Freq
Log					
Ref 114.7 dBµ∨ #Peak	#Atten 0 dB		4	4.89 dBµ∨	5.40500000 GHz
Project:				160 00 GHz	Center Freq
🔆 Agilent 20:17:	35 Sep 27, 2012			RT	Freq/Channel

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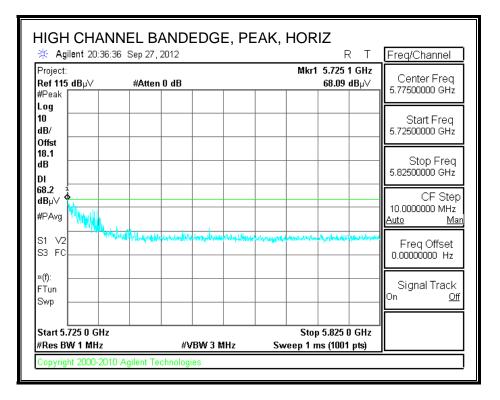


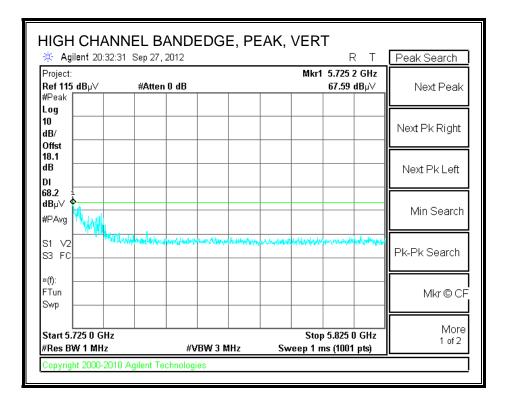


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AUTHORIZED BANDEDGE (HIGH CHANNEL)





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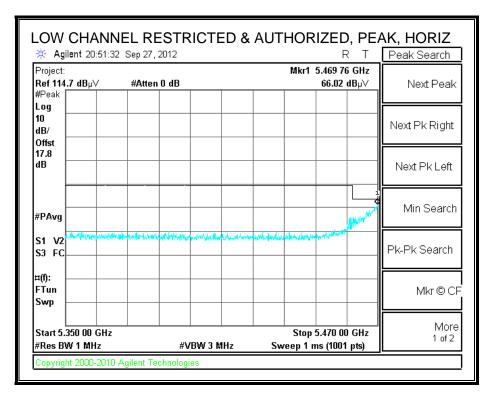
HARMONICS AND SPURIOUS EMISSIONS

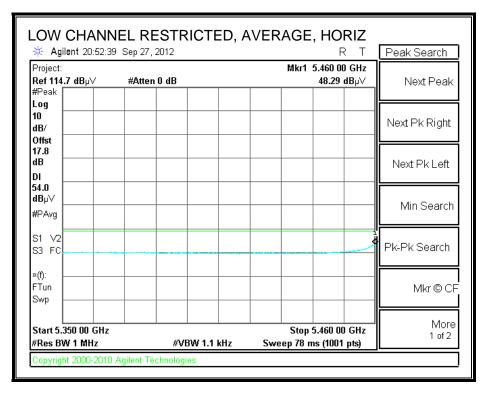
Test Engr: Date: Project #: Company:		Oliver S	u												
Project #:		09/10/12													
-		12U1454	5												
		Wistron													
Test Target:		FCC 15.4	407												
Mode Oper:		5.5GHz,	Tx Con	tinuou	ısly, EU	T stand-a	lone								
f		Measurem	ont Fro	money	Amp	Preamp (lain			Average	Field Stren;	ath I imit			
	Dist	Distance				Distance		t to 3 me	ters		ld Strength				
	Read	Analyzer			Avg			rength @			s. Average				
	AF	Antenna			Peak			Field Stre		•	/s. Peak Lir				
	L.	Cable Los			HPF	High Pas					I Cuk LII				
						-							1		
1	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr.		e –	Ant. Pol.	Det.	0	Table Angle	Notes
	(m)	dBuV	dB/m	dB	dB	dB	dB	dBu V/m	dBuV/m	dB	V/H	P/A/QP	cm	Degree	
1n HT20 Lo				10.4	25.6			47.6	= 1 0				1/10	02.4	
	3.0 3.0	34.8 22.4	38.7 38.4	10.4 10.1	-35.6 -35.6	0.0 0.0	0.0	47.6 35.2	74.0 54.0	-26.4 -18.8	H H	P A	164.2 164.2	92.4 92.4	
	3.0	34.3	38.4	10.1	-35.6	0.0	0.0	35.2 47.1	74.0	-10.0	V N	A P	175.2	0.2	
	3.0	22.1	38.4	10.1	-35.6	0.0	0.0	34.9	54.0	-19.1	v	A	175.2	0.2	*****
1n HT20 M															
	3.0	34.6	38.5	10.2	-35.6	0.0	0.0	47.7	74.0	-26.3	Н	Р	180.5	276.8	
1.160	3.0	22.8	38.5	10.2	-35.6	0.0	0.0	35.9	54.0	-18.1	Н	A	180.5	276.8	
	3.0	35.9	38.5	10.2	-35.6	0.0	0.0	49.0	74.0	-25.0	V	Р	199.7	79.1	
	3.0	22.7	38.5	10.2	-35.6	0.0	0.0	35.8	54.0	-18.2	V	A	199.7	79.1	
1n HT20 Hi															
	3.0	34.2	38.7	10.4	-35.6	0.0	0.0	47.9	74.0	-26.1	V	P	140.9	360.0	
	3.0	22.8	38.7 38.7	10.4 10.4	-35.6	0.0	0.0	36.4	54.0	-17.6	<u>V</u> H	A P	140.9	360.0	
	<u>3.0</u> 3.0	34.3 22.6	38.7	10.4	-35.6 -35.6	0.0	0.0	47.9 36.3	<u>74.0</u> 54.0	-26.1 -17.7	H H	A	162.7 162.7	<u>343.8</u> 343.8	
1.400	3.0	22.0	30.7	10.4	-35.0	0.0	0.0	30.3	54.0	-1/./	п	A	102.7	343.0	

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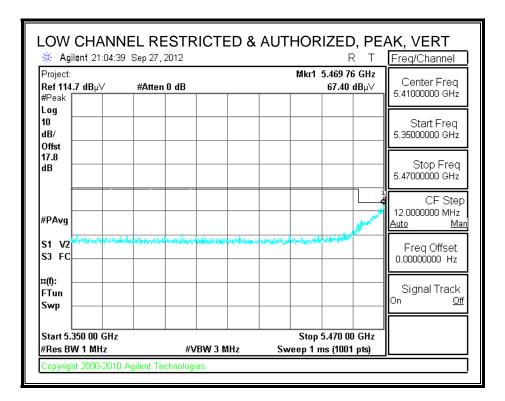
8.2.9. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.5 GHz BAND, CHAIN A

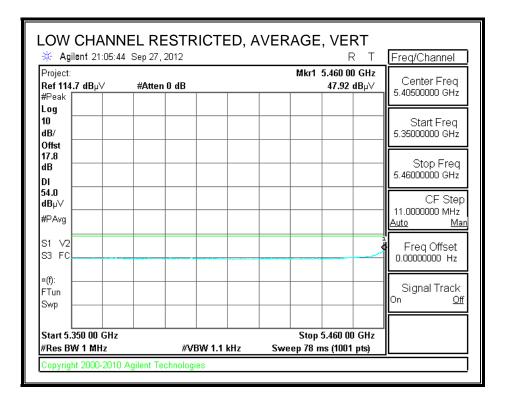
RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)





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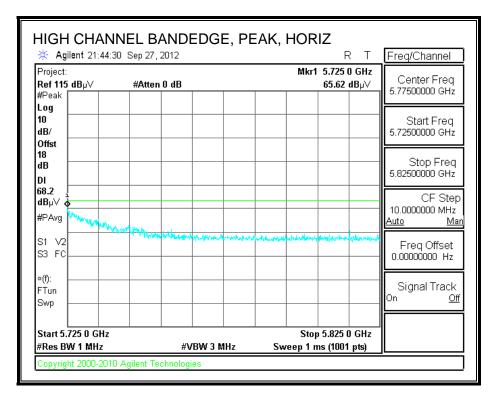


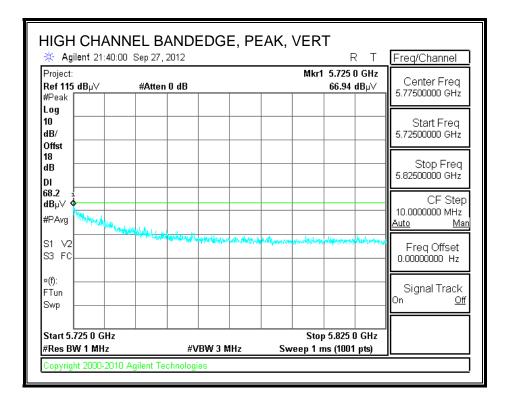


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AUTHORIZED BANDEDGE (HIGH CHANNEL)





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HARMONICS AND SPURIOUS EMISSIONS

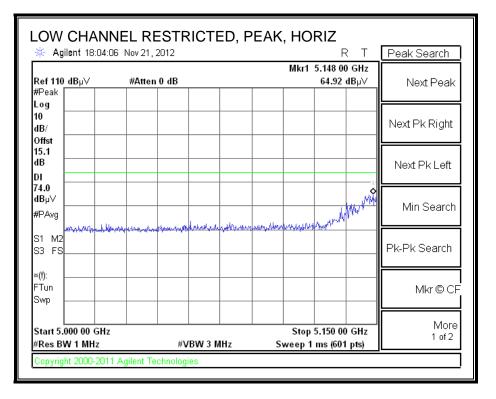
Test Engr Date: Project #: Company Test Targ Mode Op	: et:	Oliver S 09/10/12 12U1454 Wistron FCC 15. 5.5GHz,	5 407	tinuot	ısly, EU	T stand-a	lone								
	f Dist Read AF CL	Measuren Distance Analyzer Antenna Cable Los	to Anter Reading Factor	ina	1	0	Correc Field S d Peak	rength @ Field Stre	3 m	Peak Fie Margin v	Field Streng ld Strength /s. Average /s. Peak Lin	Limit Limit			
f	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr.	Limit	Margin	Ant. Pol.	Det.	Ant.High	Table Angle	Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	cm	Degree	
		n (5510MI													
11.020	3.0	32.9	38.4	10.1	-35.6	0.0	0.0	45.7	74.0	-28.3	Н	Р	200.0	281.1	
11.020	3.0	21.7	38.4	10.1	-35.6	0.0	0.0	34.5	54.0	-19.5	H	<u>A</u>	200.0	281.1	
11.020	3.0	33.2	38.4	10.1	-35.6	0.0	0.0	46.0	74.0	-28.0	V	Р	114.4	73.4	
11.020	3.0	21.9	38.4	10.1	-35.6	0.0	0.0	34.7	54.0	-19.3	V	<u>A</u>	114.4	73.4	
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	(5590MI	gan in the second second second							ļ					
11.180	3.0	34.0	38.5		-35.6	0.0	0.0	47.0	74.0	-27.0	H	Р	170.9	282.8	
11.180	3.0	22.3	38.5		-35.6	0.0	0.0	35.3	54.0	-18.7	H	<u>A</u>	170.9	282.8	
11.180	3.0	33.2	38.5	10.1	-35.6	0.0	0.0	46.2	74.0	-27.8	<u>V</u>	<u>P</u>	100.9	75.3	
11.180	3.0	22.3	38.5	10.1	-35.6	0.0	0.0	35.3	54.0	-18.7	V	A	100.9	75.3	
11 <u>111140</u> 11.340	3.0	h (5670M 33.6	38.7	10.4	-35.6	0.0	0.0	47.1	74.0	-26.9	v	Р	164.2	92.4	
11.340	3.0	22.8	38.7	10.4	-35.0 -35.6	0.0	0.0	47.1 36.3	74.0 54.0	-20.9 -17.7	V V	A	164.2	92.4 92.4	
11.340	3.0	34.1	38.7	10.4	-35.6	0.0	0.0	47.6	54.0 74.0	-17.7	и Н	A P	104.2	92.4	
11.340	3.0	22.7	38.7	10.4	-35.6	0.0	0.0	36.2	54.0	-20.4	н Н	 	100.5	9.3	
Rev. 4.1.2 Note: No		missions	® were de	tected	above t	i he syster	n nois	e floor.		8			1	<u> </u>	

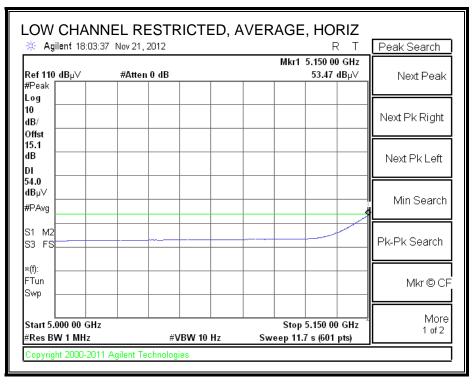
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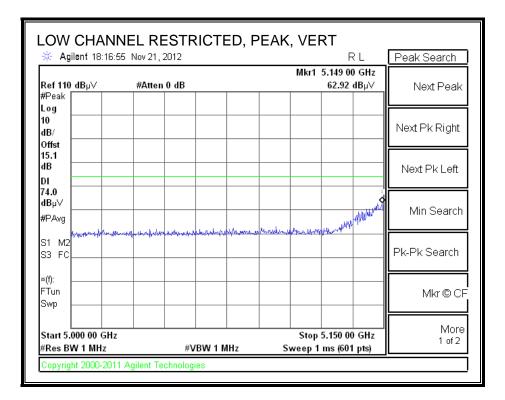
### 8.2.10. TX ABOVE 1 GHz 802.11n HT20 IN THE 5.2 GHz BAND, CHAIN B

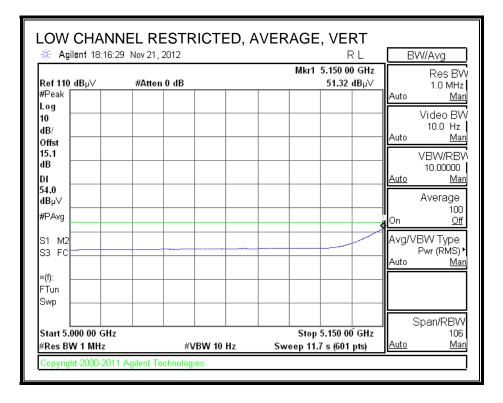
#### **RESTRICTED BANDEDGE (LOW CHANNEL)**





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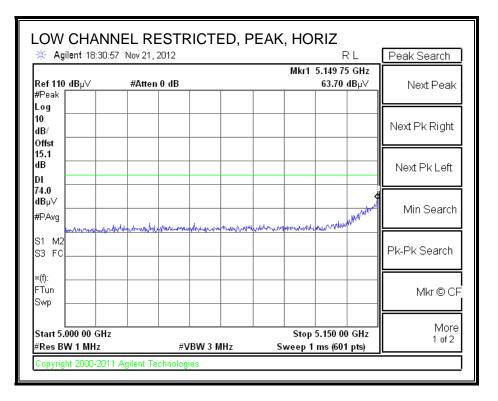


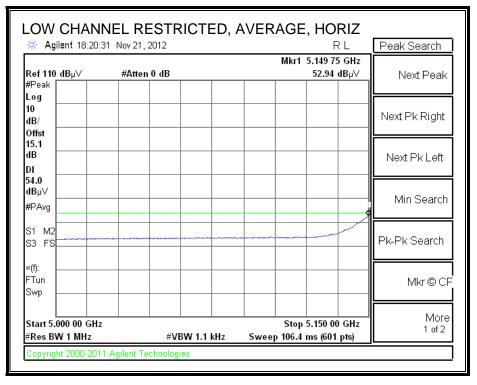


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## 8.3. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.2 GHz BAND, CHAIN B

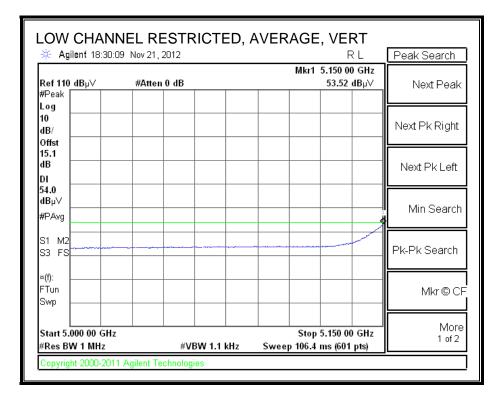
#### **RESTRICTED BANDEDGE (LOW CHANNEL)**





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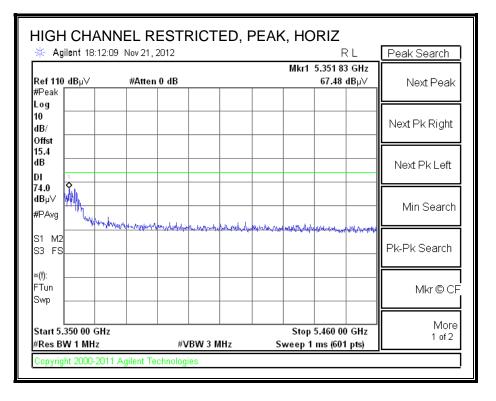
🔆 Agilent 18:21:0	05 Nov 21, 2012			RL	Peak Search
Ref 110 dBµ∀ #Peak	#Atten 0 dB		Mkr1 5.147 62.4	7 25 GHz 46 dBµ∨	Next Peak
Log 10 dB/ Offst					Next Pk Right
dB					Next Pk Left
74.0 dBµ∀ #PAvg				L. Martin Press	Min Search
S1 M2 S3 FC	ertye na perdon perdonation	the of the second s	had a start of the second		Pk-Pk Search
«(f): FTun Swp					Mkr © CF
Start 5.000 00 GHz #Res BW 1 MHz		3 MHz	Stop 5.150 Sweep 1 ms (		More 1 of 2



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## 8.3.1. TX ABOVE 1 GHz 802.11n, HT20 IN THE 5.3 GHz BAND, CHAIN B

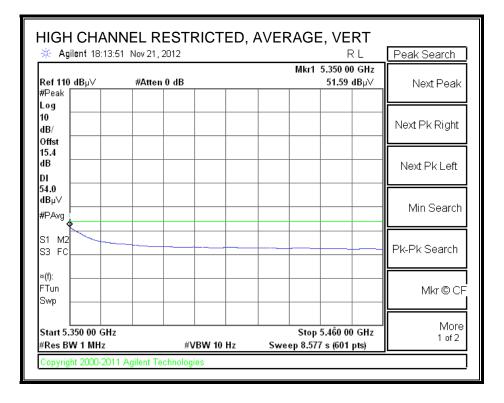
#### **RESTRICTED BANDEDGE (HIGH CHANNEL)**



🔆 Agilent 18:11	:36 Nov 21, 2012	RL	Peak Search
Ref 110 dBµ∨ #Peak	#Atten 0 dB	Mkr1 5.350 00 GHz 51.26 dBµ∀	Next Peak
Log 10 dB/			Next Pk Right
Offst 15.4 dB DI			Next Pk Left
54.0 dBµ∨ #PAvg			Min Search
S1 M2 S3 FC			Pk-Pk Search
×(f): FTun Swp			Mkr © Cf
Start 5.350 00 [°] GH #Res BW 1 MHz	z #VBW 10 H	Stop 5.460 00 GHz Iz Sweep 8.577 s (601 pts)	More 1 of 2

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🔆 Agilent 18:13:	13 Nov 21, 2012			RL	Peak Search
Ref 110 dBµ∀ #Peak	#Atten 0 dB		Mkr1 5.350 66.3	)55 GHz 28 dBµ∨	Next Peak
Log 10 dB/					Next Pk Right
Offst 15.4 dB					Next Pk Left
74.0 ∲ dBu∀ but					Min Search
S1 M2 S3 FS	wald wood and based to all the	shirt in the second	haya at gant har	hand the second s	Pk-Pk Search
≈(f): FTun Swp					Mkr © CF
Start 5.350 00 GHz #Res BW 1 MHz		/ 3 MHz	Stop 5.460 Sweep 1 ms (		More 1 of 2

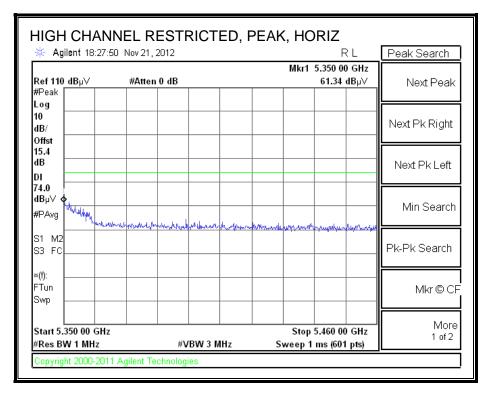


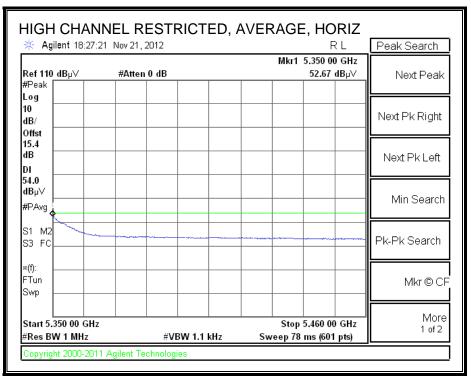
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## 8.3.2. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.3 GHz BAND, CHAIN B

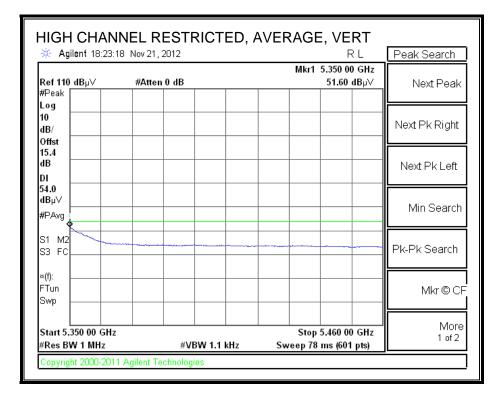
#### **RESTRICTED BANDEDGE (HIGH CHANNEL)**





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🔆 Agilent 18:23	:51 Nov 21, 2012		R	L P	eak Search
Ref 110 dBµ∨ #Peak	#Atten 0 dB		Mkr1 5.350 18 63.35 d		Next Peak
Log 10 dB/					ext Pk Right
Offst 15.4 dB					Next Pk Left
74.0 dBu∀ ∲					Min Search
S1 M2 S3 FC	University was preventioned and a second	Man Maryanan and	upper and a second and a second	Pł	-Pk Search
≈(f): FTun Swp					Mkr © Cf
Start 5.350 00 GH #Res BW 1 MHz		SW 3 MHz	Stop 5.460 00 Sweep 1 ms (601		More 1 of 2

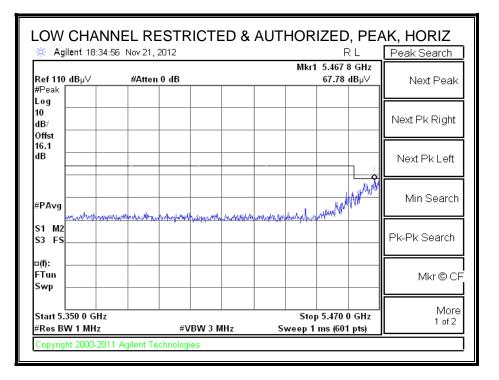


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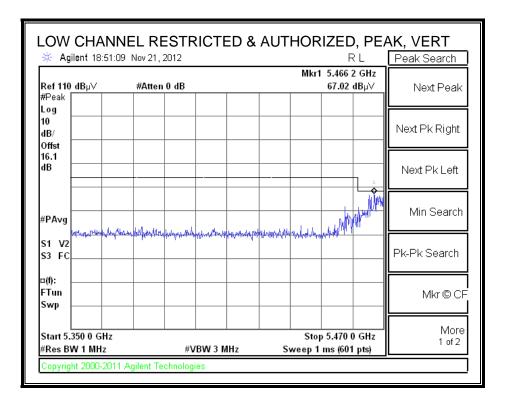
## 8.3.3. TX ABOVE 1 GHz 802.11n, HT20 IN THE 5.5 GHz BAND, CHAIN B

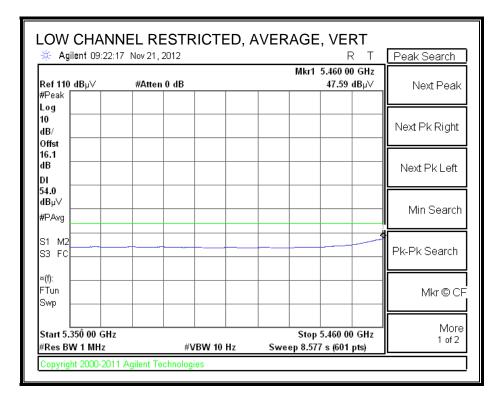
#### **RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)**



	1:45 Nov 21, 201	2		RT	Peak Search
Ref 110_dBµ∀	#Atten 0	IB	Mkr	I 5.460 00 GHz 49.26 dBµ∀	Next Peak
#Peak Log					
10					
dB/					Next Pk Right
Offst					
16.1 dB					Next Pk Left
DI					INEXLEK LEIL
54.0					
dBµ∨					Min Search
#PAvg					Iviiii Codiroin
S1 M2					}
S3 FC					Pk-Pk Search
×(f):					
FTun					Mkr © CF
Swp					
				5 400 00 011	More
Start 5.350 00 GH #Res BW 1 MHz	1Z	#VBW 10 Hz		p 5.460 00 GHz 77 s (601 pts)	1 of 2

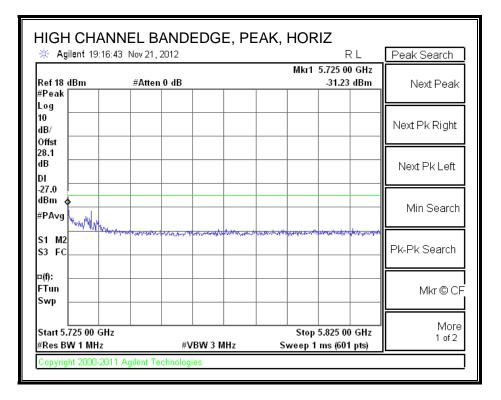
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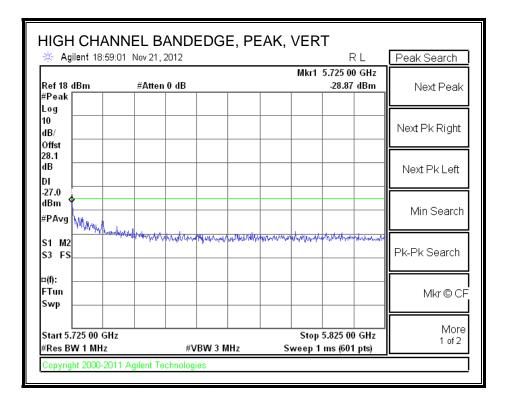




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#### **AUTHORIZED BANDEDGE (HIGH CHANNEL)**

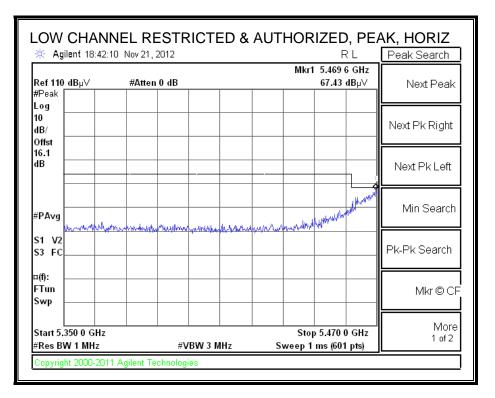


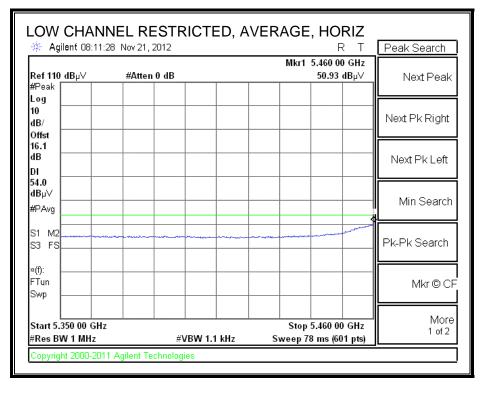


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## 8.3.4. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.5 GHz BAND, CHAIN B

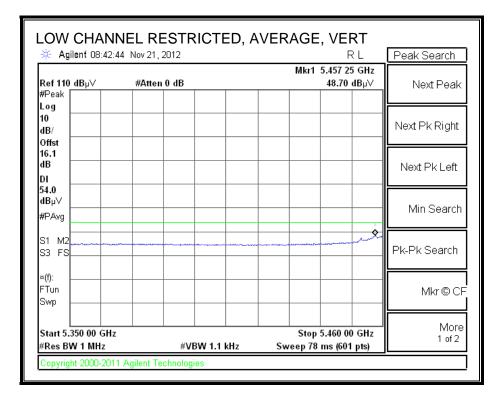
#### **RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)**





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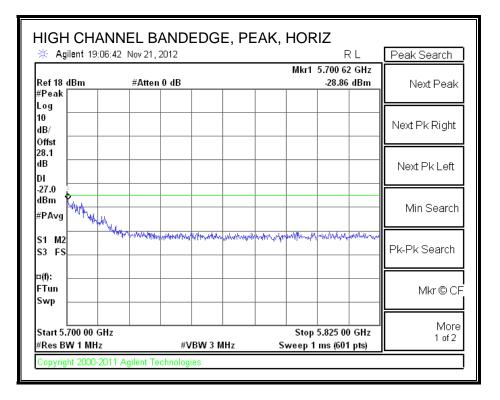
	NEL RESTRIC 04 Nov 21, 2012			RL	Peak Search
Ref 110 dBµ∨ #Peak	#Atten 0 dB			l69 0 GHz .51 dBµ∨	Next Peak
Log 10 dB/ Offst					Next Pk Right
dB				1	Next Pk Left
#PAvg				wind had what	Min Search
S1 V2 S3 FC	148444744444444444444444444444444444444	Wenter all the all the second se	Hunney Hole with Barry		Pk-Pk Search
¤(f): FTun Swp					Mkr © CF
Start 5.350 0 GHz #Res BW 1 MHz	#VBW	/ 3 MHz	Stop 5.4 Sweep 1 ms	70 0 GHz (601 pts)	More 1 of 2

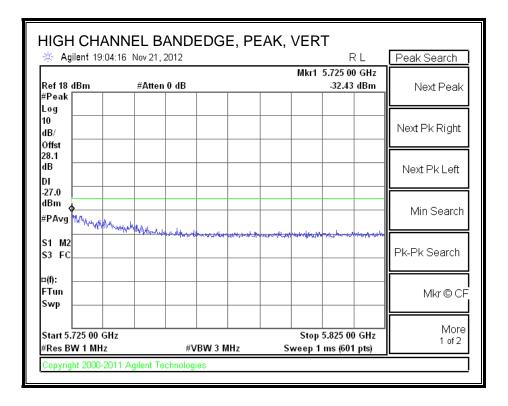


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#### **AUTHORIZED BANDEDGE (HIGH CHANNEL)**



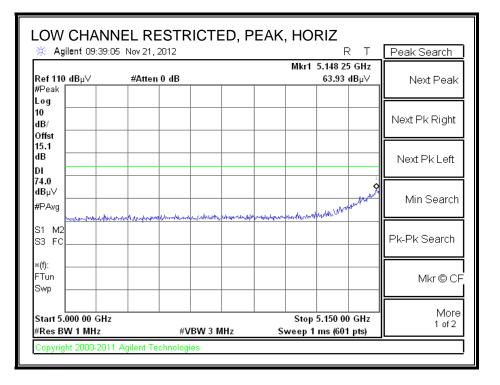


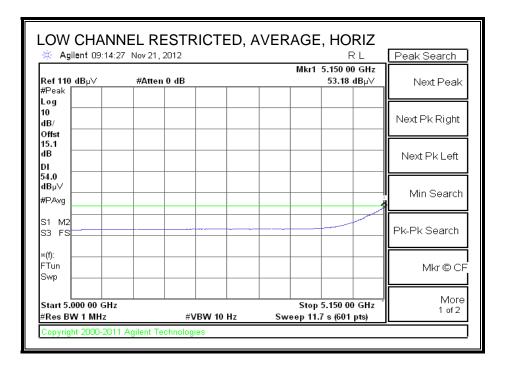
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# 8.3.5. TX ABOVE 1 GHz 802.11n HT20 IN THE 5.2 GHz BAND, CHAIN A+B (MIMO)

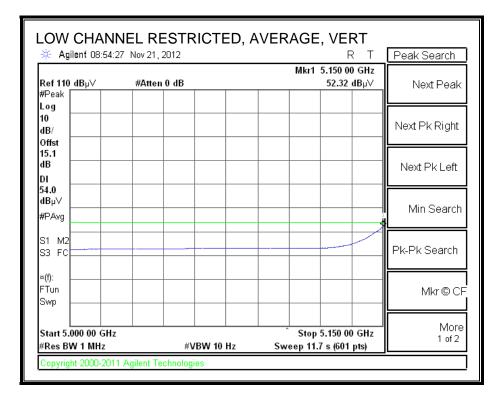
#### **RESTRICTED BANDEDGE (LOW CHANNEL)**





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🔆 Agilent 08:53:	55 Nov 21, 2012			RТ	Peak Search
Ref 110 dBµ∨ #Peak	#Atten 0 dB		Mkr1 5.149 62.69	25 GHz )dBµ∨	Next Peak
Log 10 dB/ Offst					Next Pk Right
dB					Next Pk Left
74.0 dBµ∨ #PAvg				uhlender Hill	Min Search
S1 M2 S3 FS	n	denne falselar, som for	Hussenhjøpstragslansødtræde th		Pk-Pk Search
≈(f): FTun Swp					Mkr © CF
Start 5.000 00 GHz #Res BW 1 MHz		W 3 MHz	Stop 5.150 Sweep 1 ms (6)		More 1 of 2



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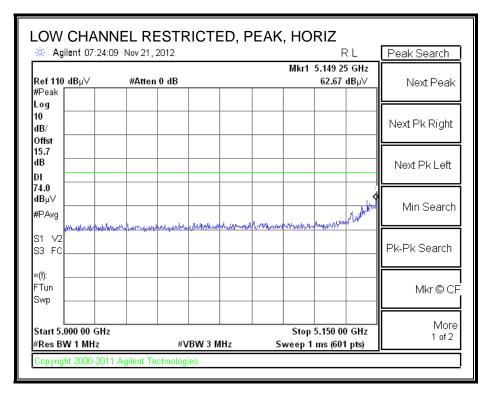
### HARMONICS AND SPURIOUS EMISSIONS

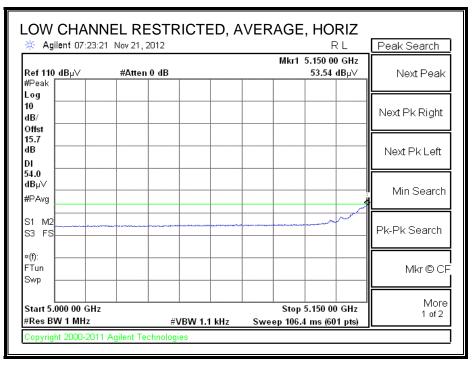
raze Field Stre							
raze Field Stre							
rapa Fiald Stea							
rapa Fiald Stea							
rage Field Stre							
rage Field Stre							
rage Field Stre							
rage Field Stre							
and a serie of the	ength Limit						
c Field Strengt	th Limit						
gin vs. Avera	ge Limit						
Antenna Factor Peak Calculated Peak Field Strength Margin vs. Peak Limit							
gin Ant. Po		Notes					
B V/H	P/A/QP						
.l H	P						
.3 V .8 V	P A						
.o V	<b>n</b>						
.6 .3	H V	H A					

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# 8.3.6. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.2 GHz BAND, CHAIN A+B (MIMO)

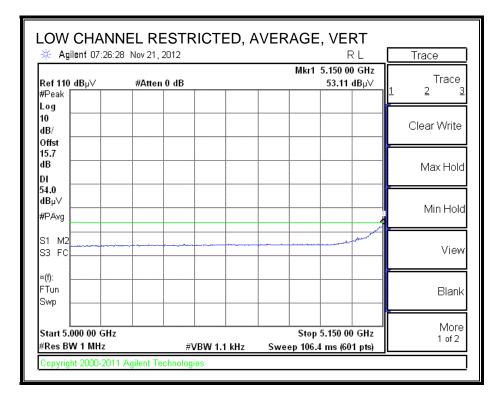
#### **RESTRICTED BANDEDGE (LOW CHANNEL)**





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🔆 Agilent 07:27	':16 Nov 21, 2012		R	L Peak Search
Ref110 dBµ∨ #Peak	#Atten 0 dB		Mkr1 5.148 25 62.89 d	
Log 10 dB/ Offst				Next Pk Right
dB				Next Pk Left
74.0 dBµ∨ #PAvg				Min Search
S1 M2 S3 FC	handrahan di katalah ka	(hadrey) or an or other a blog	unan and a second and	Pk-Pk Search
×(f): FTun Swp				Mkr © C
Start 5.000 00 GH #Res BW 1 MHz	-	V 3 MHz	Stop 5.150 00 Sweep 1 ms (601	



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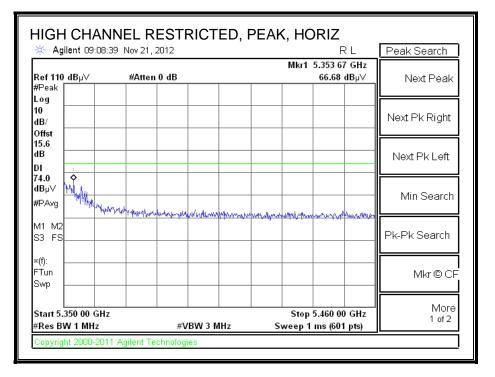
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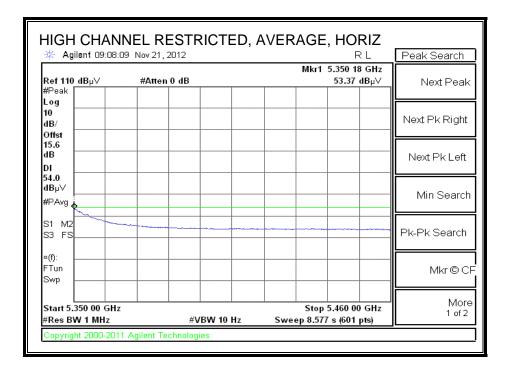
#### HARMONICS AND SPURIOUS EMISSIONS

		Measurer tification		s, Frei	mont 5n	n Chamb	er						
Test Engr		Chin Pa	-										
Date:		11/21/12											
Project # Company		12U1454 Wistron											
Test Target:		FCC 15.											
Mode Op		5.2GHz,		40									
	f	Measurer	nant Fra		Amo	Preamp (	Cain			A	Field Stren	rth T innit	
	I Dist	Distance		• •	-	Distance		ct to 3 ma	ters	_	ld Strength	-	
		Analyzer			Avg			trength @			/s. Average		
	AF	Antenna	-		-	Calculate				-	/s. Peak Lir		
	CL	Cable Lo	55		HPF	High Pas	s Filter	r		_			
f	Dist			CL		D Corr		Corr.			Ant. Pol.		Notes
GHz	(m)	dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
Mid Ch,					~ ~ ~						••		
15.690 15.690	3.0 3.0	38.2 25.6			-32.3 -32.3	0.0	0.0	57.1 44.5	74.0 54.0	-16.9 -9.5	V V	P	
15.690	3.0	37.1			-32.3		0.0		54.0 74.0	-9.5	H	A P	
15.690	3.0	25.3			-32.3		0.0	• • • • • • • • • • • • • • • • • • • •	54.0	-9.8		Ā	
Rev. 4.1.2	7												
			were de	tected	ahove i	the system	m noi:	e floor					
Note: No	other e	missions	nere ue			me syster	in non	SC 11001.					

# 8.3.7. TX ABOVE 1 GHz 802.11n, HT20 IN THE 5.3 GHz BAND, CHAIN A+B (MIMO)

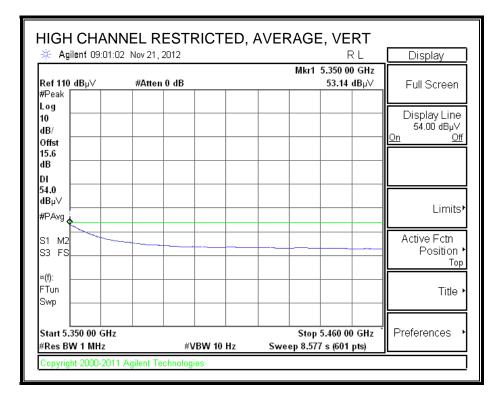
#### **RESTRICTED BANDEDGE (HIGH CHANNEL)**





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🔆 Agilent 09:01	:36 Nov 21, 2012			RL	Peak Search
Ref 110 dBµ∨ #Peak	#Atten 0 dB		Mkr1 5.352 64.0	02 GHz 4 dBµ∨	Next Peak
Log 10 dB/ Offst					Next Pk Right
dB					Next Pk Left
74.0 dBµ∨ #PAvg	W. Markelland Markeleten Markel				Min Search
S1 M2 S3 FS		har gala Marana and an		aparangan ng ba	Pk-Pk Search
×(f): FTun Swp					Mkr © CF
Start 5.350 00 GH #Res BW 1 MHz		V 3 MHz	Stop 5.460 Sweep 1 ms (6		More 1 of 2



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### HARMONICS AND SPURIOUS EMISSIONS

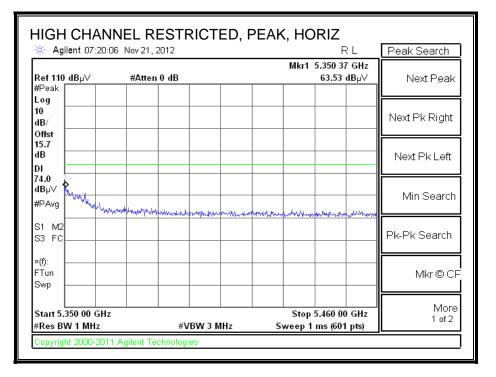
Test Engr: Date: Project #: Company: Test Target: Mode Oper:		rtification Services, Fremont 5m Chamber Chin Pang 11/21/12 12U14545 Wistron FCC 15.407 5.3GHz, 2TX, HT20 mode											
	f Dist Read AF CL	Measuren Distance Analyzer Antenna Cable Los	to Anter Reading Factor	nna	D Corr Avg	Preamp ( Distance Average Calculate High Pas	Corre Field S d Peak	trength @ r Field Stre	3 m	Peak Fie Margin v	Field Stren; ld Strength rs. Average rs. Peak Lir	Limit Limit	
f		Read		CL dB	•	D Corr		:			Ant. Pol.		Notes
GHz	(m)		dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
Mid Ch, 5 10.600	5300MH 3.0	z 34.3	38.1	9.7	-33.9	0.0	0.0	48.2	74.0	-25.8	v	P	
10.600	3.0	34.3 24.6	38.1		-33.9		0.0		74.0 54.0	-25.8			
15.900	3.0	43.0	&		-32.2		0.0		54.0 74.0	-15.5	V V	A P	
15.900	3.0	30.8	&		-32.2		0.0		54.0	-4.8	v	A	
10.600	3.0	35.5	38.1		-33.9		0.0		74.0	-24.6		P	
10.600	3.0	24.3	38.1		-33.9		0.0		54.0	-15.8	H	Ā	
15.900	3.0	28.8	¢		-32.2		0.0	· • • • • • • • • • • • • • • • • • • •	74.0	-26.8	H	P	
15.900	3.0	28.4	37.9	12.7	-32.2	0.0	0.0	46.8	54.0	-7.2	H	Α	
Rev. 4.1.2 Note: No		missions	were de	tected	above 1	he syster	m noi	se floor.					

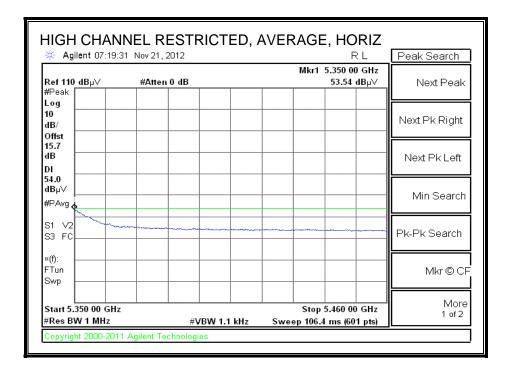
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# 8.3.8. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.3 GHz BAND, CHAIN A+B (MIMO)

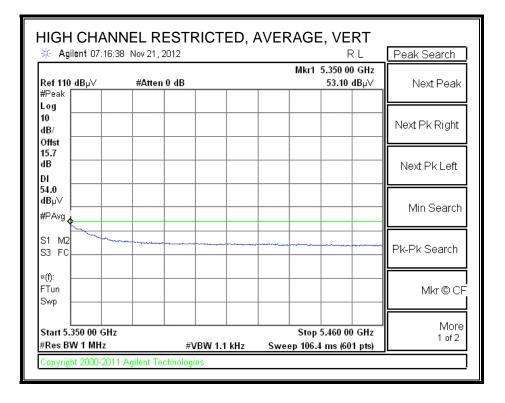
#### **RESTRICTED BANDEDGE (HIGH CHANNEL)**





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🔆 Agilent 07:13:	05 Nov 21, 2012			RL	Peak Search
Ref 110 dBµ∨ #Peak	#Atten 0 dB			851 65 GHz 2.29 dBµ∨	Next Peak
Log 10 dB/					Next Pk Right
Offst 15.7 dB					Next Pk Left
DI 74.0 dBµ∨ #PAvg	Mellin Maria		dan		Min Search
S1 M2 S3 FC		Ninderford (Net Liferound and South		<u>kilarybulyobulyofbani</u>	Pk-Pk Search
×(f): FTun Swp					Mkr © Cl
Start 5.350 00 GHz #Res BW 1 MHz		W 3 MHz	Stop 5.4 Sweep 1 m	60 00 GHz	More 1 of 2



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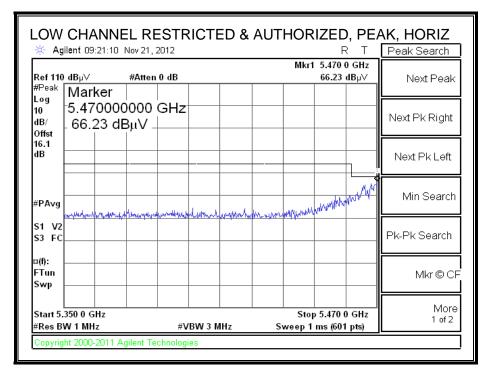
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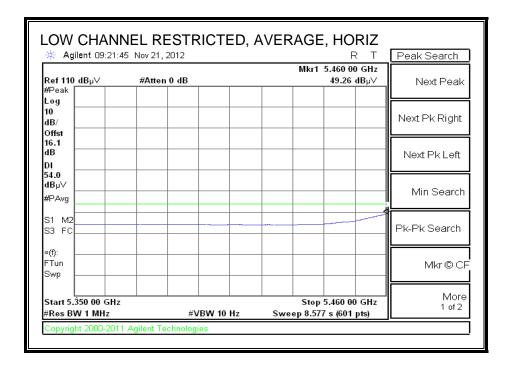
#### HARMONICS AND SPURIOUS EMISSIONS

Test Engr: Date: Project #: Company: Test Target: Mode Oper:		Chin Pang 11/21/12 12U14545 Wistron FCC 15.407 5.3GHz, 2TX, HT40											
	f Dist Read AF CL	Analyzer Reading			D Corr Avg	Preamp Gain Distance Correct to 3 meters Average Field Strength @ 3 m Calculated Peak Field Strength High Pass Filter				Average Field Strength Limit Peak Field Strength Limit Margin vs. Average Limit Margin vs. Peak Limit			
f		Read		CL	-	: :					Ant. Pol.		Notes
GHz Mid Ch. <del>(</del>		dBuV	dB/m	dB	dB	dB	dB	dBuV/m	dBuV/m	dB	V/H	P/A/QP	
Mid Ch, : 15.810	3.0		38.2	12.6	-32.2	0.0	0.0	54.8	74.0	-19.2	н	P	
15.810	3.0	24.0			-32.2		0.0	· • • • • • • • • • • • • • • • • • • •	54.0	-11.4	H	A	
15.810	3.0	37.8	·		-32.2		0.0	·	74.0	-17.6	V	P	
15.810	3.0	24.9			-32.2		0.0	43.5	54.0	-10.5	V	A	
Rev. 4.1.2 Note: No		missions	were de	tected	above t	the system	n nois	se floor.					

# 8.3.9. TX ABOVE 1 GHz 802.11n, HT20 IN THE 5.5 GHz BAND, CHAIN A+B (MIMO)

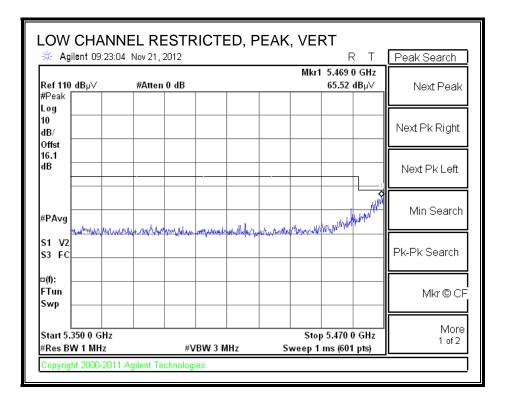
## **RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)**

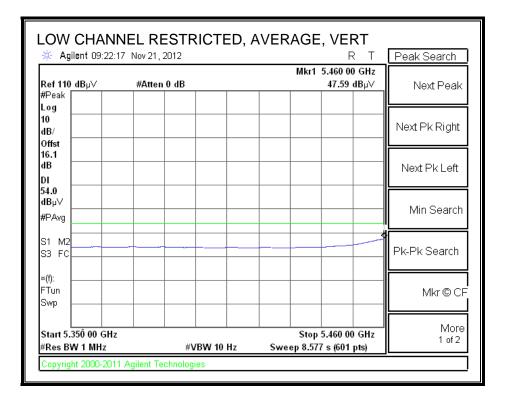




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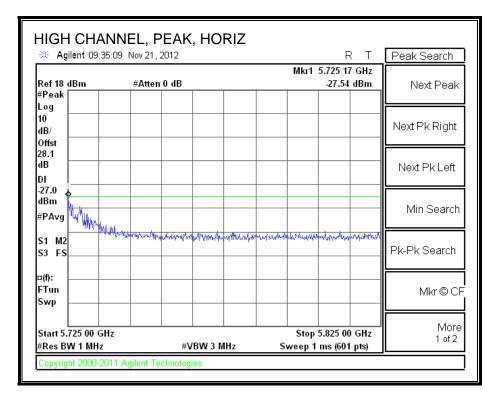


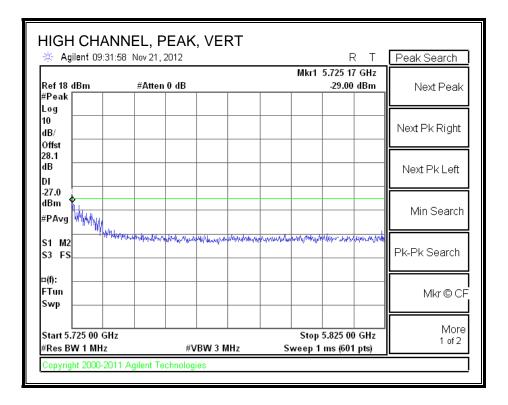


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#### **AUTHORIZED BANDEDGE (HIGH CHANNEL)**





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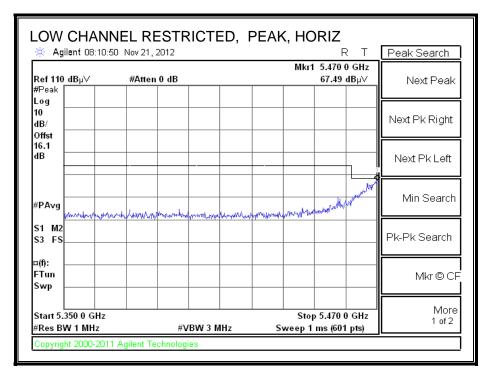
# HARMONICS AND SPURIOUS EMISSIONS

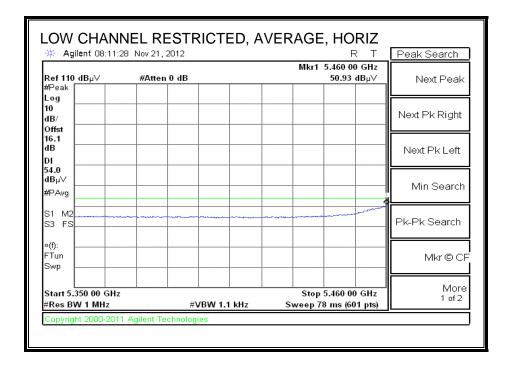
-		Measuren		P		<b>C</b> 1 1								
Complia	ice Cer	tification	Service	s, frei	nont 51	n Chamb	er							
Test Engr		Chin Pa	ng											
Date:		11/26/12												
Project #		12U14545 Wistron FCC 15.407												
Company														
Test Targ														
Mode Op	er:	5.6GHz,	5.6GHz, 2TX, HT20 mode											
	f	Measurement Frequency Amp Preamp Gain Average Field Strength Lin							gth Limit					
	Dist	Distance				Distance Correct to 3 meters Average Field Strength @ 3 m				Peak Field Strength Limit Margin vs. Average Limit				
	Read	Analyzer	_		Avg									
	AF	Antenna	Factor			Peak Calculated Peak Field Strength N					rs. Peak Lir	nit		
	CL	Cable Los	18		HPF	High Pas	s Filter	r						
f	Dist	Read	AF	CL	Amp	D Corr	Fltr	Corr	Limit	Margin	Ant. Pol.	Det.	Notes	
GHz	(m)	dBuV			dB	dB			dBuV/m		V/H	P/A/QP		
Mid Ch, i	5580MH	z												
11.160	3.0	34.7	38.5	10.2	-33.3	0.0	0.0	50.1	74.0	-23.9	H	P		
11.160	3.0	23.6			-33.3		0.0		54.0	- <b>15.0</b>	H	Α		
11.160	3.0	33.9		\$	-33.3	·	0.0		74.0	-24.7	V	P		
11.160	3.0	23.2	38.5	10.2	-33.3	0.0	0.0	38.6	54.0	-15.4	v	A		
D (11	-	1						1						
Rev. 4.1.2		missions			-									
		missions	were de	recred	anove	rne syster	n nor	se moor.						

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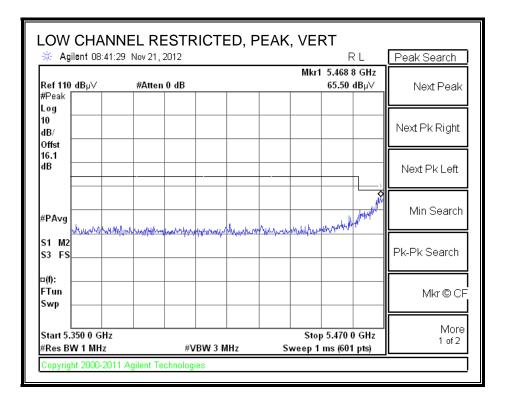
# 8.3.10. TX ABOVE 1 GHz 802.11n HT40 IN THE 5.5 GHz BAND, CHAIN A+B (MIMO)

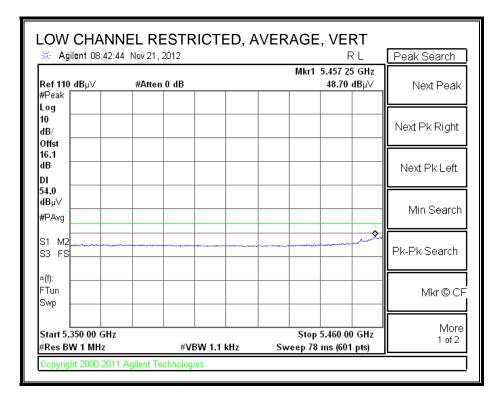
# **RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)**





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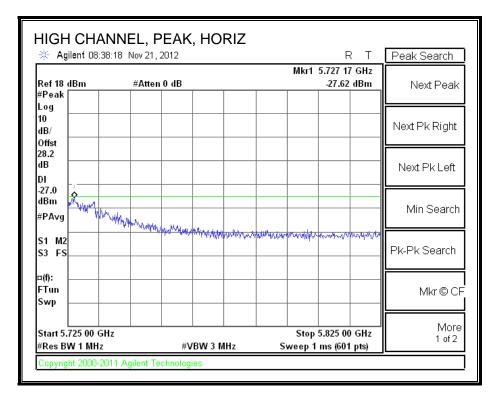


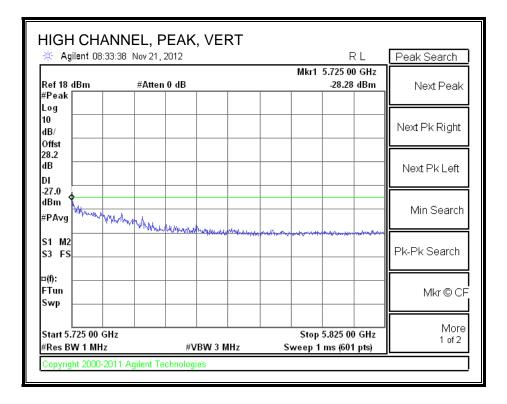


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#### **AUTHORIZED BANDEDGE (HIGH CHANNEL)**





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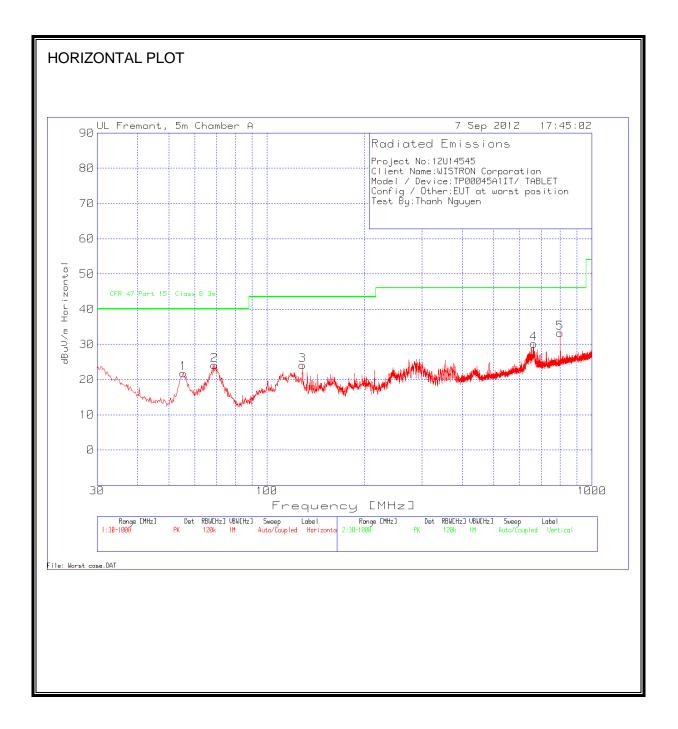
# HARMONICS AND SPURIOUS EMISSIONS

Test Engr:       Chin Pang         Date:       11/26/12         Project #:       12U14545         Company:       Wistron         Test Target:       FCC 15.407         Mode Oper:       5.6GHz, 2TX, HT40         f       Measurement Frequency Amp       Preamp Gain         Dist       Distance to Antenna       D Corr         Dist       Distance to Antenna       D Corr         AF       Antenna Factor       Peak         CL       Cable Loss       HPF         HPF       High Pass Filter         f       Dist       Read         AF       Antenna Factor       Peak         CL       Cable Loss       HPF         High Pass Filter       Margin vs. Peak Limit         f       Dist       Read         AF       Antenna Factor       Peak         CL       Cable Loss       HPF       High Pass Filter         f       Dist       Read       AF       CL         Mid Ch, 5590MHz       Id       Id       Id       Id	
Project #:       12U14545         Company:       Wistron         Test Target:       FCC 15.407         Mode Oper:       5.6GHz, 2TX, HT40         f       Measurement Frequency Amp       Preamp Gain       Average Field Strength Limit         Dist       Distance to Antenna       D Corr       Distance Correct to 3 meters       Peak Field Strength Limit         Read       Analyzer Reading       Avg       Average Field Strength @ 3 m       Margin vs. Average Limit         AF       Antenna Factor       Peak       Calculated Peak Field Strength       Margin vs. Peak Limit         CL       Cable Loss       HPF       High Pass Filter       Margin Ant. Pol.       Det.         f       Dist       Read       AF       CL       Amp       D Corr       Fltr       Corr.       Limit       Margin       Ant. Pol.       Det.         f       Dist       Read       AF       CL       Amp       dB       dB       dB       U/m dBuV/m dBuV/m       dB       V/H       P/A/QP	
Company:       Wistron         Test Target:       FCC 15.407         Mode Oper:       5.6GHz, 2TX, HT40         f       Measurement Frequency Amp       Preamp Gain       Average Field Strength Limit         Dist       Distance to Antenna       D Corr       Distance Correct to 3 meters       Peak Field Strength Limit         Read       Analyzer Reading       Avg       Average Field Strength @ 3 m       Margin vs. Average Limit         AF       Antenna Factor       Peak       Calculated Peak Field Strength       Margin vs. Peak Limit         CL       Cable Loss       HPF       High Pass Filter       Margin Ant. Pol.       Det.         f       Dist       Read       AF       CL       Amp       dB       dB       dB       dB dB       Margin K	
Test Target:       FCC 15.407         Mode Oper:       5.6GHz, 2TX, HT40         f       Measurement Frequency Amp       Preamp Gain       Average Field Strength Limit         Dist       Distance to Antenna       D Corr       Distance Correct to 3 meters       Peak Field Strength Limit         Read       Analyzer Reading       Avg       Average Field Strength @ 3 m       Margin vs. Average Limit         AF       Antenna Factor       Peak       Calculated Peak Field Strength       Margin vs. Peak Limit         CL       Cable Loss       HPF       High Pass Filter       Margin vs. Peak Limit         f       Dist       Read       AF       CL       Amp       D Corr       Fltr       Corr.       Limit       Margin       Ant. Pol.       Det.         GHz       (m)       dBuV       dB/m       dB       dB       dB       dB       U/m dBuV/m       U/H       V/H       P/A/QP	
Mode Oper:       5.6GHz, 2TX, HT40         f       Measurement Frequency Amp       Preamp Gain       Average Field Strength Limit         Dist       Distance to Antenna       D Corr       Distance Correct to 3 meters       Peak Field Strength Limit         Read       Analyzer Reading       Avg       Average Field Strength @ 3 m       Margin vs. Average Limit         AF       Antenna Factor       Peak       Calculated Peak Field Strength       Margin vs. Peak Limit         CL       Cable Loss       HPF       High Pass Filter       Corr.       Limit       Margin Ant. Pol.       Det.         f       Dist       Read       AF       CL       Amp       D Corr       Fltr       Corr.       Limit       Margin Ant. Pol.       Det.         GHz       (m)       dBuV       dB/m       dB       dB       dB       dB uV/m       dB uV/m       dB       V/H       P/A/QP	
f       Measurement Frequency Amp       Preamp Gain       Average Field Strength Limit         Dist       Distance to Antenna       D Corr       Distance Correct to 3 meters       Peak Field Strength Limit         Read       Analyzer Reading       Avg       Average Field Strength @ 3 m       Margin vs. Average Limit         AF       Antenna Factor       Peak       Calculated Peak Field Strength       Margin vs. Peak Limit         CL       Cable Loss       HPF       High Pass Filter       Margin vs. Peak Limit         f       Dist       Read       AF       CL       Amp       D Corr       Fltr       Corr.       Limit       Margin       Ant. Pol.       Det.         GHz       (m)       dBuV       dB/m       dB       dB       dB       dB       U/m       dB       V/H       P/A/QP	
Dist     Distance to Antenna Read     D Corr     Distance Correct to 3 meters Avg     Peak Field Strength Limit Margin vs. Average Limit       AF     Antenna Factor CL     Peak     Calculated Peak Field Strength @ 3 m     Margin vs. Average Limit       f     Dist     Read (m)     AF     CL     Amp dB     D Corr     Fltr     Corr.     Limit     Margin vs. Peak Limit       f     Dist     Read     AF     CL     Amp dB     D Corr     Fltr     Corr.     Limit     Margin Ant. Pol.     Det.	
Dist     Distance to Antenna     D Corr     Distance Correct to 3 meters     Peak Field Strength Limit       Read     Analyzer Reading     Avg     Average Field Strength @ 3 m     Margin vs. Average Limit       AF     Antenna Factor     Peak     Calculated Peak Field Strength     Margin vs. Peak Limit       CL     Cable Loss     HPF     High Pass Filter     Margin vs. Peak Limit       f     Dist     Read     AF     CL     Amp     D Corr     Fltr     Corr.     Limit     Margin     Ant. Pol.     Det.       GHz     (m)     dBuV     dB/m     dB     dB     dB     dBuV/m     dBuV/m     dB     V/H     P/A/QP	
AF     Antenna Factor     Peak     Calculated Peak Field Strength     Margin vs. Peak Limit       CL     Cable Loss     HPF     High Pass Filter       f     Dist     Read     AF     CL     Amp     D Corr     Fltr     Corr.     Limit     Margin     Ant. Pol.     Det.       GHz     (m)     dBuV     dB/m     dB     dB     dB     dB     dB     u	
CL     Cable Loss     HPF     High Pass Filter       f     Dist     Read     AF     CL     Amp     D Corr     Fltr     Corr.     Limit     Margin     Ant. Pol.     Det.       GHz     (m)     dBuV     dB/m     dB     dB     dB     dBuV/m     dBuV/m     dB     V/H     P/A/QP	
f     Dist     Read     AF     CL     Amp     D Corr     Fltr     Corr.     Limit     Margin     Ant. Pol.     Det.       GHz     (m)     dBuV     dB/m     dB     dB     dB     dBuV/m     dBuV/m     dB     V/H     P/A/QP	
GHz (m) dBuV dB/m dB dB dB dB dB dBuV/m dBuV/m dB V/H P/A/QP	
	Notes
Mid Ch. 5590MHz	
11.180 3.0 35.2 38.5 10.2 -33.2 0.0 0.0 50.7 74.0 -23.3 V P	
11.180         3.0         23.1         38.5         10.2         -33.2         0.0         0.0         38.6         54.0         -15.4         V         A           11.180         3.0         35.5         38.5         10.2         -33.2         0.0         0.0         51.0         74.0         -23.0         H         P	
11.180         3.0         35.5         38.5         10.2         -33.2         0.0         0.0         51.0         74.0         -23.0         H         P           11.180         3.0         23.0         38.5         10.2         -33.2         0.0         0.0         38.5         54.0         -15.5         H         A	
Rev. 4.1.2.7	

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# 9. WORST-CASE BELOW 1 GHz

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

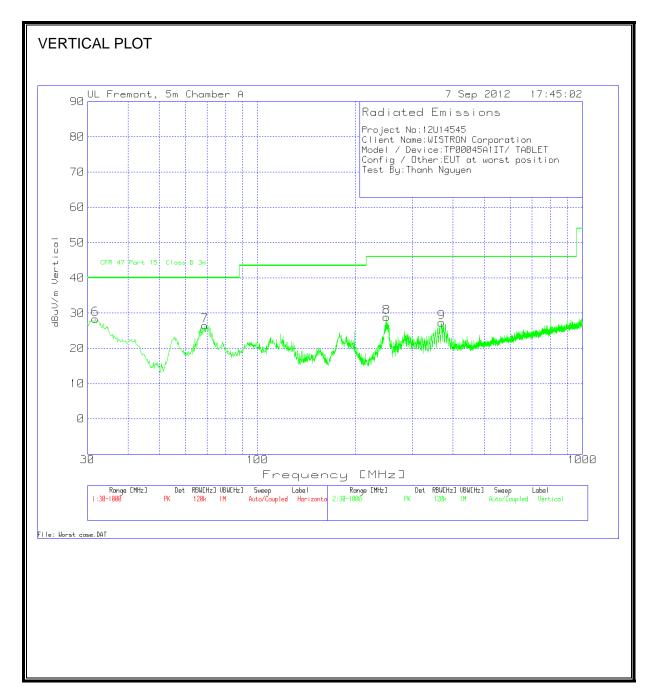


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HORIZON	JTAL DA	TA							
Project No:	:12U14545								
<b>Client Nam</b>	e:WISTRO	N Corporat	tion						
Model / De	vice:TP000	)45A1IT/ T/	ABLET						
Config / Ot	her:EUT at	worst pos	ition						
Test By:Tha	inh Nguyer	n							
Horizontal Test Freq. MHz		Detector	Pre-Amp Gain [dB] + Cable			Part 15	Margin dB	Height cm	Polarity V/H
			Loss dB			Limit			
55.3937			-27.3						Horz
68.9628	43.37	РК	-27.2	8	24.17	40	-15.83	400	Horz
128.8609	37.06	РК	-26.7	13.7	24.06	43.5	-19.44		Horz
662.1283	34.07	PK	-23.5	19.6	30.17	46	-15.83	100	Horz
799.952	35.59	РК	-23.3	21	33.29	46	-12.71	200	Horz

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# SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)



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VERTICA	VERTICAL DATA											
Project No:	12U14545											
Client Nam	e:WISTRO	N Corporat	tion									
Model / De	vice:TP000	)45A1IT/ T/	ABLET									
Config / Otl	Config / Other:EUT at worst position											
Test By:Tha	inh Nguyer	a										
Vertical 30	- 1000MHz	<u> </u>	<u> </u>									
	Meter Reading dB(µV/m)		Pre-Amp Gain [dB] + Cable Loss dB	Factor	Reading	Part 15			Polarity V/H			
31.7446	35.88	PK	-27.5	20	28.38	40	-11.62	100	Vert			
68.9628	45.7	PK	-27.2	8	26.5	40	-13.5	100	Vert			
249.6263	43.24	PK	-25.9	11.5	28.84	46	-17.16	200	Vert			
369.4225	37.52	РК	-25.4	15.2	27.32	46	-18.68	100	Vert			

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# **10. 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

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

## **RESULTS**

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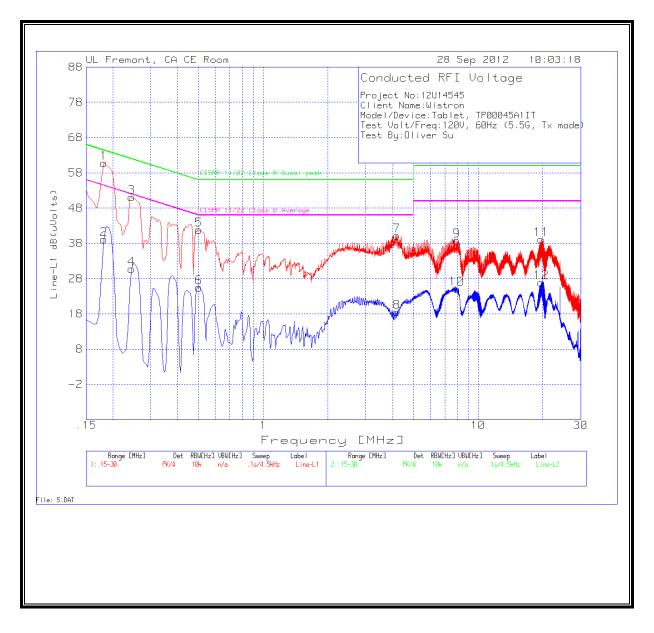
#### **<u>6 WORST EMISSIONS</u>**

Project No:	12U14545								
Client Nam									
Model/Dev			1IT						
Test Volt/F		-							
Test By:Oliv	•	(0.00)	in meacy						
Test by.on	verbu								
Line-L1.15									
- 30MHz									
5011112								CISPR	
			T24 IL	LC Cables		CISPR 11/22		11/22	
Test	Meter		L1.TXT	1&3.TXT		Class B		Class B	
Frequency	Reading	Detector	(dB)	(dB)	dB(uVolts)	Quasi-peak	Margin	Average	Margin
0.1815	60.7	PK	0.1	0	60.8	64.4	-3.6	-	-
0.1815	39.02	Av	0.1	0	39.12		5.0	54.4	-15.28
0.1815	51.06	PK	0.1	0	51.16	61.9	-10.74		-13.20
0.2445	30.71	Av	0.1	0	30.81	- 01.9	-10.74	51.9	-21.09
0.2445			0.1	0	41.83	56		51.9	-21.09
	41.73	PK		0			-14.17	-	-
0.501	25.38	Av	0.1	1	25.48	-	-	46	-20.52
4.191	39.97	PK	0.1	0.1	40.17	56	-15.83	-	-
4.191	18.35	Av	0.1	0.1	18.55	-	-	46	-27.45
7.9485	38.6	PK	0.1	0.1	38.8	60	-21.2	-	-
7.9485	24.87	Av	0.1	0.1	25.07	-	-	50	-24.93
19.716	38.69	PK	0.3	0.2	39.19	60	-20.81	-	-
19.716	26.36	Av	0.3	0.2	26.86	-	-	50	-23.14
Line-L2 .15									
- 30MHz									
0.1815	56.69	РК	0.1	0	56.79	64.4	-7.61		
0.1815	35.61	Av	0.1	0	35.71	-	-7.01	54.4	-18.69
0.1815	48.21	PK	0.1	0	48.31	61.9	-13.59	54.4	-10.09
0.2445	28.54	Av	0.1	0	28.64	-	-	51.9	-23.26
0.492	42.56	PK	0.1	0	42.66	56.1	-13.44	-	-
0.492	26.63		0.1	0	26.73	50.1	-13.44	46.1	-19.37
4.344	40.46	Av PK	0.1	0.1	40.66	56	-15.34	40.1	-13.31
4.344	22.58	Av	0.1	0.1	22.78	-	-15.54	46	-23.22
4.344 7.9575	40.08	PK	0.1	0.1	40.28	- 60	-19.72	- 40	-23.22
							-13.12		
7.9575 19.797	25.7	Av DK	0.1	0.1	25.9	- 60	- דד רכ	50	-24.1
19.797 19.797	36.73	PK	0.3	0.2	37.23	60	-22.77	-	-
19.797	24.85	Av	0.3	0.2	25.35	-	-	50	-24.65
PK - Peak d	etector								
Av - Avera		or							
		•							

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# LINE 1 RESULTS



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# LINE 2 RESULTS

