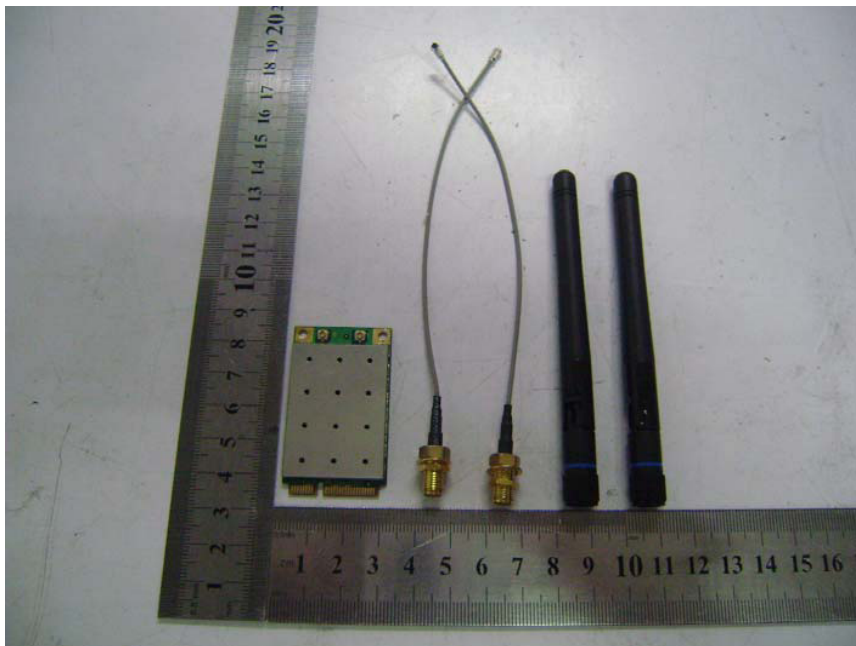


Complex Systems Pte Ltd

Wireless-A/B/G/N Network Mini PCIe Adapter

Model: WLE200NX

November 11, 2010
Report No.: 08U11572-6B
(This report supersedes NONE)



Modifications made to the product : None

This Test Report is Issued Under the Authority of:

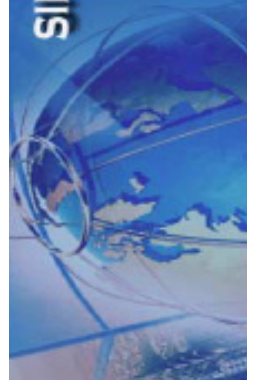
<i>Andy Hao</i>	<i>Jackson Chen</i>
Andy Hao Compliance Engineer	Jackson Chen Technical Manager

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Test result presented in this test report is applicable to the representative sample only.

RF Test Report

TO: EN 300 328 V1.7.1

SIEMIC, INC.
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Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



In addition to [testing](#) and [certification](#), SIEMIC provides initial design reviews and [compliance management](#) through out a project. Our extensive experience with [China](#), [Asia Pacific](#), [North America](#), [European](#), and [international](#) compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the [global markets](#).

Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC , RF/Wireless , Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless , Telecom
Taiwan	BSMI , NCC , NIST	EMC, RF, Telecom , Safety
Hong Kong	OFTA , NIST	RF/Wireless ,Telecom
Australia	NATA, NIST	EMC, RF, Telecom , Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, NIST	EMC, RF, Telecom , Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC , RF , Telecom
Canada	IC FCB , NIST	EMC , RF , Telecom
Singapore	iDA, NIST	EMC , RF , Telecom

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4	MODIFICATION	7

2 Executive Summary & EUT information

The purpose of this test programme was to demonstrate compliance of the Compex Systems Pte Ltd , Wireless-A/B/G/N Network Mini PCIe Adapter, and model: WLE200NX against the current Stipulated Standards. The Wireless-A/B/G/N Network Mini PCIe Adapterhas demonstrated compliance with the EN 300 328 V1.7.1.

EUT Information

EUT	Please see attachment
Description	
Model No	WLE200NX
Input Power	DC 3.3V
Classification	
Per Stipulated	Spread Spectrum System/Device
Test Standard	

3 TECHNICAL DETAILS

Purpose	Compliance testing of WIFI Module with stipulated standard
Applicant / Client	Compex Systems Pte Ltd 135 Joo Seng Road, #08-01 PM Industrial Building Singapore 368363
Manufacturer	Compex Systems Pte Ltd 135 Joo Seng Road, #08-01 PM Industrial Building Singapore 368363
Laboratory performing the tests	SIEMIC Nanjing (China) Laboratories NO.2-1,Longcang Dadao, Yuhua Economic Development Zone, Nanjing, China Tel:+86(25)86730128/86730129 Fax:+86(25)86730127 Email:info@siemic.com
Test report reference number	08U11572-6B
Date EUT received	September 09, 2010
Standard applied	EN 300 328 V1.7.1
Dates of test (from – to)	September 09, 2010 to November 08, 2010
No of Units:	#2
Equipment Category:	DTS
Trade Name:	COMPEX
Model :	WLE200NX
RF Operating Frequency (ies)	2412 ~ 2472 MHz,2422~2462MHz,5180~5240MHz,5190 ~ 5230MHz,5260~5320MHz, 5270 ~ 5310MHz,5500~5700MHz, 5510 ~ 5670MHz
Modulation:	DSSS/OFDM

4 MODIFICATION

NONE

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Description Wireless-A/B/G/N Network Mini PCIe Adapter compliance with IEEE 802.11a/b/g/n, communicate with other WLAN device

Model No WLE200NX

Input Power DC 3.3V

5.2. MAXIMUM OUTPUT POWER

The highest conducted output power under normal environmental conditions in each mode is as follows:

With 0dBi or less antenna gain

Frequency Band (MHz)	Mode	Total Power (dBm)	Total Power (mW)
2412 - 2472	802.11b	19.55	90.2
2412 - 2472	802.11g	Same as 802.11n HT20 data	
2412 - 2472	802.11n HT20	19.60	91.2
2422 - 2462	802.11n HT40	19.52	89.5

With 3.62dBi antenna gain

Frequency Band (MHz)	Mode	Total Power (dBm)	Total Power (mW)
2412 - 2472	802.11b	15.86	38.5
2412 - 2472	802.11g	Same as 802.11n HT20 data	
2412 - 2472	802.11n HT20	15.98	39.6
2422 - 2462	802.11n HT40	16.03	40.1

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

At the highest power setting the 2x2 configuration utilizes a set of PIFA antennas with maximum gain of 0 dBi.

At lower power settings the 2x2 configuration utilizes a set of PIFA antennas with maximum gain of 3.62 dBi from 2400 – 2483.5 MHz, 4.63 dBi from 5150 – 5350 MHz, 5.56 dBi from 5250 – 5350 MHz, 5.34 dBi from 5470 – 5725 MHz.

5.4. OUTPUT POWER WITH OTHER ANTENNA GAINS

OUTPUT POWER UNDER NORMAL ENVIRONMENTAL CONDITIONS WITH ANTENNA GAINS BETWEEN 0 dBi AND 3.62 dBi

802.11b MODE

Channels 1-13 (2412 - 2472 MHz)
Average Conducted Power
= (19.48 dBm - Antenna Assembly Gain)

802.11g and 802.11n HT20 MODES

Channel 1 (2412 MHz)
Average Conducted Power
= (15.51 dBm - Antenna Assembly Gain) or 12.27 dBm, whichever is higher

Channels 2-12 (2417 - 2467 MHz)
Average Conducted Power
= (19.60 dBm - Antenna Assembly Gain)

Channel 13 (2472 MHz)
Average Conducted Power
= (14.39 dBm - Antenna Assembly Gain) or 11.55 dBm, whichever is higher

802.11n HT40 MODE

Channel 3 (2422 MHz)
Average Conducted Power
= (17.63 dBm - Antenna Assembly Gain) or 15.33 dBm, whichever is higher

Channels 4-10 (2427 - 2457 MHz)
Average Conducted Power
= (19.52 dBm - Antenna Assembly Gain) or 16.03 dBm, whichever is higher

Channel 11 (2462 MHz)
Average Conducted Power
= (16.41 dBm - Antenna Assembly Gain) or 13.94 dBm, whichever is higher

5.5. SOFTWARE AND FIRMWARE

The test utility and driver software used during testing was Art ANWI 1.4 and Devlib Revision 0.6 Build #18 Art_11n.

5.6. WORST-CASE CONFIGURATIONS

The 2x2 configuration was used for all testing in this report.

Both FEM1 and FEM2 boards were evaluated on conducted and radiated emissions tests to find the worst case.

The worst-case data rates are determined to be as follows for each mode, based on the investigations by measuring the average power, peak power and PPSD across all the data rates, bandwidths, modulations and spatial stream modes.

The worst-case data rate for each mode is determined as follows, it is based on preliminary tests on the chipset which is utilized on this radio device.

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.

All final tests in the 802.11n HT20 mode were made at MCS1.

All final tests in the 802.11n HT40 mode were made at MCS0.

It was determined that 802.11g mode data can be compliant as the 802.11n MIMO HT20 data.

For RF radiated and conducted spurious emissions, all tests were performed on FEM1 board.

For RF conducted emissions excepted spurious emissions, all tests were performed on FEM2 board.

All tests were performed with the highest output power setting, and where applicable to calculations, an antenna gain of 0 dBi.

For antenna gains between 0 dBi and the maximum possible gain at lower power settings, as documented above, EIRP, PSD and Frequency Range tests were performed at normal environmental conditions, and EIRP and Frequency Range tests were also performed at the worst-case environmental conditions from the highest power testing.

Preliminary test results demonstrate that the cabinet radiation shows only insignificant changes as a function of power level, over the range of power levels documented in this report. Final radiated and conducted spurious emissions were measured with the power set to the highest setting.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST			
Description	Manufacturer	Model	Serial Number
Laptop	IBM	ThinkPad T42	ZZ-27001
AC Adapter	IBM	02K6749	11S02K6749Z122OM2436ST

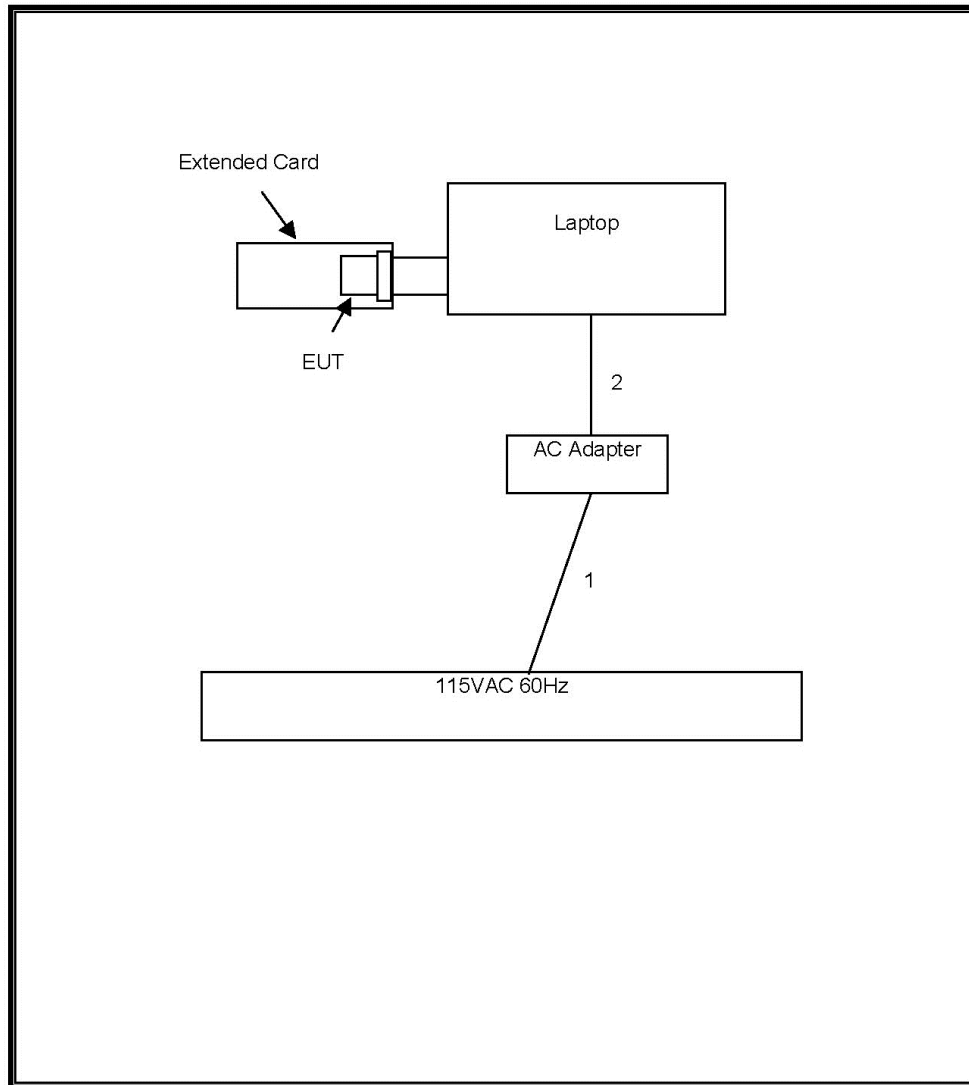
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	2m	One Ferrite at Laptop End
2	DC	1	DC	Un-shielded	2m	N/A

TEST SETUP

The EUT is installed in a host laptop computer via an extended card during the tests. Test software exercised the radio card.

SETUP DIAGRAM FOR TESTS



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 Date	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01012	4/15/2010	4/15/2011
Peak Power Meter	Agilent / HP	E4416A	C00963	4/15/2010	4/15/2011
Peak / Average Power Sensor	Agilent	E9327A	C00964	4/15/2010	4/15/2011
Antenna, Bilog, 2 GHz	Sund Sciences	JB1	C01011	2/6/2010	2/6/2011
Antenna, Horn, 18 GHz	EMCO	3115	C00945	4/15/2010	4/15/2011
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01063	2/6/2010	2/6/2011
EMI Receiver, 2.9 GHz	Agilent / HP	8542E	C00957	2/6/2010	2/6/2011
RF Filter Section, 2.9 GHz	Agilent / HP	85420E	C00958	2/6/2010	2/6/2011
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	2/6/2010	2/6/2011
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	2/6/2010	2/6/2011
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	8/3/2010	8/3/2011
Antenna, Horn, 26.5 GHz	ARA	MMH-1826/B	C00589	8/3/2010	8/3/2011
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	8/3/2010	8/3/2011
Reject Filter, 5.15-5.35 GHz	Micro-Tronics	BRC13190	N02679	CNR	CNR
Reject Filter, 5.47-5.725 GHz	Micro-Tronics	BRC13191	N02678	CNR	CNR
Reject Filter, 5.725-5.85 GHz	Micro-Tronics	BRC13192	N02676	CNR	CNR
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4407B	C01101	2/22/2010	2/22/2011
Oscilloscope, 100 MHz 4 Ch.	Agilent / HP	54601A	C00863	2/17/2010	2/17/2011
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	4/16/2010	4/16/2011

7. TEST RESULTS

7.1. NORMAL AND EXTREME CONDITIONS

LIMITS

None; for reporting purposes only.

RESULTS

Normal conditions are 25 deg C, 230 VAC.
The low temperature condition is 0 deg C.
The high temperature condition is 35 deg C.
The low voltage condition is 207 VAC.
The high voltage condition is 253 VAC.

7.2. DUTY CYCLE

LIMITS

None; for reporting purposes only.

RESULTS

Mode	Tx on (usec)	Tx on + Tx off (usec)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)
802.11b	100	100	100.00	0.00
802.11n HT20	100	100	100.00	0.00
802.11n HT40	100	100	100.00	0.00

7.3. EFFECTIVE RADIATED POWER

LIMIT

ETSI EN 300 328 Clause 4.3.1.2

The equivalent isotropic radiated power (e.i.r.p.) shall be equal to or less than 100 mW (20 dBm) over normal and extreme conditions. This limit shall apply for any combination of power level and intended antenna assembly.

TEST PROCEDURE

ETSI EN 300 328 Clause 5.7.2

CALCULATIONS

Output Power = Measured Power + Test Cable Loss + Duty Cycle Factor

EIRP = Output Power + EUT Antenna Gain

RESULTS

7.3.1. 802.11b MODE (0dBi Antenna Gain)

EUT Antenna Gain (dBi) =	0.0
Duty Cycle Factor (dB) =	0.0
Test Cable Loss (dB) =	14.0

Condition	Measured Power (dBm)	Output Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2412 MHz					
Normal	5.29	19.29	19.29	20	-0.71
Extreme T low, V low	5.69	19.69	19.69	20	-0.31
Extreme T low, V high	5.70	19.7	19.70	20	-0.30
Extreme T high V low	5.21	19.21	19.21	20	-0.79
Extreme T high, V high	5.22	19.22	19.22	20	-0.78
2442 MHz					
Normal	5.25	19.25	19.25	20	-0.75
Extreme T low, V low	5.69	19.69	19.69	20	-0.31
Extreme T low, V high	5.83	19.83	19.83	20	-0.17
Extreme T high V low	5.05	19.05	19.05	20	-0.95
Extreme T high, V high	5.06	19.06	19.06	20	-0.94
2472 MHz					
Normal	5.55	19.55	19.55	20	-0.45
Extreme T low, V low	5.72	19.72	19.72	20	-0.28
Extreme T low, V high	5.74	19.74	19.74	20	-0.26
Extreme T high V low	5.47	19.47	19.47	20	-0.53
Extreme T high, V high	5.44	19.44	19.44	20	-0.56

7.3.2. 802.11n HT20 MODE (0dBi Antenna Gain)

EUT Antenna Gain (dBi) =	0.0
Duty Cycle Factor (dB) =	0.0
Test Cable Loss (dB) =	14.0

Condition	Measured Power (dBm)	Output Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2412 MHz					
Normal	1.51	15.51	15.51	20	-4.49
Extreme T low, V low	1.89	15.89	15.89	20	-4.11
Extreme T low, V high	1.91	15.91	15.91	20	-4.09
Extreme T high V low	1.43	15.43	15.43	20	-4.57
Extreme T high, V high	1.44	15.44	15.44	20	-4.56
2442 MHz					
Normal	5.60	19.6	19.60	20	-0.40
Extreme T low, V low	5.85	19.85	19.85	20	-0.15
Extreme T low, V high	5.83	19.83	19.83	20	-0.17
Extreme T high V low	5.35	19.35	19.35	20	-0.65
Extreme T high, V high	5.41	19.41	19.41	20	-0.59
2472 MHz					
Normal	0.39	14.39	14.39	20	-5.61
Extreme T low, V low	0.77	14.77	14.77	20	-5.23
Extreme T low, V high	0.81	14.81	14.81	20	-5.19
Extreme T high V low	0.11	14.11	14.11	20	-5.89
Extreme T high, V high	0.09	14.09	14.09	20	-5.91

7.3.3. 802.11n HT40 MODE (0dBi Antenna Gain)

EUT Antenna Gain (dBi) =	0.0
Duty Cycle Factor (dB) =	0.0
Test Cable Loss (dB) =	14.0

Condition	Measured Power (dBm)	Output Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2422 MHz					
Normal	3.63	17.63	17.63	20	-2.37
Extreme T low, V low	3.94	17.94	17.94	20	-2.06
Extreme T low, V high	3.92	17.92	17.92	20	-2.08
Extreme T high V low	3.43	17.43	17.43	20	-2.57
Extreme T high, V high	3.44	17.44	17.44	20	-2.56
2442 MHz					
Normal	5.52	19.52	19.52	20	-0.48
Extreme T low, V low	5.67	19.67	19.67	20	-0.33
Extreme T low, V high	5.68	19.68	19.68	20	-0.32
Extreme T high V low	5.13	19.13	19.13	20	-0.87
Extreme T high, V high	5.22	19.22	19.22	20	-0.78
2462 MHz					
Normal	2.41	16.41	16.41	20	-3.59
Extreme T low, V low	2.79	16.79	16.79	20	-3.21
Extreme T low, V high	2.80	16.8	16.80	20	-3.20
Extreme T high V low	2.15	16.15	16.15	20	-3.85
Extreme T high, V high	2.15	16.15	16.15	20	-3.85

7.3.4. 802.11b MODE (3.62dBi Antenna Gain)

EUT Antenna Gain (dBi) =	3.62
Duty Cycle Factor (dB) =	0.0
Test Cable Loss (dB) =	14.0

Condition	Measured Power (dBm)	Output Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2412 MHz					
Normal	1.78	15.78	19.40	20	-0.60
Extreme T low, V low	1.96	15.96	19.58	20	-0.42
Extreme T low, V high	1.99	15.99	19.61	20	-0.39
2442 MHz					
Normal	1.36	15.36	18.98	20	-1.02
Extreme T low, V low	1.65	15.65	19.27	20	-0.73
Extreme T low, V high	1.65	15.65	19.27	20	-0.73
2472 MHz					
Normal	1.86	15.86	19.48	20	-0.52
Extreme T low, V low	2.02	16.02	19.64	20	-0.36
Extreme T low, V high	2.06	16.06	19.68	20	-0.32

7.3.5. 802.11n HT20 MODE (3.62dBi Antenna Gain)

EUT Antenna Gain (dBi) =	3.62
Duty Cycle Factor (dB) =	0.0
Test Cable Loss (dB) =	14.0

Condition	Measured Power (dBm)	Output Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2412 MHz					
Normal	-1.73	12.27	15.89	20	-4.11
Extreme T low, V low	-1.66	12.34	15.96	20	-4.04
Extreme T low, V high	-1.64	12.36	15.98	20	-4.02
2442 MHz					
Normal	1.98	15.98	19.60	20	-0.40
Extreme T low, V low	2.13	16.13	19.75	20	-0.25
Extreme T low, V high	2.15	16.15	19.77	20	-0.23
2472 MHz					
Normal	-2.45	11.55	15.17	20	-4.83
Extreme T low, V low	-2.21	11.79	15.41	20	-4.59
Extreme T low, V high	-2.19	11.81	15.43	20	-4.57

7.3.6. 802.11n HT40 MODE (3.62dBi Antenna Gain)

EUT Antenna Gain (dBi) =	3.62
Duty Cycle Factor (dB) =	0.0
Test Cable Loss (dB) =	14.0

Condition	Measured Power (dBm)	Output Power (dBm)	EIRP (dBm)	Limit (dBm)	Margin (dB)
2422 MHz					
Normal	1.33	15.33	18.95	20	-1.05
Extreme T low, V low	1.47	15.47	19.09	20	-0.91
Extreme T low, V high	1.49	15.49	19.11	20	-0.89
2442 MHz					
Normal	2.03	16.03	19.65	20	-0.35
Extreme T low, V low	2.18	16.18	19.80	20	-0.20
Extreme T low, V high	2.20	16.2	19.82	20	-0.18
2462 MHz					
Normal	-0.06	13.94	17.56	20	-2.44
Extreme T low, V low	0.13	14.13	17.75	20	-2.25
Extreme T low, V high	0.12	14.12	17.74	20	-2.26

7.4. SPECTRAL POWER DENSITY

LIMIT

ETSI EN 300 328 Clause 4.3.2.2

For wide band modulations other than FHSS (e.g. DSSS, OFDM, etc.), the maximum e.i.r.p. spectral density is limited to 10 mW (10 dBm) per MHz.

TEST PROCEDURE

ETSI EN 300 328 Clause 5.7.3.1

CALCULATIONS

Power Density (dBm/MHz) EIRP =
Measured Power Density (dBm/MHz) + Duty Cycle Factor (dB) + EUT Antenna Gain (dBi)

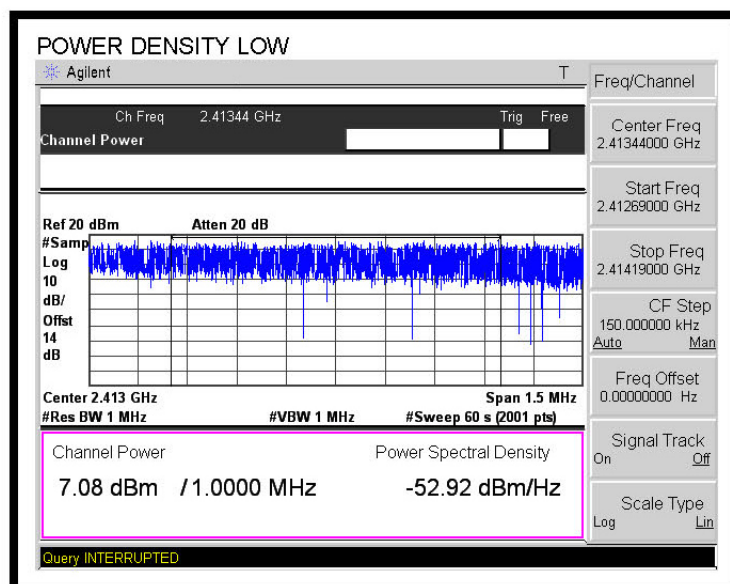
RESULTS

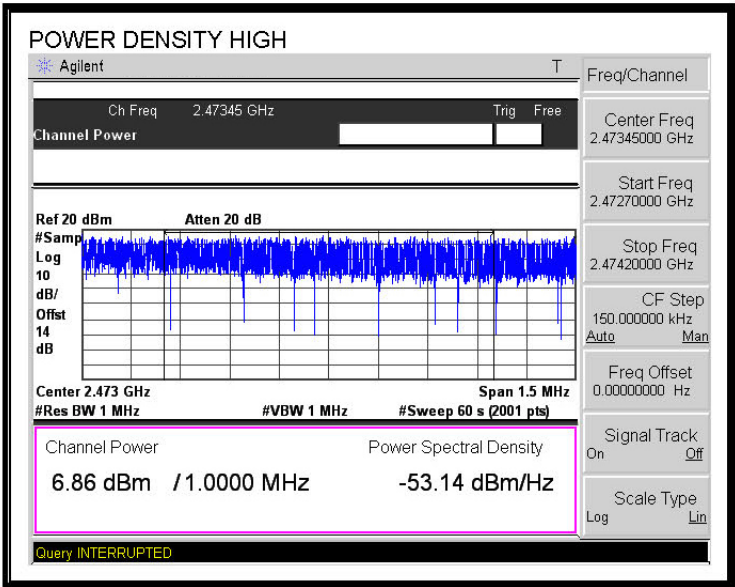
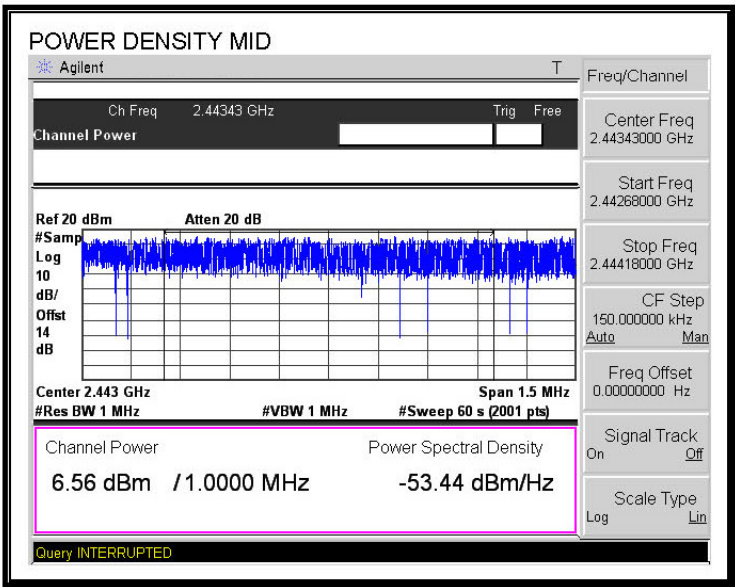
7.4.1. 802.11b MODE (0dBi Antenna Gain)

EUT Antenna Gain (dBi) = 0.0
Duty Cycle Factor (dB) = 0.00

Frequency (MHz)	Measured Density (dBm/MHz)	Power Density (dBm/MHz) EIRP	Limit (dBm/MHz) EIRP	Margin (dB)
2412	7.08	7.08	10	-2.92
2442	6.56	6.56	10	-3.44
2472	6.86	6.86	10	-3.14

POWER DENSITY



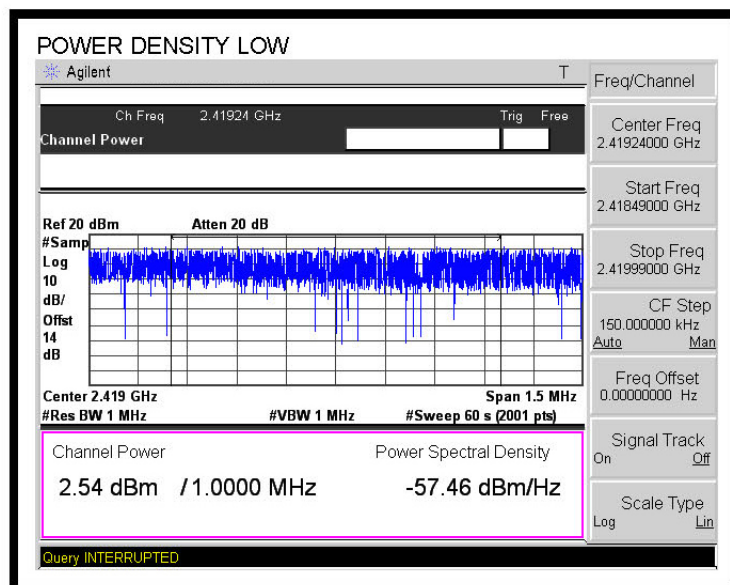


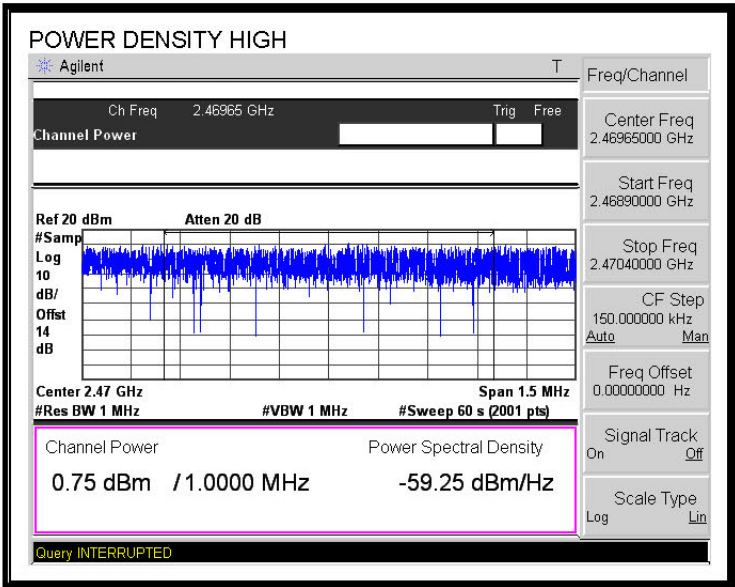
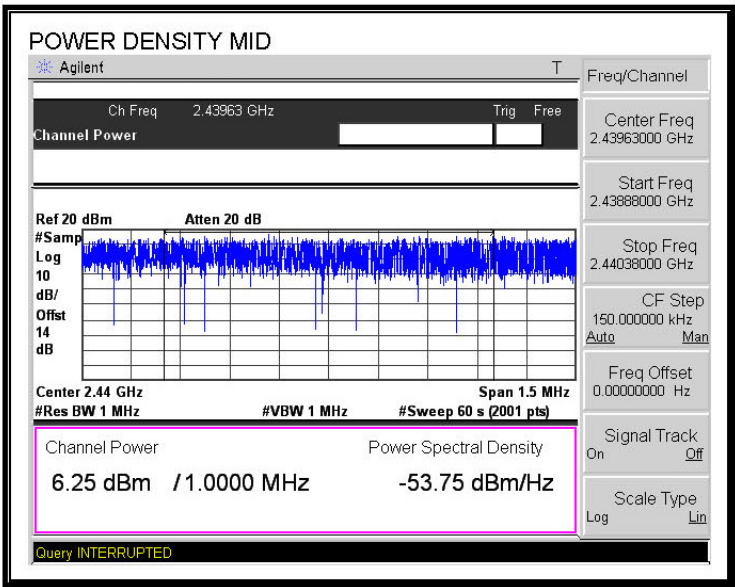
7.4.2. 802.11n HT20 MODE (0dBi Antenna Gain)

EUT Antenna Gain (dBi) = 0.0
Duty Cycle Factor (dB) = 0.00

Frequency (MHz)	Measured Density (dBm/MHz)	Power Density (dBm/MHz) EIRP	Limit (dBm/MHz) EIRP	Margin (dB)
2412	2.54	2.54	10	-7.46
2442	6.25	6.25	10	-3.75
2472	0.75	0.75	10	-9.25

POWER DENSITY



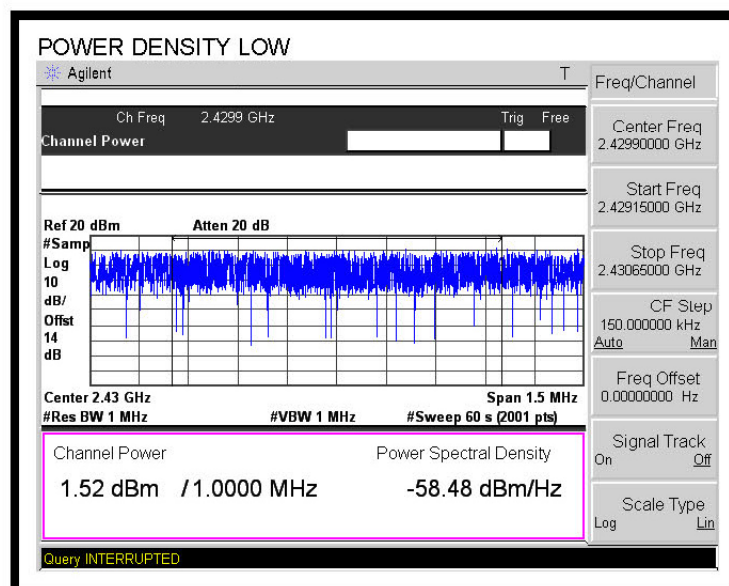


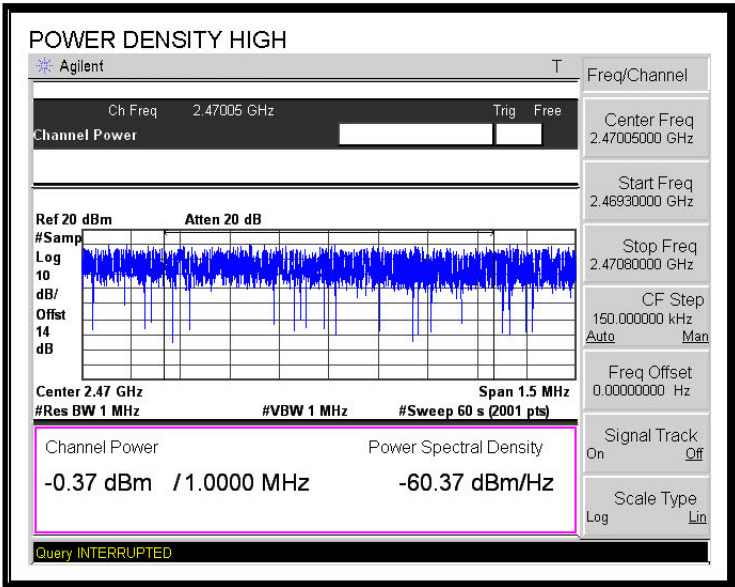
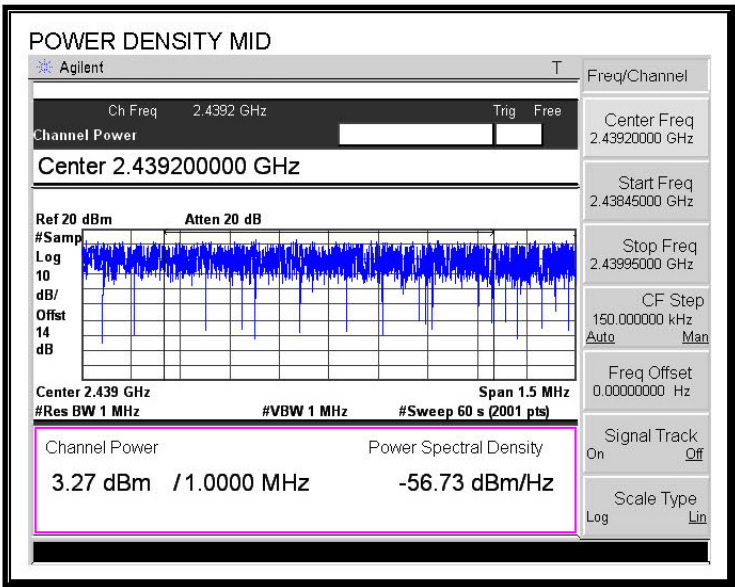
7.4.3. 802.11n HT40 MODE (0dBi Antenna Gain)

EUT Antenna Gain (dBi) = 0.0
Duty Cycle Factor (dB) = 0.00

Frequency (MHz)	Measured Density (dBm/MHz)	Power Density (dBm/MHz) EIRP	Limit (dBm/MHz) EIRP	Margin (dB)
2422	1.52	1.52	10	-8.48
2442	3.27	3.27	10	-6.73
2462	-0.37	-0.37	10	-10.37

POWER DENSITY



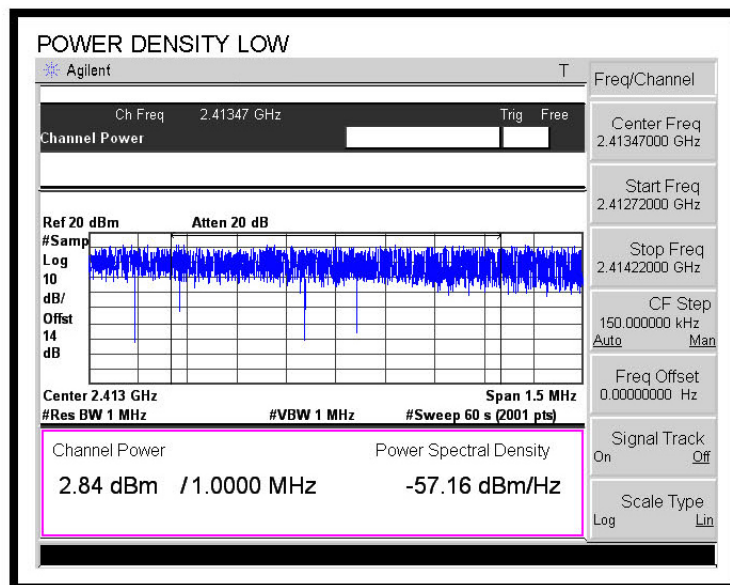


7.4.4. 802.11b MODE (3.62dBi Antenna Gain)

EUT Antenna Gain (dBi) = 3.62
Duty Cycle Factor (dB) = 0.00

Frequency (MHz)	Measured Density (dBm/MHz)	Power Density (dBm/MHz) EIRP	Limit (dBm/MHz) EIRP	Margin (dB)
2412	2.84	6.46	10	-3.54
2442	2.79	6.41	10	-3.59
2472	3.31	6.93	10	-3.07

POWER DENSITY





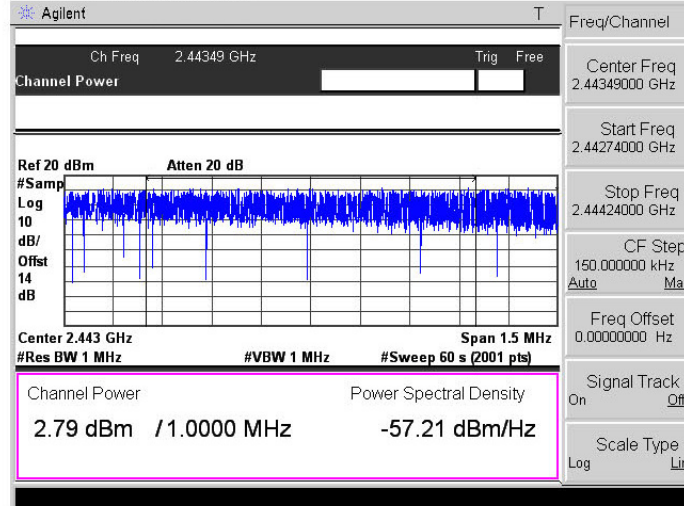
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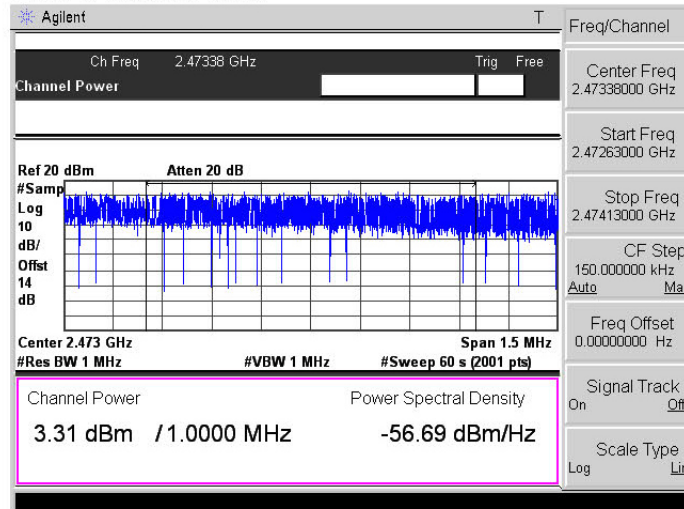
Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
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POWER DENSITY MID



POWER DENSITY HIGH



7.5. FREQUENCY RANGE

LIMIT

ETSI EN 300 328 Clause 4.3.3.2

For all equipment the frequency range shall lie within the band 2,4 GHz to 2,4835 GHz ($f_L > 2,4$ GHz and $f_H < 2,4835$ GHz), over Normal and Extreme conditions.

TEST PROCEDURE

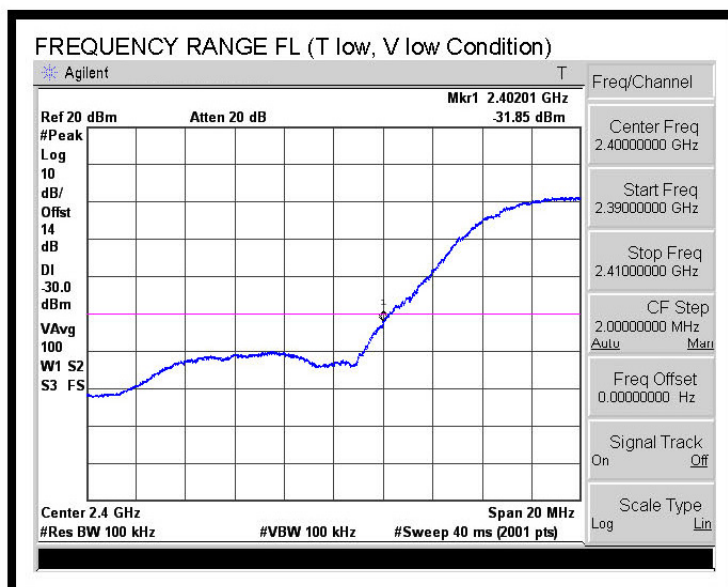
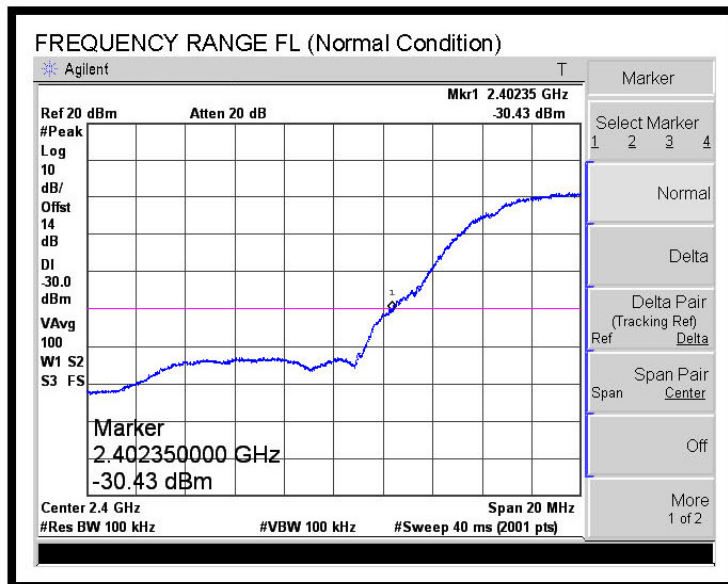
ETSI EN 300 328 Clause 5.7.4.1

RESULTS

7.5.1. 802.11b MODE (0dBi Antenna Gain)

Limit	2400 Minimum	2483.5 Maximum
Condition	F low (MHz)	F high (MHz)
Normal	2402.35	2482.06
Extreme T low, V low	2402.01	2482.16
Extreme T low, V high	2402.17	2482.17
Extreme T high V low	2402.13	2482.04
Extreme T high, V high	2402.20	2482.03

FREQUENCY RANGE F LOW





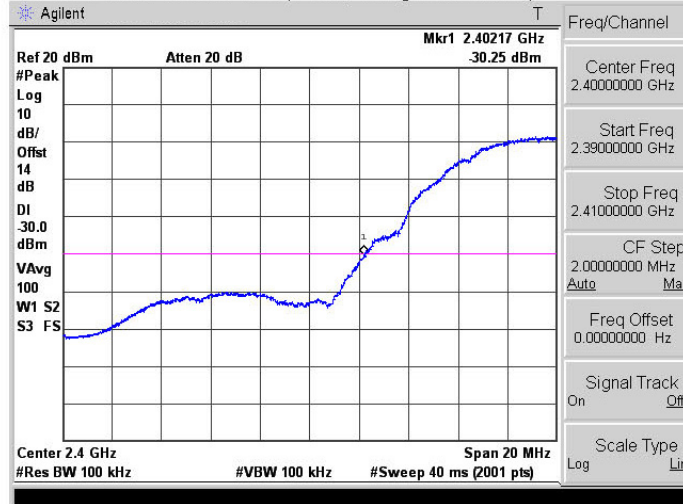
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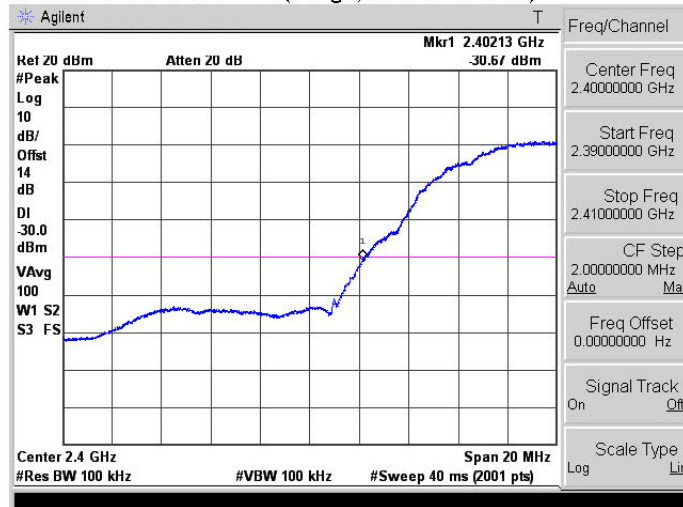
Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
To: EN 300 328 V1.7.1

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FREQUENCY RANGE FL (T low, V high Condition)



FREQUENCY RANGE FL (T high, V low Condition)





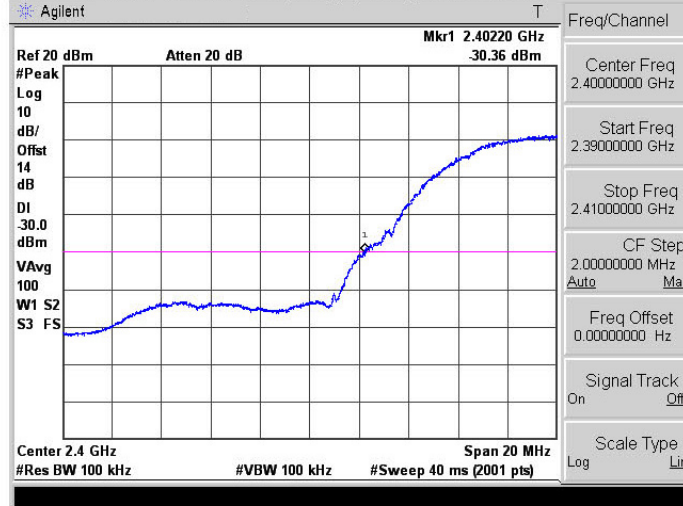
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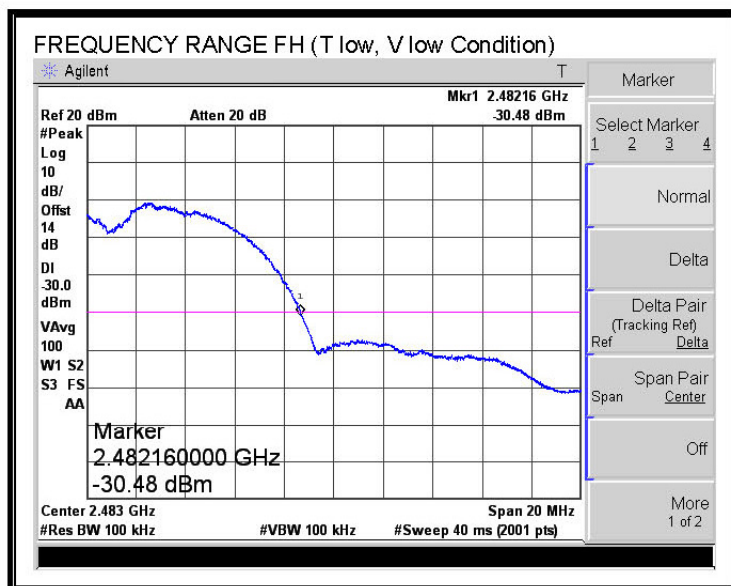
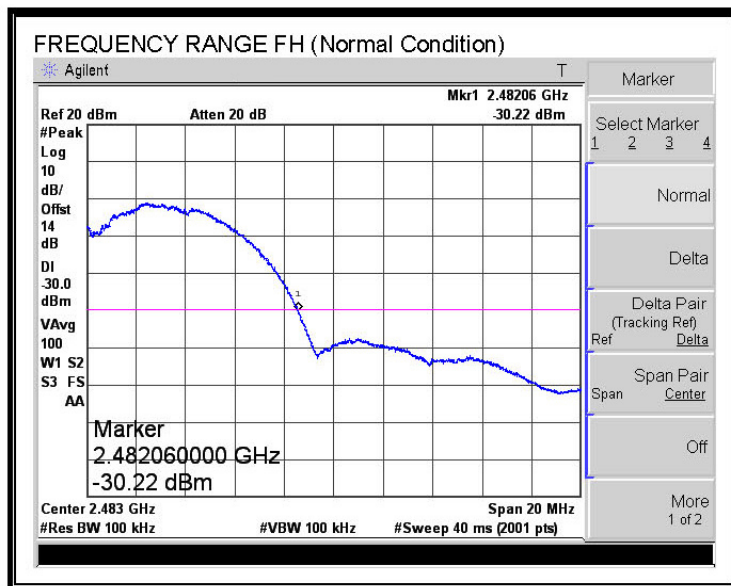
Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
To: EN 300 328 V1.7.1

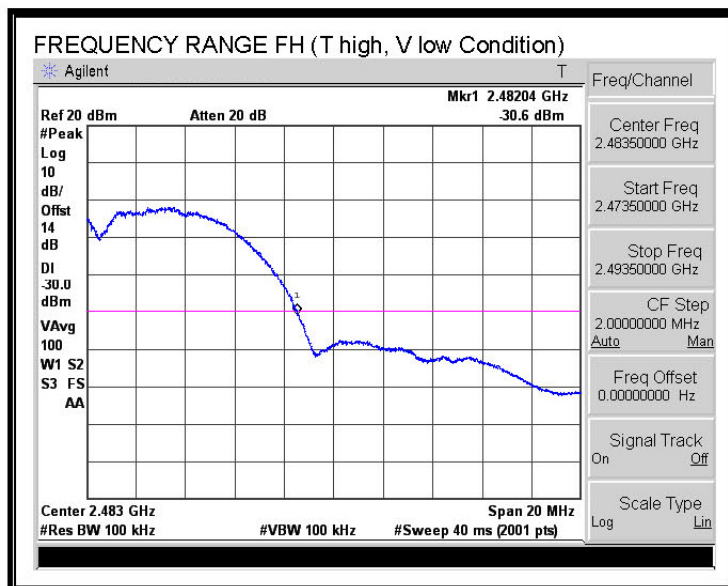
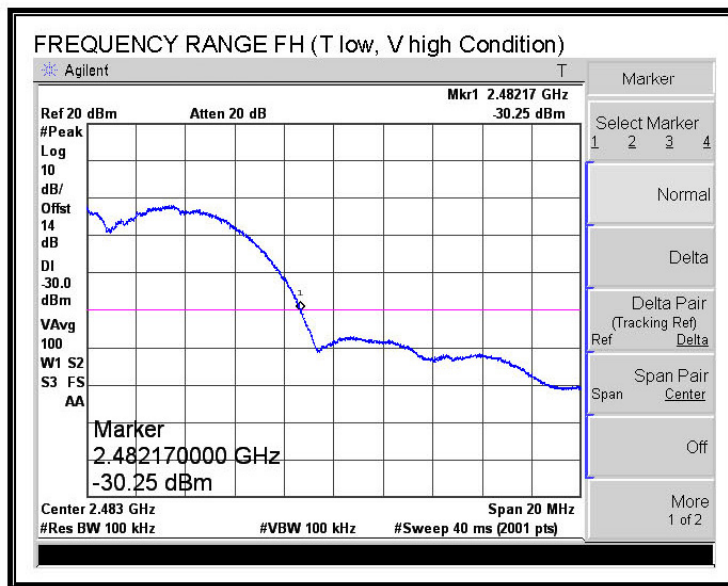
Serial#: 08U11572-6B
Issue Date: November 11, 2010
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FREQUENCY RANGE FL (T high, V high Condition)



FREQUENCY RANGE F HIGH





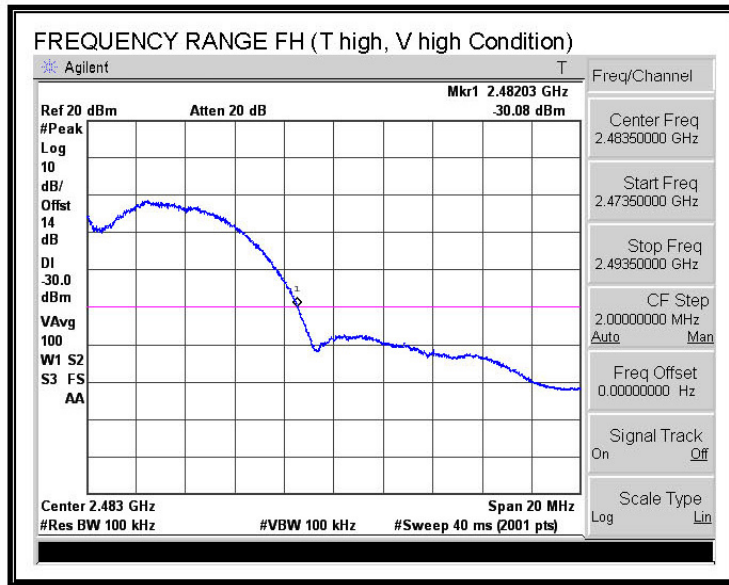


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Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
To: EN 300 328 V1.7.1

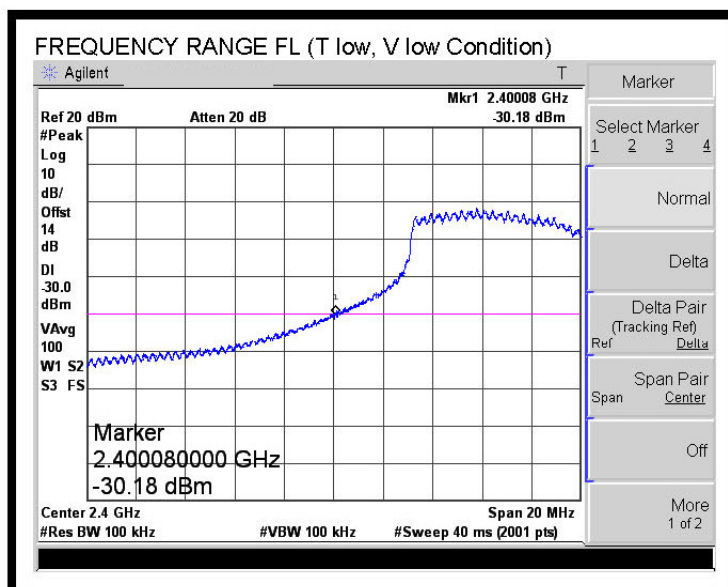
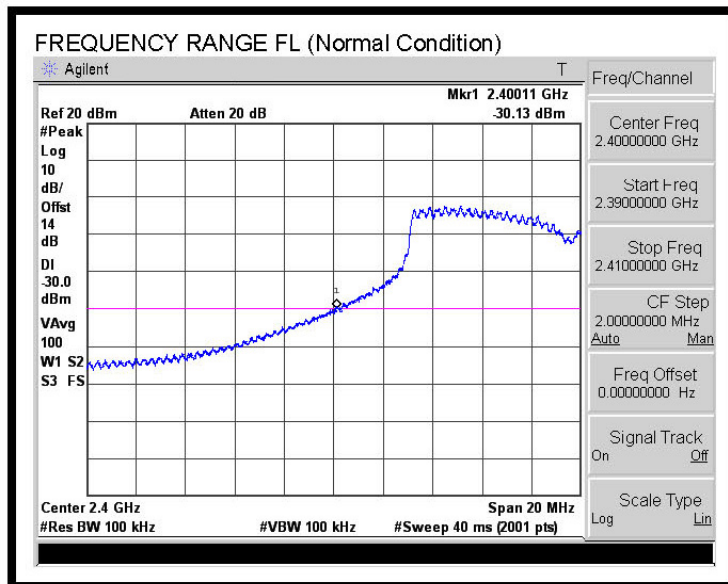
Serial#: 08U11572-6B
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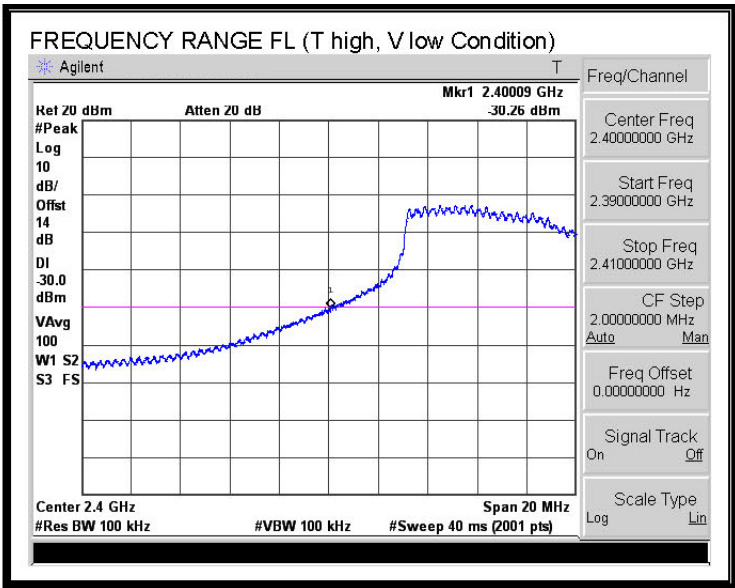
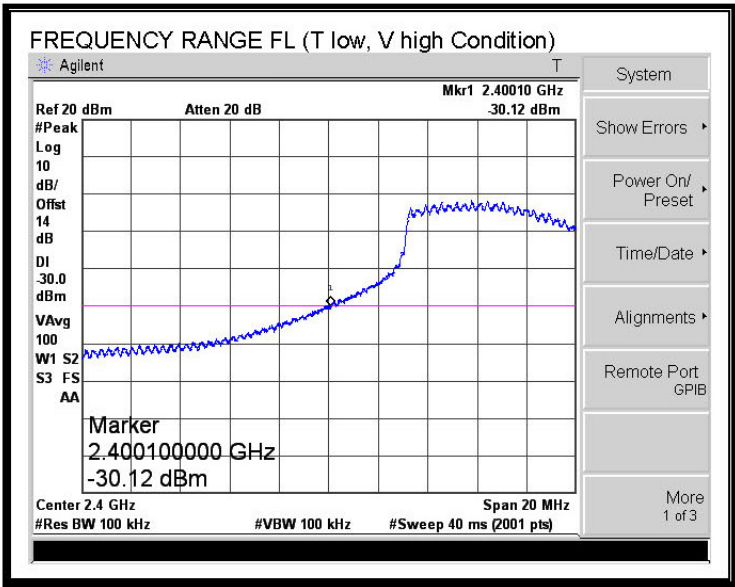


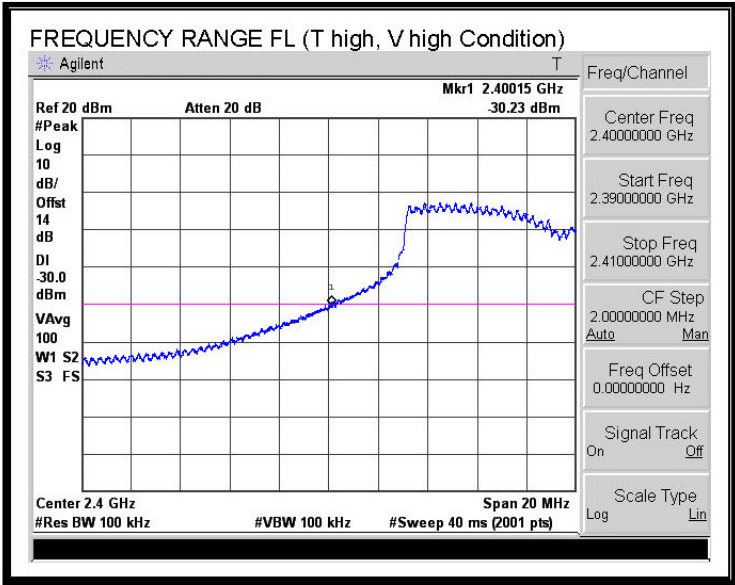
7.5.2. 802.11n HT20 MODE (0dBi Antenna Gain)

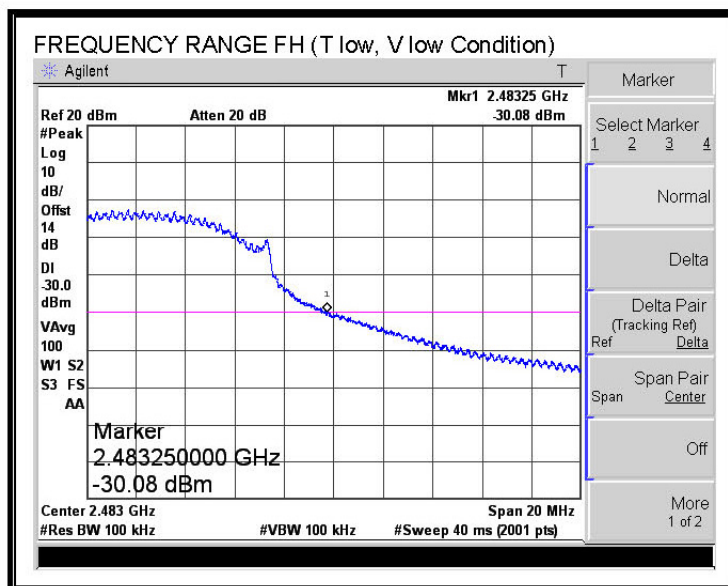
Limit	2400 Minimum	2483.5 Maximum
Condition	F low (MHz)	F high (MHz)
Normal	2400.11	2482.93
Extreme T low, V low	2400.08	2483.25
Extreme T low, V high	2400.10	2483.25
Extreme T high V low	2400.09	2482.92
Extreme T high, V high	2400.15	2482.95

FREQUENCY RANGE F LOW











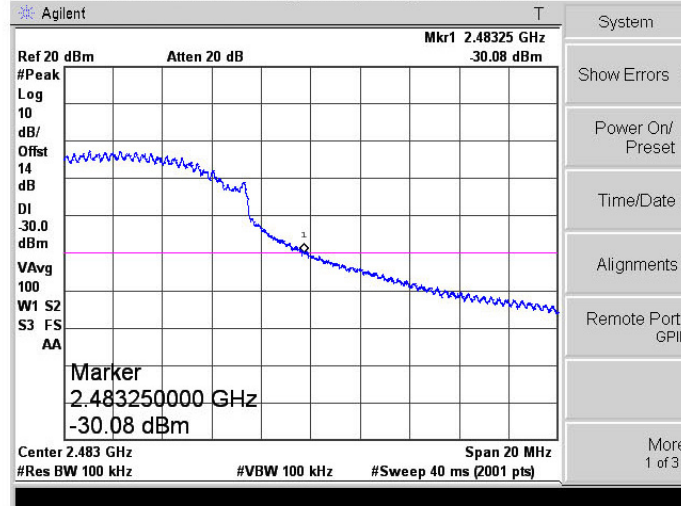
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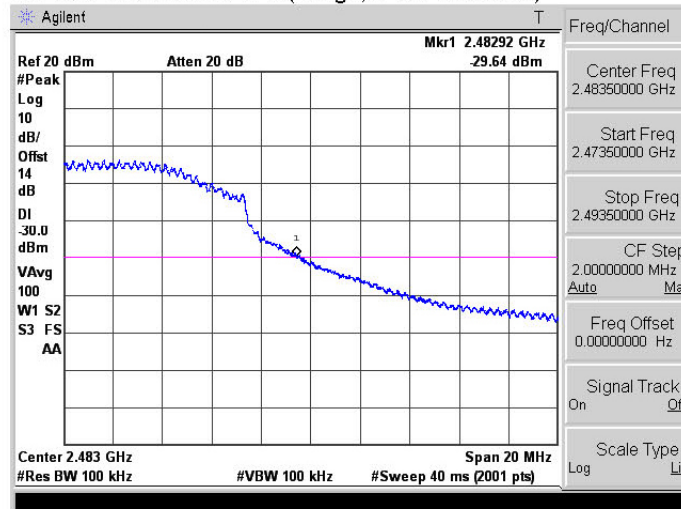
Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
To: EN 300 328 V1.7.1

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FREQUENCY RANGE FH (T low, V high Condition)



FREQUENCY RANGE FH (T high, V low Condition)



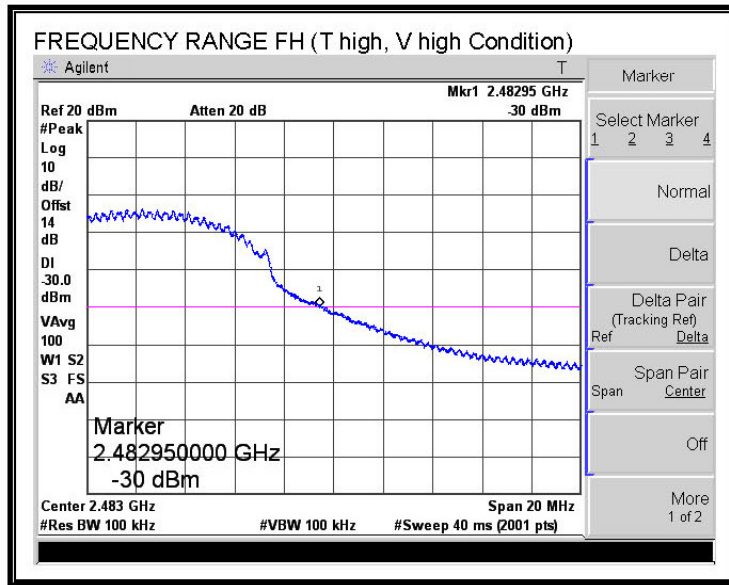


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Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
To: EN 300 328 V1.7.1

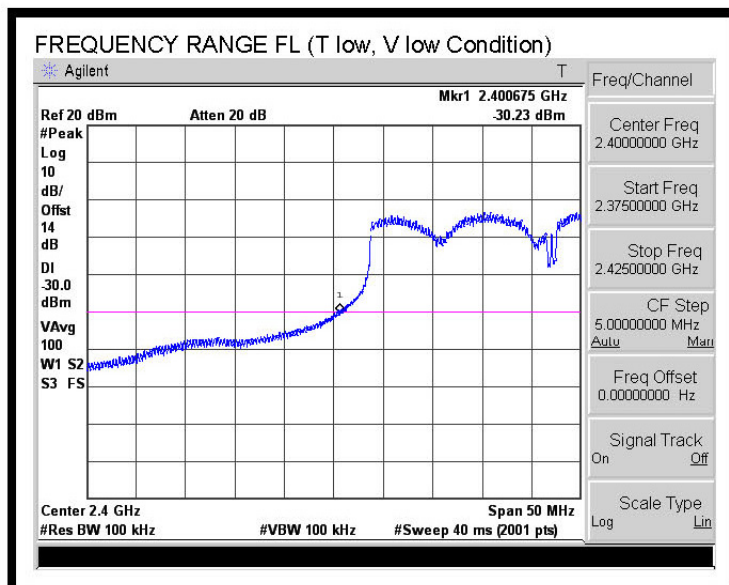
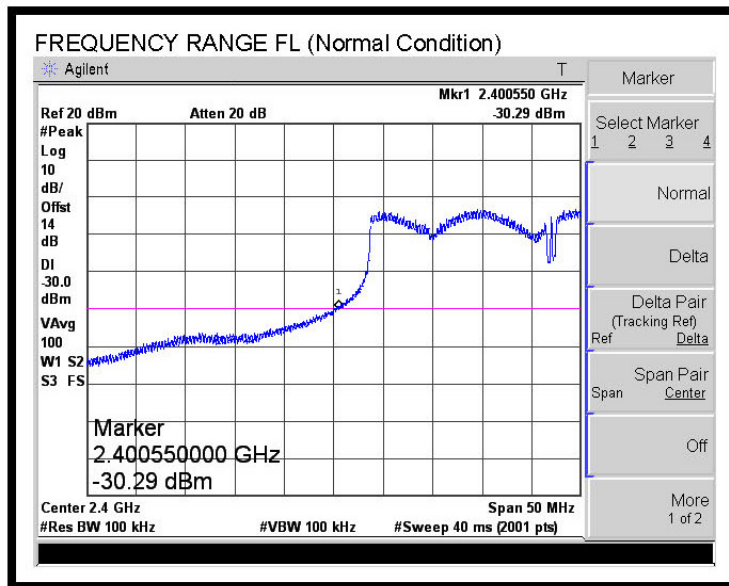
Serial#: 08U11572-6B
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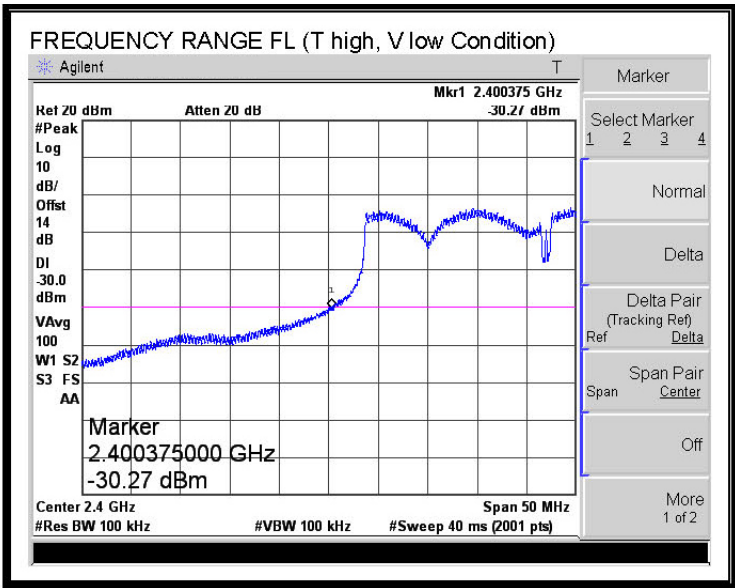
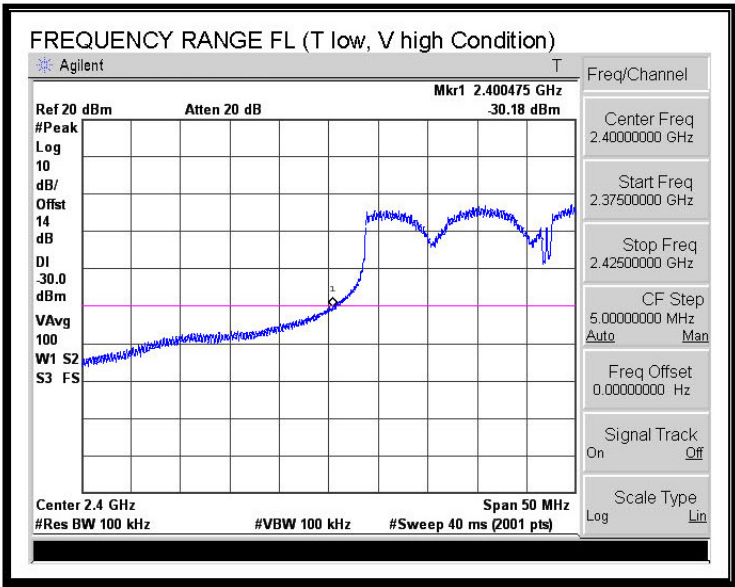


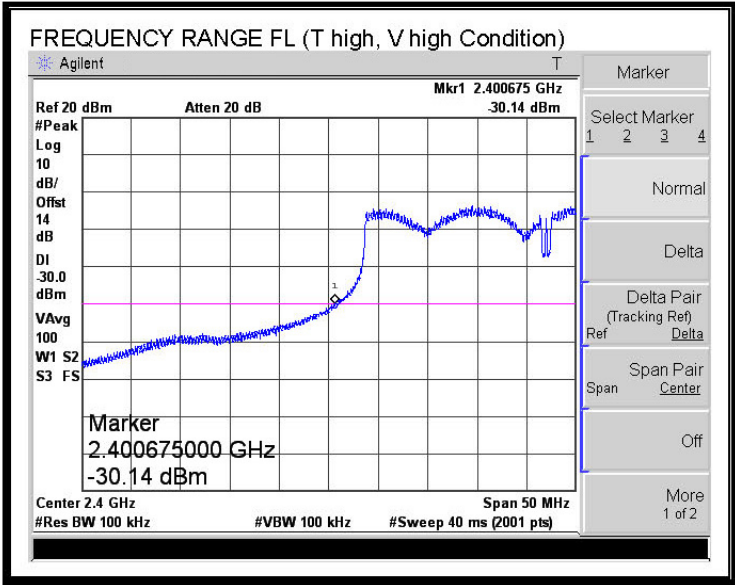
7.5.3. 802.11n HT40 MODE (0dBi Antenna Gain)

Limit	2400 Minimum	2483.5 Maximum
Condition	F low (MHz)	F high (MHz)
Normal	2400.55	2481.68
Extreme T low, V low	2400.68	2483.25
Extreme T low, V high	2400.48	2483.25
Extreme T high V low	2400.38	2482.83
Extreme T high, V high	2400.68	2482.83

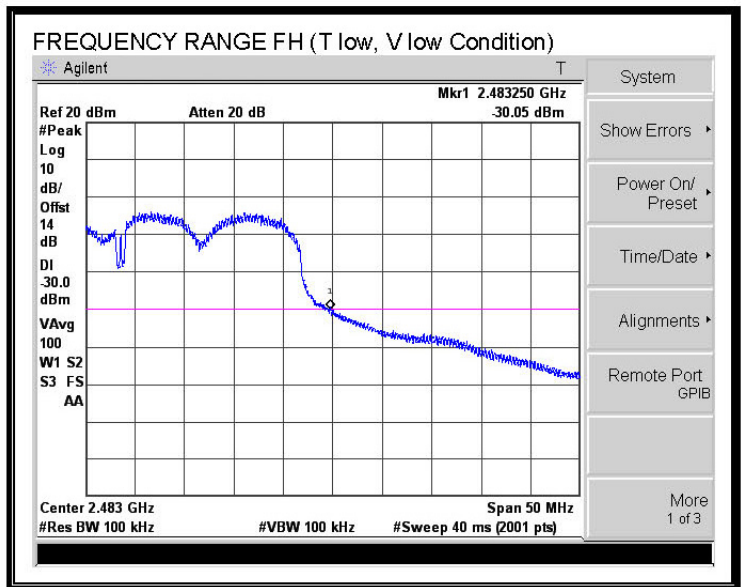
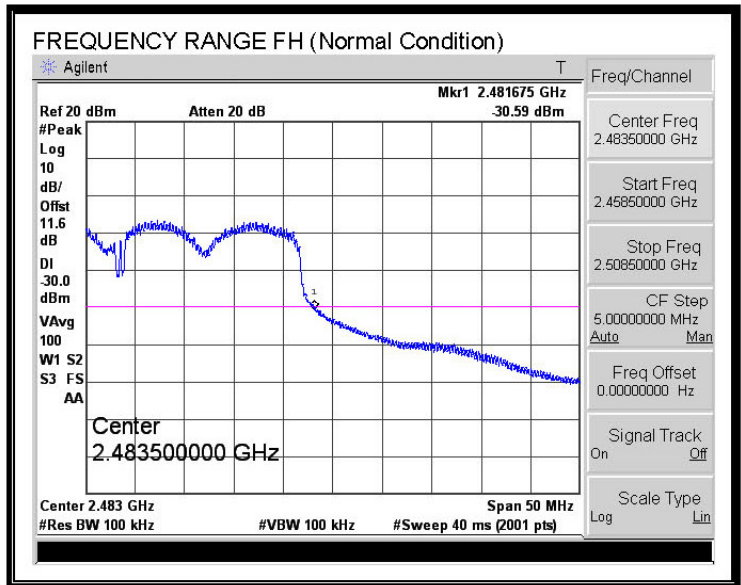
FREQUENCY RANGE F LOW







FREQUENCY RANGE F HIGH





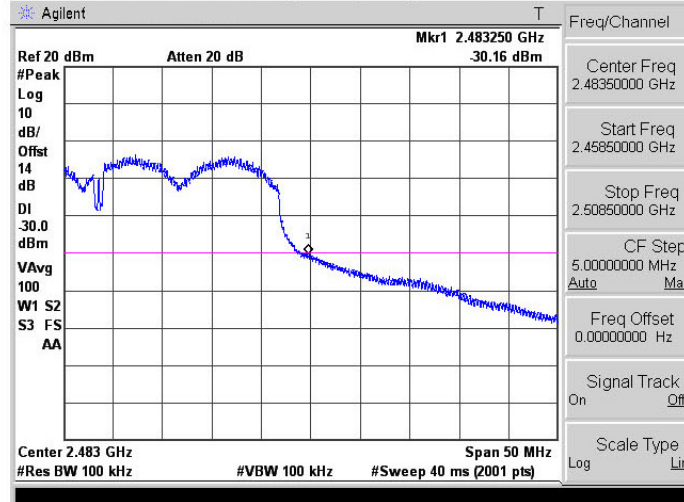
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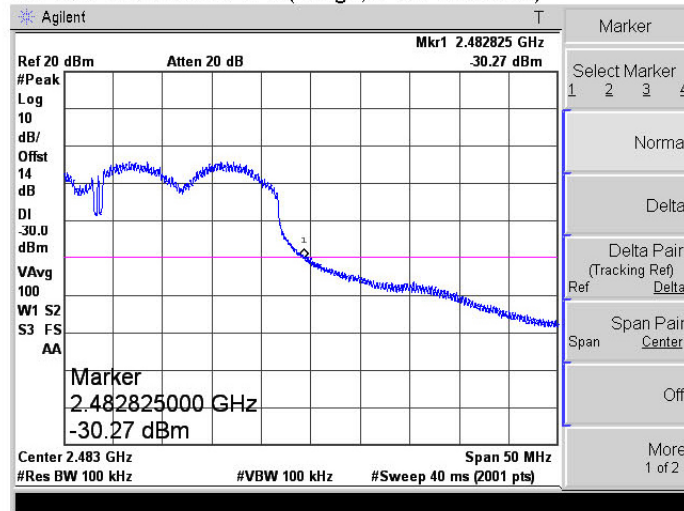
Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
To: EN 300 328 V1.7.1

Serial#: 08U11572-6B
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FREQUENCY RANGE FH (T low, V high Condition)



FREQUENCY RANGE FH (T high, V low Condition)



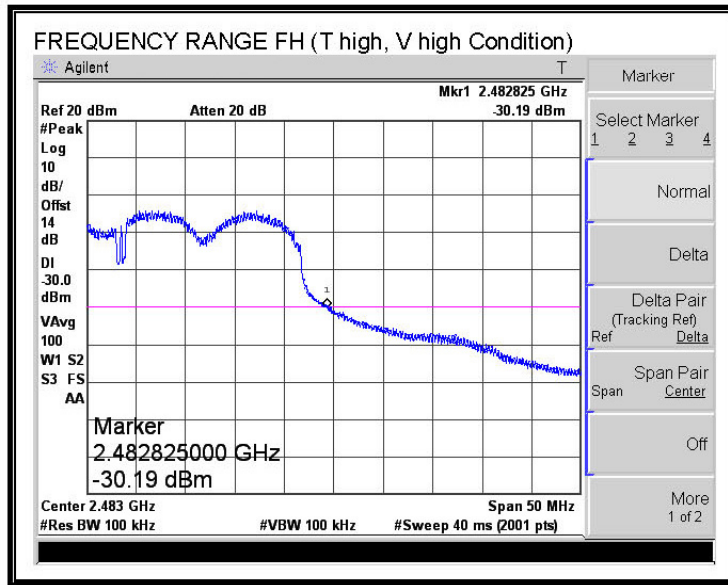


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Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
To: EN 300 328 V1.7.1

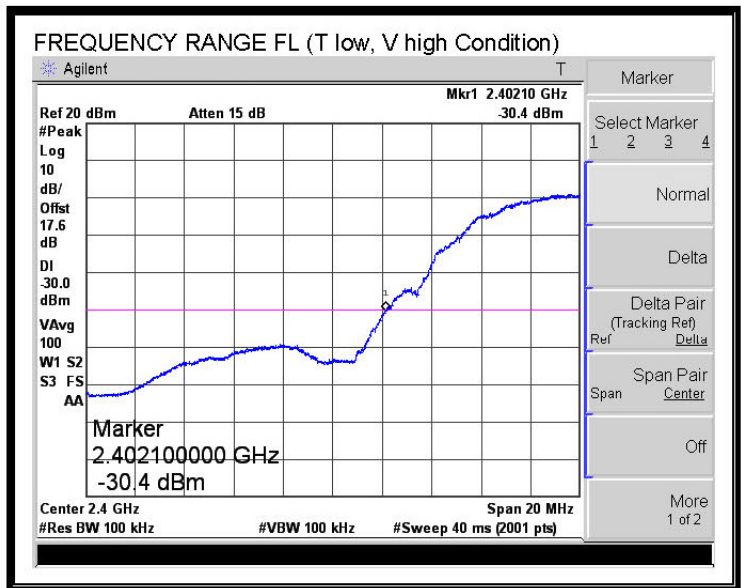
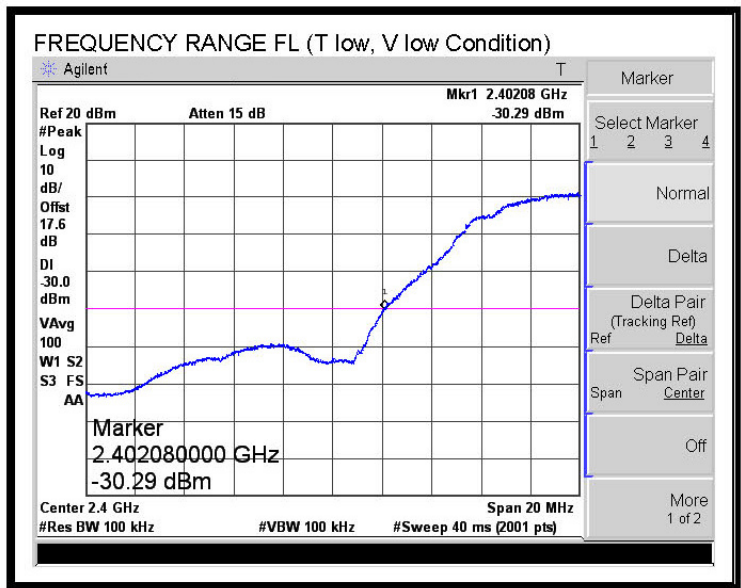
Serial#: 08U11572-6B
Issue Date: November 11, 2010
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7.5.4. 802.11b MODE (3.62dBi Antenna Gain)

Limit	2400 Minimum	2483.5 Maximum
Condition	F low (MHz)	F high (MHz)
Extreme T low, V low	2402.08	2482.15
Extreme T low, V high	2402.10	2482.15

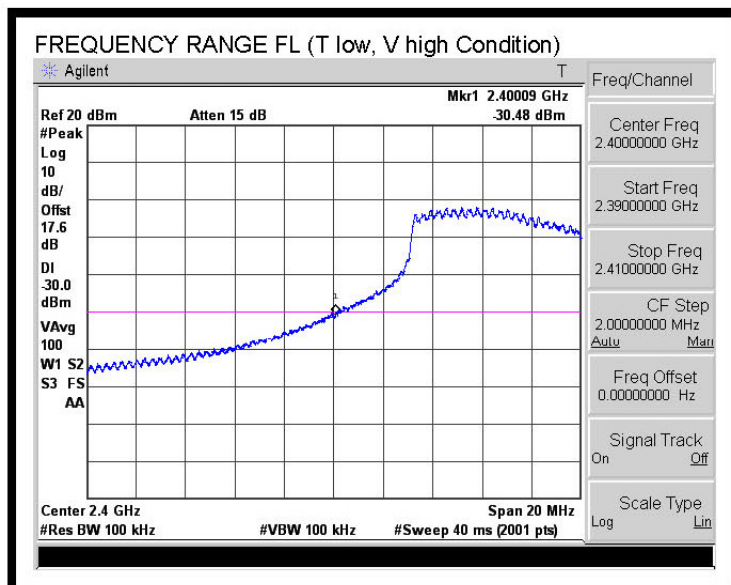
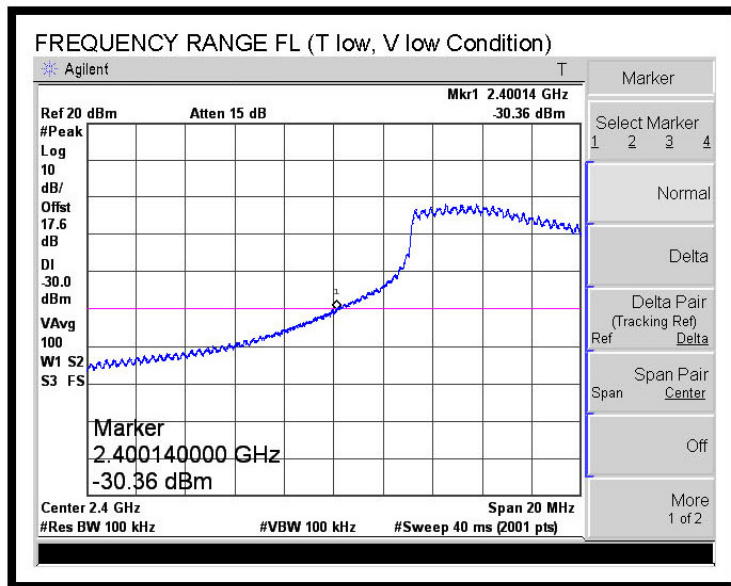
FREQUENCY RANGE F LOW



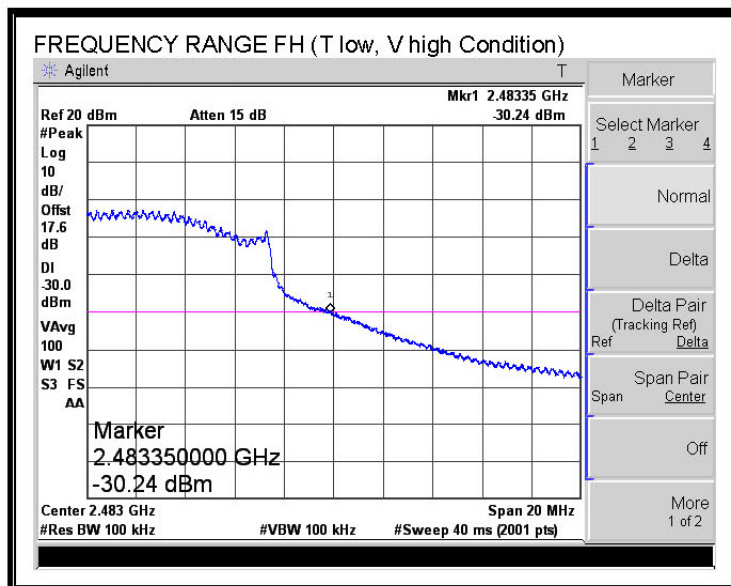
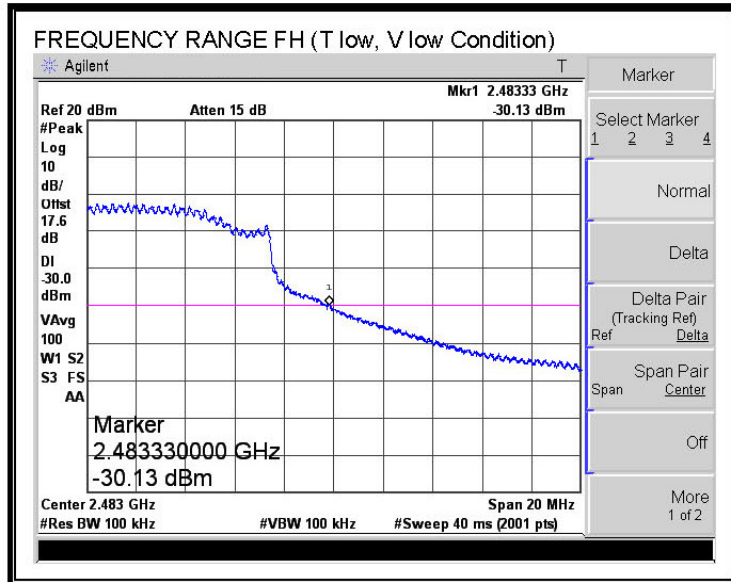
7.5.5. 802.11n HT20 MODE (3.62dBi Antenna Gain)

Limit	2400 Minimum	2483.5 Maximum
Condition	F low (MHz)	F high (MHz)
Extreme T low, V low	2400.14	2483.33
Extreme T low, V high	2400.09	2483.35

FREQUENCY RANGE F LOW



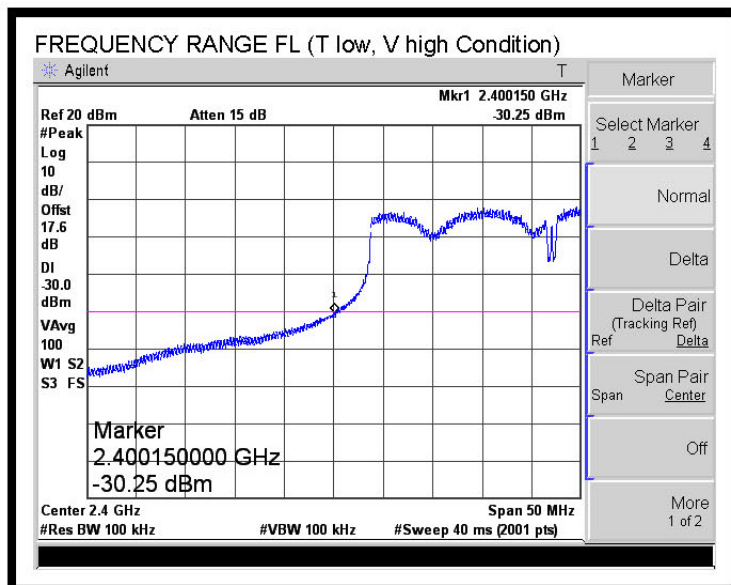
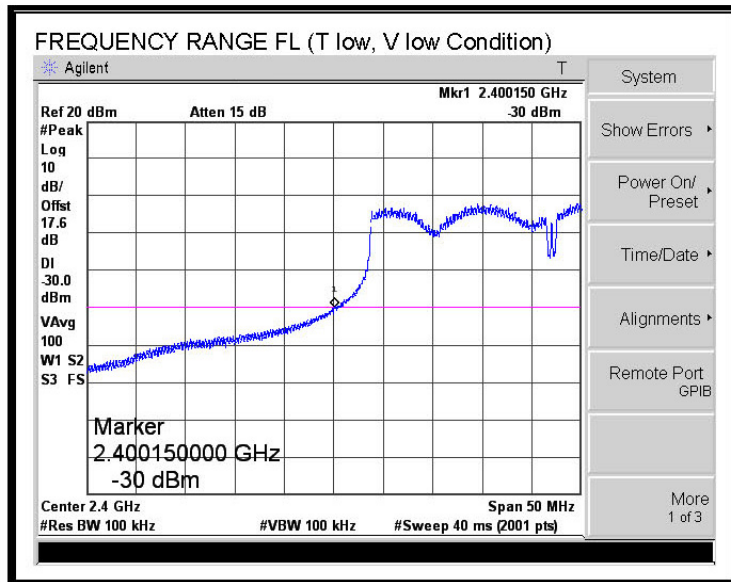
FREQUENCY RANGE F HIGH



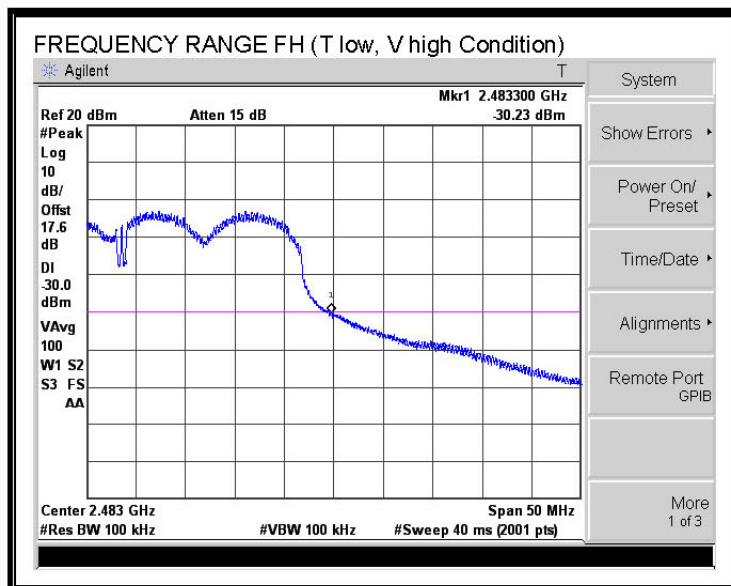
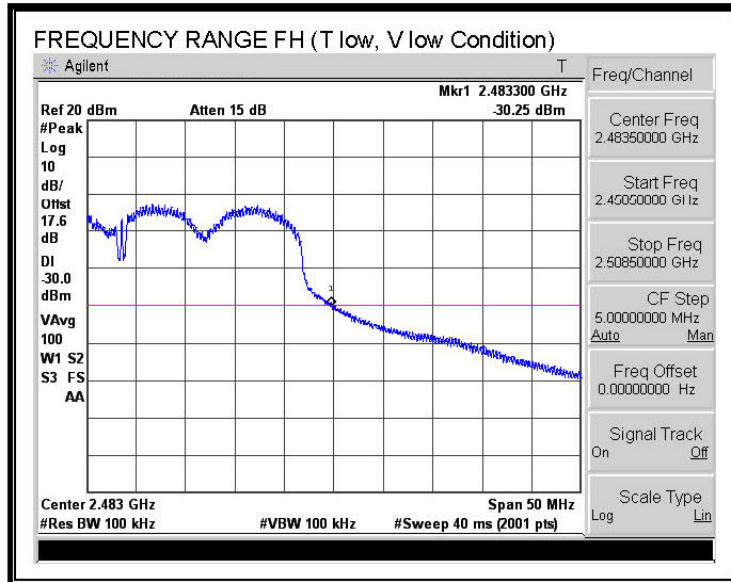
7.5.6. 802.11n HT40 MODE (3.62dBi Antenna Gain)

Limit	2400 Minimum	2483.5 Maximum
Condition	F low (MHz)	F high (MHz)
Extreme T low, V low	2400.15	2483.30
Extreme T low, V high	2400.15	2483.30

FREQUENCY RANGE F LOW



FREQUENCY RANGE F HIGH



7.6. TRANSMITTER SPURIOUS EMISSIONS

LIMIT

ETSI EN 300 328 Clause 4.3.6.2

Table 2: Transmitter Limits for Narrowband Spurious Emissions

Frequency Range	Limit when operating	Limit when in standby
30 MHz to 1.0 GHz	-36 dBm	-57 dBm
1.0 GHz to 12.75 GHz	-30 dBm	-47 dBm
1.8 GHz to 1.9 GHz 5.15 GHz to 5.3 GHz	-47 dBm	-47 dBm

Table 3: Transmitter Limits for Wideband Spurious Emissions

Frequency Range	Limit when operating	Limit when in standby
30 MHz to 1.0 GHz	-86 dBm/Hz	-107 dBm/Hz
1.0 GHz to 12.75 GHz	-80 dBm/Hz	-97 dBm/Hz
1.8 GHz to 1.9 GHz 5.15 GHz to 5.3 GHz	-97 dBm/Hz	-97 dBm/Hz

TEST PROCEDURE

ETSI EN 300 328 Clause 5.7.5

TEST PROTOCOL

EN 300 328 Clause 5.7.5

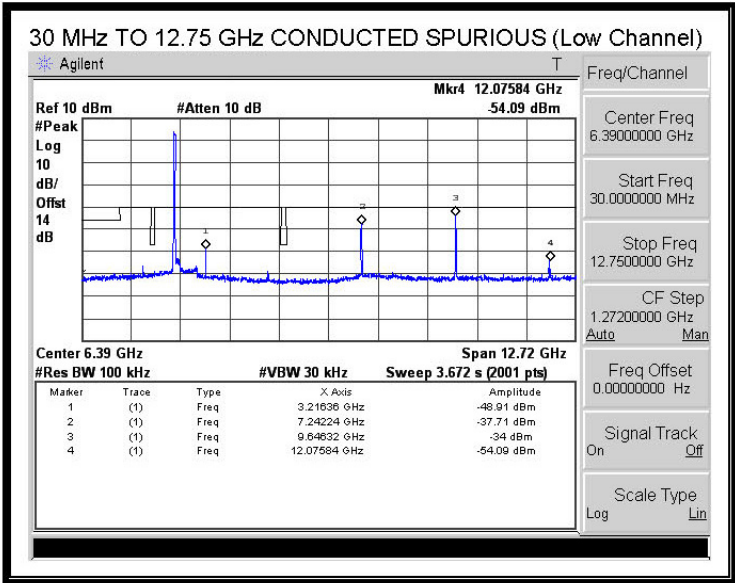
The levels of spurious emissions are measured as

their power in a specified load (conducted spurious emissions); and their effective radiated power when radiated by the cabinet or structure of the equipment (cabinet radiation).

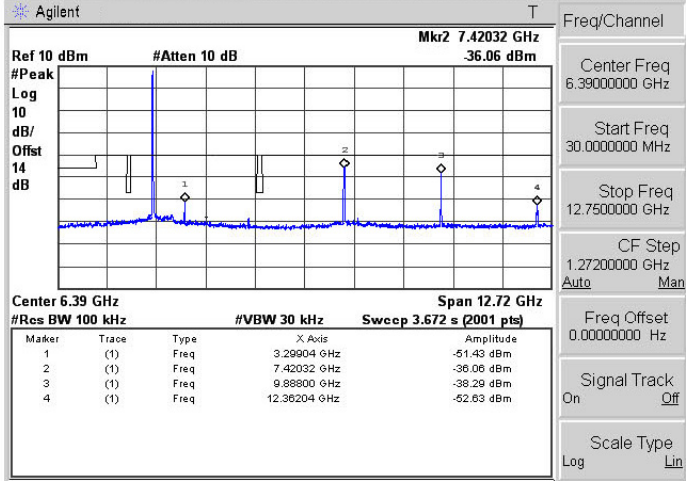
RESULTS

7.6.1. 802.11b MODE

CONDUCTED SPURIOUS EMISSIONS



30 MHz TO 12.75 GHz CONDUCTED SPURIOUS (High Channel)



RADIATED SPURIOUS EMISSIONS BELOW 1 GHz

30 - 1000MHz Substitution Measurement
Compliance Certification Services, Fremont 5m A-Chamber

Test Equipment:

Bilog Antenna

5m Chamber Sunol Bilog

Cable

5m Chamber Cable

Pre-amplifier 8447D

T5 8447D

Limit

ETSI 300 328 Tx

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP ERP	Limit (dBm)	Margin (dB)	Notes
Low Ch. (2412 MHz)										
144.50	44.3	H	-63.8	1.5	-0.3	-2.5	-67.8	-36.0	-31.8	
199.80	61.4	H	-48.3	1.7	4.3	2.2	-47.9	-36.0	-11.9	
398.60	46.6	H	-57.5	2.4	6.0	3.9	-56.0	-36.0	-20.0	
486.90	37.4	H	-66.1	2.6	6.2	4.0	-64.7	-36.0	-28.7	
599.40	38.9	H	-63.8	2.9	6.9	4.8	-61.9	-36.0	-25.9	
615.90	29.0	H	-73.6	2.9	6.9	4.7	-71.8	-36.0	-35.8	
697.40	33.0	H	-68.1	3.1	6.8	4.6	-66.6	-36.0	-30.6	
144.50	40.8	V	-67.9	1.5	-0.3	-2.5	-71.9	-36.0	-35.9	
199.80	52.8	V	-56.8	1.7	4.3	2.2	-56.3	-36.0	-20.3	
398.60	40.0	V	-65.1	2.4	6.0	3.9	-63.6	-36.0	-27.6	
486.90	32.9	V	-70.4	2.6	6.2	4.0	-69.0	-36.0	-33.0	
599.40	34.0	V	-68.3	2.9	6.9	4.8	-66.5	-36.0	-30.5	
615.90	30.7	V	-71.2	2.9	6.9	4.7	-69.4	-36.0	-33.4	
697.40	29.6	V	-70.9	3.1	6.8	4.6	-69.4	-36.0	-33.4	
HI Ch. (2472 MHz)										
144.50	44.9	H	-63.1	1.5	-0.3	-2.5	-67.1	-36.0	-31.1	
199.80	61.6	H	-48.1	1.7	4.3	2.2	-47.6	-36.0	-11.6	
398.60	44.6	H	-59.6	2.4	6.0	3.9	-58.1	-36.0	-22.1	
486.90	36.3	H	-67.2	2.6	6.2	4.0	-65.9	-36.0	-29.9	
599.40	38.4	H	-64.3	2.9	6.9	4.8	-62.5	-36.0	-26.5	
615.90	30.4	H	-72.2	2.9	6.9	4.7	-70.4	-36.0	-34.4	
697.40	30.0	H	-71.0	3.1	6.8	4.6	-69.6	-36.0	-33.6	
144.50	40.7	V	-68.0	1.5	-0.3	-2.5	-72.0	-36.0	-36.0	
199.80	54.8	V	-54.8	1.7	4.3	2.2	-54.3	-36.0	-18.3	
398.60	37.5	V	-67.6	2.4	6.0	3.9	-66.1	-36.0	-30.1	
486.90	32.9	V	-70.5	2.6	6.2	4.0	-69.1	-36.0	-33.1	
599.40	32.7	V	-69.7	2.9	6.9	4.8	-67.8	-36.0	-31.8	
615.90	31.6	V	-70.3	2.9	6.9	4.7	-68.5	-36.0	-32.5	
697.40	30.3	V	-70.2	3.1	6.8	4.6	-68.7	-36.0	-32.7	

Rev. 4.29.7

RADIATED SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont 5m B-Chamber

Test Equipment:

EMCO Horn 1-18GHz

T73; S/N: 6717 @3m

Horn > 18GHz

Limit

ETSI 300 328 Tx

☒ High Pass Filter

Hi Frequency Cables

☐ (2 ft)
 ☐ (2 ~ 3 ft)
 ☐ (4 ~ 6 ft)
 ☒ (12 ft)

Pre-amplifier 1-26GHz

T34 HP 8449B

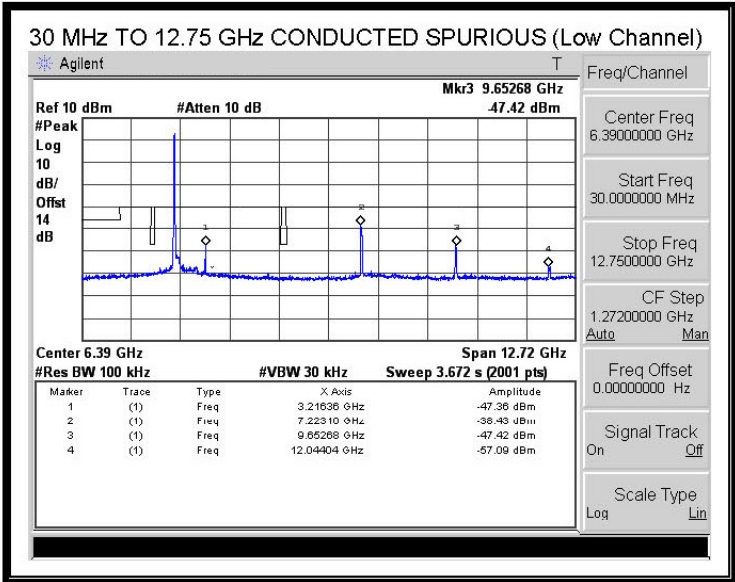
Pre-amplifier 26-40GHz

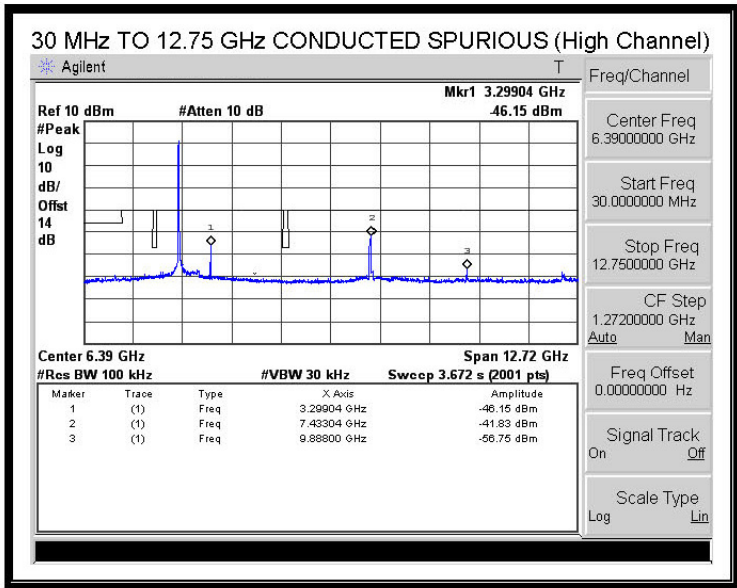
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch. (2412 MHz)										
1.047	44.0	H	-66.1	3.1	6.5	4.4	-64.8	-30.0	-34.8	
1.200	45.0	H	-64.4	3.3	6.9	4.7	-62.9	-30.0	-32.9	
1.505	41.8	H	-66.0	3.7	7.6	5.5	-64.2	-30.0	-34.2	
1.600	49.5	H	-57.7	3.8	7.9	5.7	-55.8	-30.0	-25.8	
4.824	32.0	H	-62.0	6.9	10.5	8.4	-60.5	-30.0	-30.5	
7.236	29.3	H	-59.8	8.2	12.4	10.3	-57.7	-30.0	-27.7	
9.648	41.5	H	-44.7	9.7	13.2	11.0	-43.4	-30.0	-13.4	
1.047	43.7	V	-67.1	3.1	6.5	4.4	-65.8	-30.0	-35.8	
1.200	46.0	V	-64.0	3.3	6.9	4.7	-62.5	-30.0	-32.5	
1.376	41.7	V	-67.4	3.5	7.3	5.2	-65.7	-30.0	-35.7	
1.505	44.5	V	-64.0	3.7	7.6	5.5	-62.1	-30.0	-32.1	
1.600	47.9	V	-60.0	3.8	7.9	5.7	-58.1	-30.0	-28.1	
4.824	35.9	V	-58.4	6.9	10.5	8.4	-56.9	-30.0	-26.9	
7.236	31.0	V	-58.9	8.2	12.4	10.3	-56.8	-30.0	-26.8	
9.648	50.5	V	-35.7	9.7	13.2	11.0	-34.4	-30.0	-4.4	
Hi Ch. (2472 MHz)										
4.944	32.1	H	-61.7	7.0	10.7	8.5	-60.1	-30.0	-30.1	
7.416	30.3	H	-58.6	8.3	12.6	10.4	-56.4	-30.0	-26.4	
9.888	39.4	H	-45.8	9.9	13.3	11.1	-44.6	-30.0	-14.6	
4.944	35.2	V	-58.9	7.0	10.7	8.5	-57.4	-30.0	-27.4	
7.416	32.2	V	-57.4	8.3	12.6	10.4	-55.3	-30.0	-25.3	
9.888	48.7	V	-36.4	9.9	13.3	11.1	-35.2	-30.0	-5.2	

Rev. 4.12.7

7.6.2. 802.11n HT20 MODE

CONDUCTED SPURIOUS EMISSIONS





RADIATED SPURIOUS EMISSIONS BELOW 1 GHz

30 - 1000MHz Substitution Measurement
Compliance Certification Services, Fremont 5m A-Chamber

Test Equipment:

Bilog Antenna

5m Chamber Sunol Bilog

Cable

5m Chamber Cable

Pre-amplifier 8447D

T5 8447D

Limit

ETSI 300 328 Tx

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP ERP	Limit (dBm)	Margin (dB)	Notes
Low Ch. (2412 MHz)										
144.50	43.5	H	-64.6	1.5	-0.3	-2.5	-68.6	-36.0	-32.6	
199.80	60.9	H	-48.8	1.7	4.3	2.2	-48.4	-36.0	-12.4	
398.60	45.3	H	-58.9	2.4	6.0	3.9	-57.4	-36.0	-21.4	
486.90	36.4	H	-67.1	2.6	6.2	4.0	-65.7	-36.0	-29.7	
599.40	37.2	H	-65.5	2.9	6.9	4.8	-63.6	-36.0	-27.6	
615.90	29.4	H	-73.2	2.9	6.9	4.7	-71.4	-36.0	-35.4	
697.40	33.1	H	-68.0	3.1	6.8	4.6	-66.6	-36.0	-30.6	
144.50	39.9	V	-68.8	1.5	-0.3	-2.5	-72.8	-36.0	-36.8	
199.80	57.3	V	-52.3	1.7	4.3	2.2	-51.9	-36.0	-15.9	
398.60	40.0	V	-65.1	2.4	6.0	3.9	-63.6	-36.0	-27.6	
486.90	31.5	V	-71.8	2.6	6.2	4.0	-70.5	-36.0	-34.5	
599.40	33.9	V	-68.5	2.9	6.9	4.8	-66.6	-36.0	-30.6	
615.90	31.0	V	-71.0	2.9	6.9	4.7	-69.2	-36.0	-33.2	
697.40	29.4	V	-71.1	3.1	6.8	4.6	-69.6	-36.0	-33.6	
HI Ch. (2472 MHz)										
144.50	45.0	H	-63.0	1.5	-0.3	-2.5	-67.0	-36.0	-31.0	
199.80	61.1	H	-48.6	1.7	4.3	2.2	-48.1	-36.0	-12.1	
398.60	43.7	H	-60.5	2.4	6.0	3.9	-59.0	-36.0	-23.0	
486.90	35.4	H	-68.1	2.6	6.2	4.0	-66.7	-36.0	-30.7	
599.40	37.5	H	-65.2	2.9	6.9	4.8	-63.3	-36.0	-27.3	
615.90	29.4	H	-73.2	2.9	6.9	4.7	-71.4	-36.0	-35.4	
697.40	29.0	H	-72.0	3.1	6.8	4.6	-70.6	-36.0	-34.6	
144.50	40.1	V	-68.6	1.5	-0.3	-2.5	-72.6	-36.0	-36.6	
199.80	57.2	V	-52.3	1.7	4.3	2.2	-51.9	-36.0	-15.9	
398.60	42.1	V	-63.0	2.4	6.0	3.9	-61.5	-36.0	-25.5	
486.90	31.6	V	-71.7	2.6	6.2	4.0	-70.4	-36.0	-34.4	
599.40	33.8	V	-68.6	2.9	6.9	4.8	-66.7	-36.0	-30.7	
615.90	29.6	V	-72.4	2.9	6.9	4.7	-70.6	-36.0	-34.6	
697.40	29.0	V	-71.5	3.1	6.8	4.6	-70.0	-36.0	-34.0	

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RADIATED SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont 5m B-Chamber

Test Equipment:

EMCO Horn 1-18GHz

T59; S/N: 3245 @3m

Horn > 18GHz

Limit

ETSI 300 328 Tx

☒ High Pass Filter

Hi Frequency Cables

☐ (2 ft)
 ☐ (2 ~ 3 ft)
 ☐ (4 ~ 6 ft)
 ☒ (12 ft)

Pre-amplifier 1-26GHz

T145 Agilent 3008A

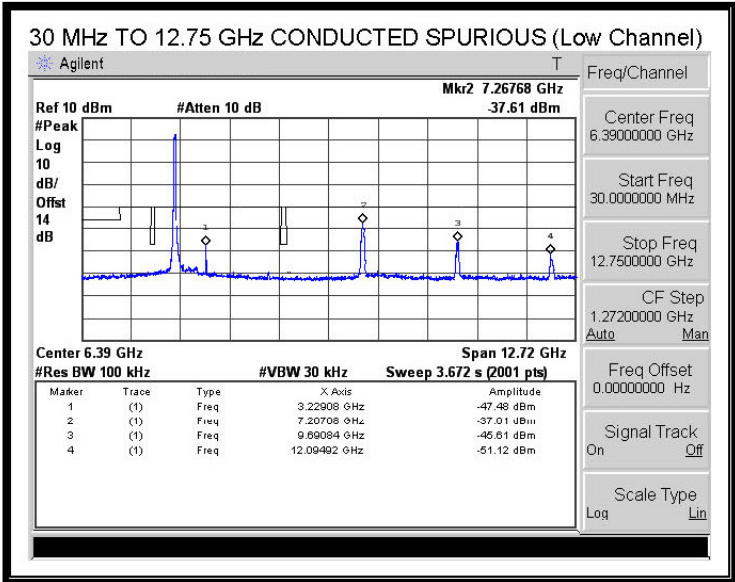
Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch. (2412 MHz)										
4.824	32.0	H	-62.2	6.9	10.7	8.5	-60.6	-30.0	-30.6	
7.236	29.2	H	-60.0	8.2	12.2	10.1	-58.1	-30.0	-28.1	
9.648	31.5	H	-56.3	9.7	13.2	11.1	-54.9	-30.0	-24.9	
4.824	33.1	V	-61.5	6.9	10.7	8.5	-59.8	-30.0	-29.8	
7.236	31.5	V	-58.5	8.2	12.2	10.1	-56.6	-30.0	-26.6	
9.648	34.8	V	-53.0	9.7	13.2	11.1	-51.6	-30.0	-21.6	
Hi Ch. (2472 MHz)										
4.944	31.2	H	-62.9	7.0	10.8	8.7	-61.2	-30.0	-31.2	
7.416	30.4	H	-58.5	8.3	12.3	10.1	-56.6	-30.0	-26.6	
9.888	29.9	H	-57.5	9.9	13.4	11.2	-56.2	-30.0	-26.2	
4.944	31.6	V	-62.8	7.0	10.8	8.7	-61.2	-30.0	-31.2	
7.416	29.8	V	-59.9	8.3	12.3	10.1	-58.0	-30.0	-28.0	
9.888	33.7	V	-53.8	9.9	13.4	11.2	-52.5	-30.0	-22.5	

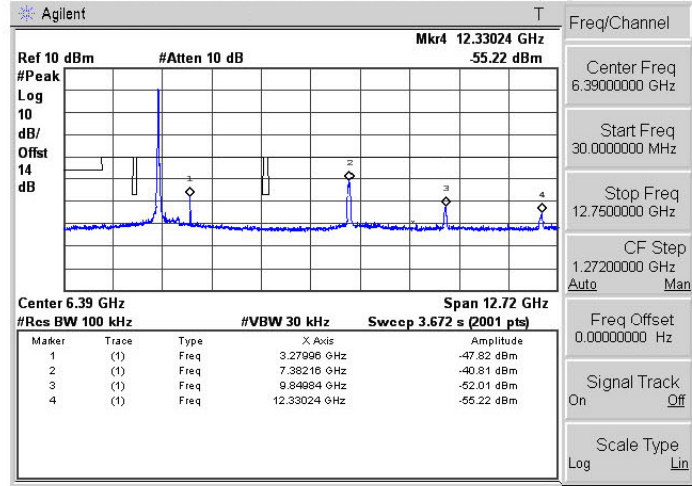
Rev. 4.12.7

7.6.3. 802.11n HT40 MODE

CONDUCTED SPURIOUS EMISSIONS



30 MHz TO 12.75 GHz CONDUCTED SPURIOUS (High Channel)



RADIATED SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont 5m B-Chamber

Test Equipment:

EMCO Horn 1-18GHz

T73; S/N: 6717 @3m

Horn > 18GHz

Limit

ETSI 300 328 Tx

☒ High Pass Filter

HI Frequency Cables

☐ (2 ft)
 ☐ (2 ~ 3 ft)
 ☐ (4 ~ 6 ft)
 ☒ (12 ft)

Pre-amplifier 1-26GHz

T34 HP 8449B

Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch. (2422 MHz)										
4.844	31.3	H	-62.7	6.9	10.6	8.4	-61.2	-30.0	-31.2	
7.266	29.0	H	-60.0	8.2	12.5	10.3	-57.9	-30.0	-27.9	
9.688	30.1	H	-56.0	9.7	13.2	11.0	-54.7	-30.0	-24.7	
4.844	32.0	V	-62.3	6.9	10.6	8.4	-60.8	-30.0	-30.8	
7.266	30.3	V	-59.5	8.2	12.5	10.3	-57.4	-30.0	-27.4	
9.688	32.0	V	-54.1	9.7	13.2	11.0	-52.8	-30.0	-22.8	
Hi Ch. (2462 MHz)										
4.924	30.3	H	-63.5	7.0	10.7	8.5	-62.0	-30.0	-32.0	
7.386	29.5	H	-59.4	8.3	12.5	10.4	-57.3	-30.0	-27.3	
9.848	30.1	H	-55.2	9.9	13.3	11.1	-54.0	-30.0	-24.0	
4.924	31.3	V	-62.8	7.0	10.7	8.5	-61.3	-30.0	-31.3	
7.386	30.3	V	-59.4	8.3	12.5	10.4	-57.3	-30.0	-27.3	
9.848	32.7	V	-52.6	9.9	13.3	11.1	-51.4	-30.0	-21.4	

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7.7. RECEIVER SPURIOUS EMISSIONS

LIMIT

ETSI EN 300 328 Clause 4.3.7.2

Table 4: Narrowband Spurious Emissions Limits for Receivers

Frequency Range	Limit
30 MHz to 1.0 GHz	-57 dBm
1.0 GHz to 12.75 GHz	-47 dBm

Table 5: Wideband Spurious Emissions Limits for Receivers

Frequency Range	Limit
30 MHz to 1.0 GHz	-107 dBm/Hz
1.0 GHz to 12.75 GHz	-97 dBm/Hz

TEST PROCEDURE

EN 300 328 Clause 5.7.6

TEST PROTOCOL

EN 300 328 Clause 5.7.6

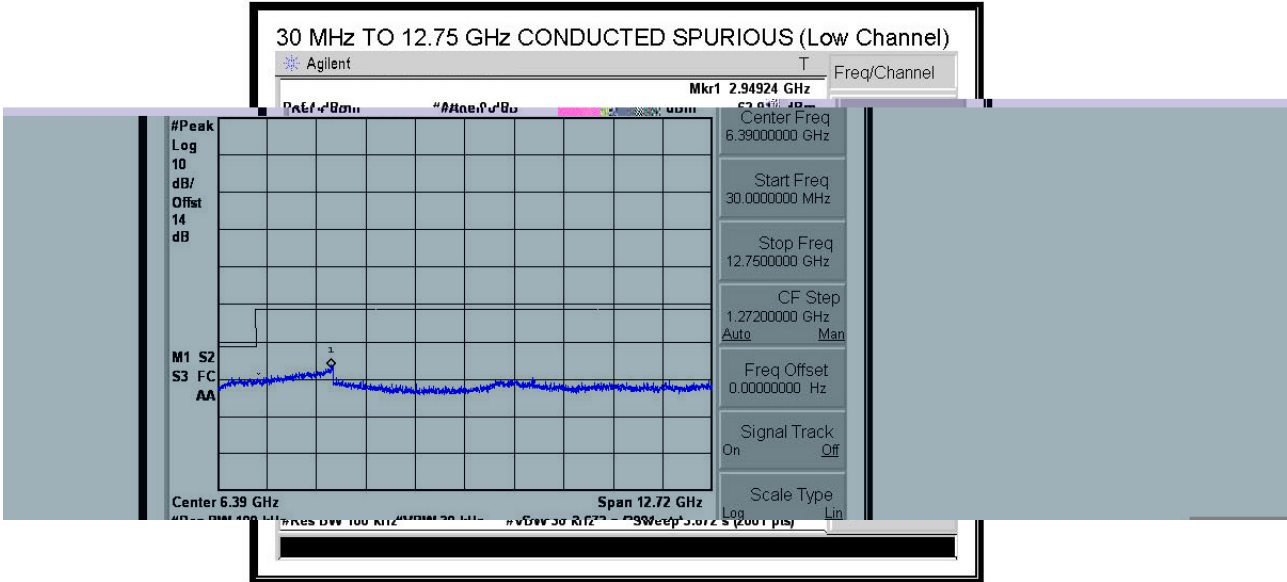
The levels of spurious emissions are measured as

their power in a specified load (conducted spurious emissions); and their effective radiated power when radiated by the cabinet or structure of the equipment (cabinet radiation).

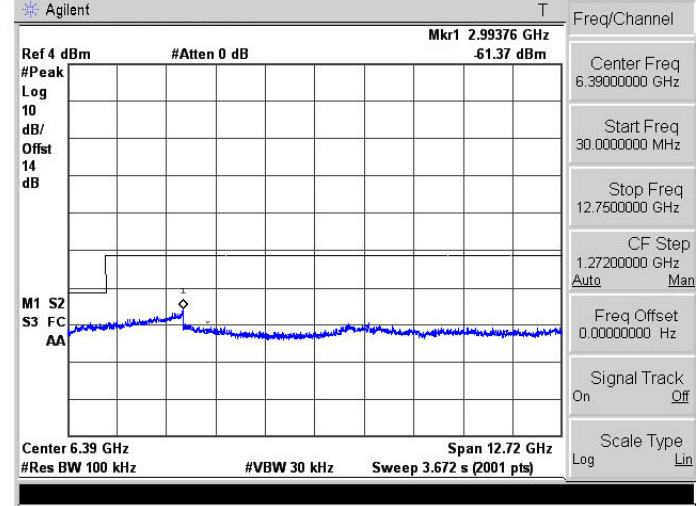
RESULTS

7.7.1. 20 MHz BANDWIDTH

CONDUCTED SPURIOUS EMISSIONS

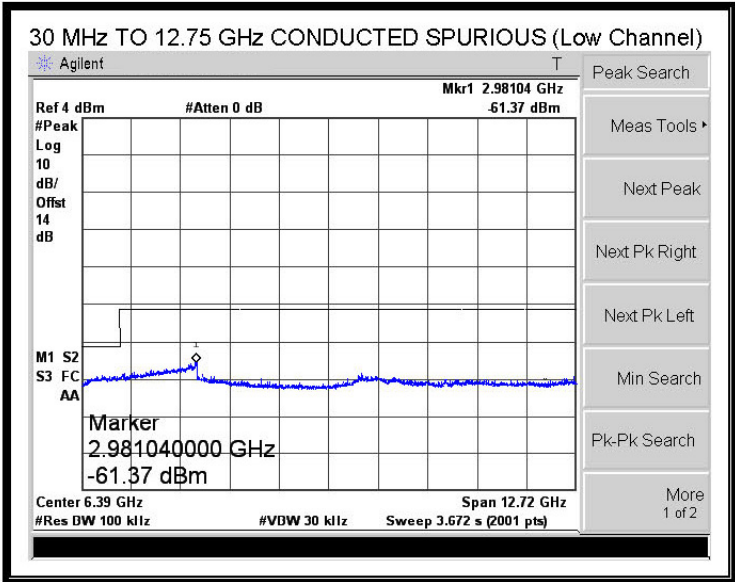


30 MHz TO 12.75 GHz CONDUCTED SPURIOUS (High Channel)

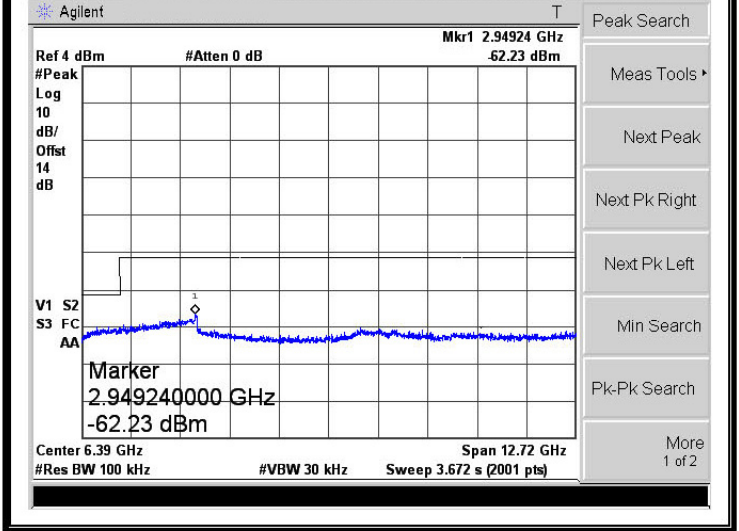


7.7.2. 40 MHz BANDWIDTH

CONDUCTED SPURIOUS EMISSIONS



30 MHz TO 12.75 GHz CONDUCTED SPURIOUS (High Channel)



RADIATED SPURIOUS EMISSIONS BELOW 1 GHz

30 - 1000MHz Substitution Measurement
Compliance Certification Services, Fremont 5m A-Chamber

Test Equipment:

Bilog Antenna

5m Chamber Sunol Bilog

Cable

5m Chamber Cable

Pre-amplifier 8447D

T5 8447D

Limit

ETSI 300 328 Rx

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP ERP	Limit (dBm)	Margin (dB)	Notes
Low Ch. (2412 MHz)										
144.50	44.0	H	-64.0	1.5	-0.3	-2.5	-68.0	-57.0	-11.0	
398.60	45.3	H	-58.8	2.4	6.0	3.9	-57.3	-57.0	-0.3	
486.90	36.3	H	-67.1	2.6	6.2	4.0	-65.8	-57.0	-8.8	
599.40	37.2	H	-65.5	2.9	6.9	4.8	-63.6	-57.0	-6.6	
615.90	28.3	H	-74.3	2.9	6.9	4.7	-72.5	-57.0	-15.5	
697.40	34.6	H	-66.5	3.1	6.8	4.6	-65.1	-57.0	-8.1	
144.50	39.5	V	-69.3	1.5	-0.3	-2.5	-73.3	-57.0	-16.3	
398.60	41.2	V	-63.9	2.4	6.0	3.9	-62.4	-57.0	-5.4	
486.90	33.4	V	-69.9	2.6	6.2	4.0	-68.5	-57.0	-11.5	
599.40	33.6	V	-68.8	2.9	6.9	4.8	-67.0	-57.0	-10.0	
615.90	32.0	V	-70.0	2.9	6.9	4.7	-68.2	-57.0	-11.2	
697.40	30.0	V	-70.5	3.1	6.8	4.6	-69.0	-57.0	-12.0	
HI Ch. (2472 MHz)										
144.50	44.0	H	-64.1	1.5	-0.3	-2.5	-68.1	-57.0	-11.1	
398.60	44.0	H	-60.1	2.4	6.0	3.9	-58.6	-57.0	-1.6	
486.90	35.3	H	-68.1	2.6	6.2	4.0	-66.8	-57.0	-9.8	
599.40	38.7	H	-64.0	2.9	6.9	4.8	-62.1	-57.0	-5.1	
615.90	31.2	H	-71.3	2.9	6.9	4.7	-69.5	-57.0	-12.5	
697.40	31.2	H	-69.9	3.1	6.8	4.6	-68.4	-57.0	-11.4	
144.50	38.8	V	-69.9	1.5	-0.3	-2.5	-73.9	-57.0	-16.9	
398.60	39.2	V	-65.9	2.4	6.0	3.9	-64.4	-57.0	-7.4	
486.90	31.4	V	-71.9	2.6	6.2	4.0	-70.6	-57.0	-13.6	
599.40	31.3	V	-71.1	2.9	6.9	4.8	-69.2	-57.0	-12.2	
615.90	28.6	V	-73.4	2.9	6.9	4.7	-71.6	-57.0	-14.6	
697.40	28.8	V	-71.7	3.1	6.8	4.6	-70.2	-57.0	-13.2	

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RADIATED SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Substitution Measurement
 Compliance Certification Services, Fremont 5m B-Chamber

Test Equipment:

EMCO Horn 1-18GHz

T73; S/N: 6717 @3m

Horn > 18GHz

Limit

ETSI 300 328 Rx

☐ High Pass Filter

HI Frequency Cables
☐ (2 ft) ☐ (2 ~ 3 ft) ☐ (4 ~ 6 ft) ☒ (12 ft)

Pre-amplifier 1-26GHz

T34 HP 8449B

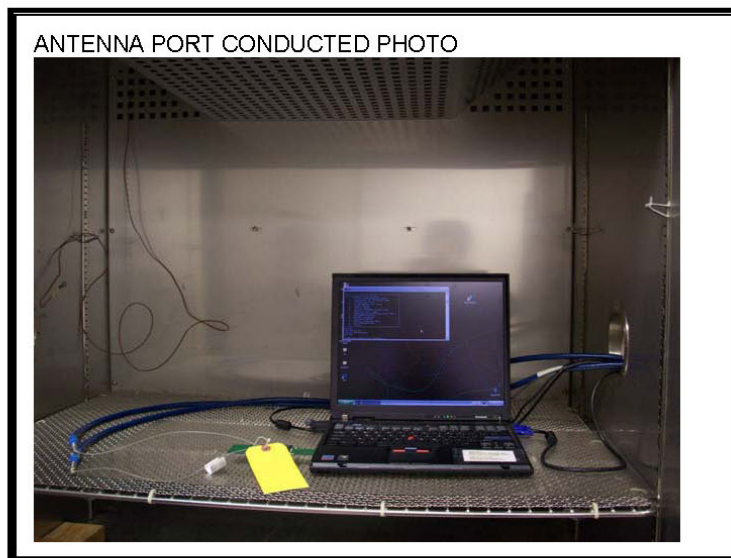
Pre-amplifier 26-40GHz

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch. (2412 MHz)										
1.049	47.7	H	-63.4	3.1	6.5	4.4	-62.1	-47.0	-15.1	
1.099	43.6	H	-67.2	3.1	6.7	4.5	-65.8	-47.0	-18.8	
1.198	42.9	H	-67.4	3.3	6.9	4.7	-65.9	-47.0	-18.9	
1.500	44.8	H	-63.9	3.7	7.6	5.5	-62.1	-47.0	-15.1	
1.594	45.5	H	-62.8	3.8	7.8	5.7	-60.9	-47.0	-13.9	
1.801	41.0	H	-66.2	4.0	8.3	6.2	-64.1	-47.0	-17.1	
2.494	41.1	H	-63.3	4.9	9.6	7.4	-60.7	-47.0	-13.7	
1.049	42.6	V	-69.2	3.1	6.5	4.4	-67.9	-47.0	-20.9	
1.099	43.5	V	-68.1	3.1	6.7	4.5	-66.7	-47.0	-19.7	
1.198	41.3	V	-69.8	3.3	6.9	4.7	-68.3	-47.0	-21.3	
1.500	42.2	V	-67.3	3.7	7.6	5.5	-65.5	-47.0	-18.5	
1.594	50.2	V	-58.8	3.8	7.8	5.7	-56.9	-47.0	-9.9	
2.494	42.3	V	-62.2	4.9	9.6	7.4	-59.7	-47.0	-12.7	
4.982	31.9	V	-63.1	7.0	10.7	8.6	-61.6	-47.0	-14.6	
Hi Ch. (2472 MHz)										
1.049	45.8	H	-65.3	3.1	6.5	4.4	-64.0	-47.0	-17.0	
1.198	44.0	H	-66.3	3.3	6.9	4.7	-64.8	-47.0	-17.8	
1.500	44.1	H	-64.6	3.7	7.6	5.5	-62.8	-47.0	-15.8	
1.594	42.7	H	-65.5	3.8	7.8	5.7	-63.6	-47.0	-16.6	
1.801	40.1	H	-67.1	4.0	8.3	6.2	-64.9	-47.0	-17.9	
2.494	41.4	H	-62.9	4.9	9.6	7.4	-60.4	-47.0	-13.4	
1.049	42.7	V	-69.2	3.1	6.5	4.4	-67.8	-47.0	-20.8	
1.094	44.4	V	-67.2	3.1	6.6	4.5	-65.8	-47.0	-18.8	
1.198	42.7	V	-68.4	3.3	6.9	4.7	-66.9	-47.0	-19.9	
1.500	41.7	V	-67.8	3.7	7.6	5.5	-66.0	-47.0	-19.0	
1.594	49.9	V	-59.0	3.8	7.8	5.7	-57.1	-47.0	-10.1	
2.494	44.6	V	-59.9	4.9	9.6	7.4	-57.4	-47.0	-10.4	
4.982	31.6	V	-63.4	7.0	10.7	8.6	-61.9	-47.0	-14.9	

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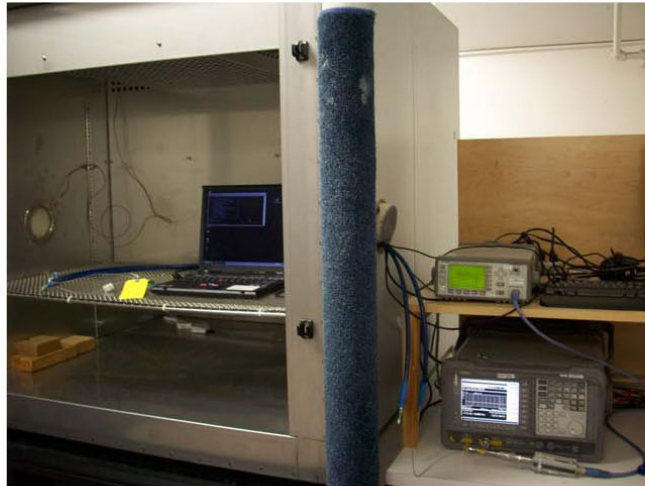
8. SETUP PHOTOS

RF CONDUCTED MEASUREMENT AT ANTENNA PORT

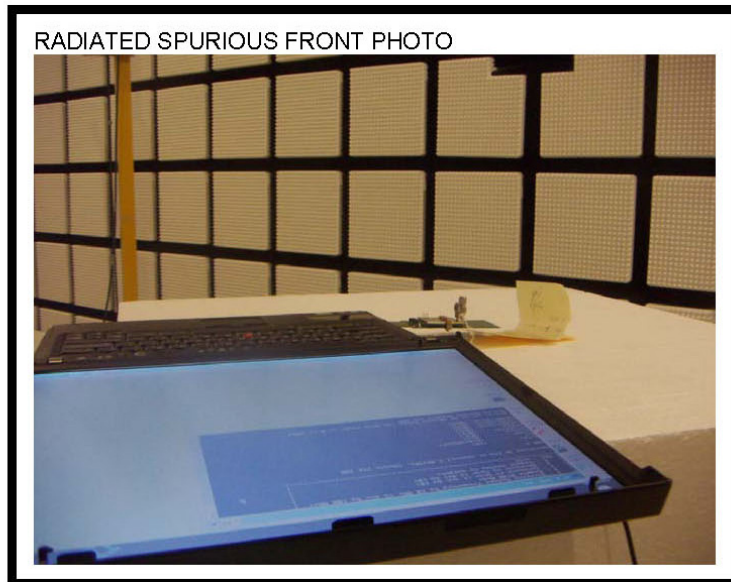


ENVIRONMENTAL CHAMBER SETUP

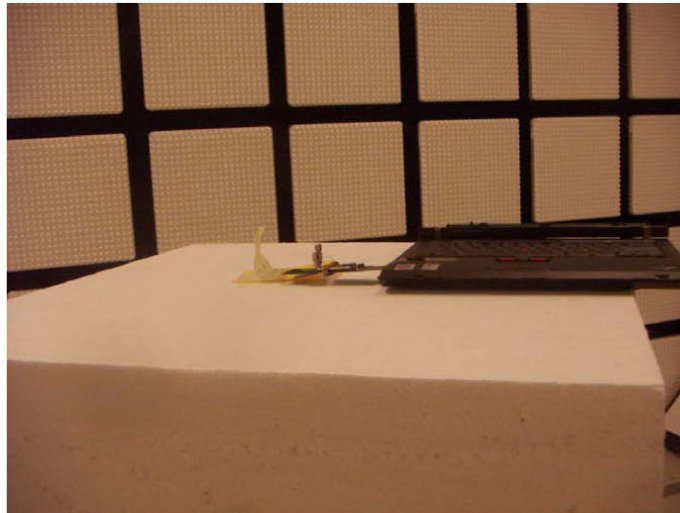
ENVIRONMENTAL CHAMBER PHOTO



RADIATED SPURIOUS EMISSIONS

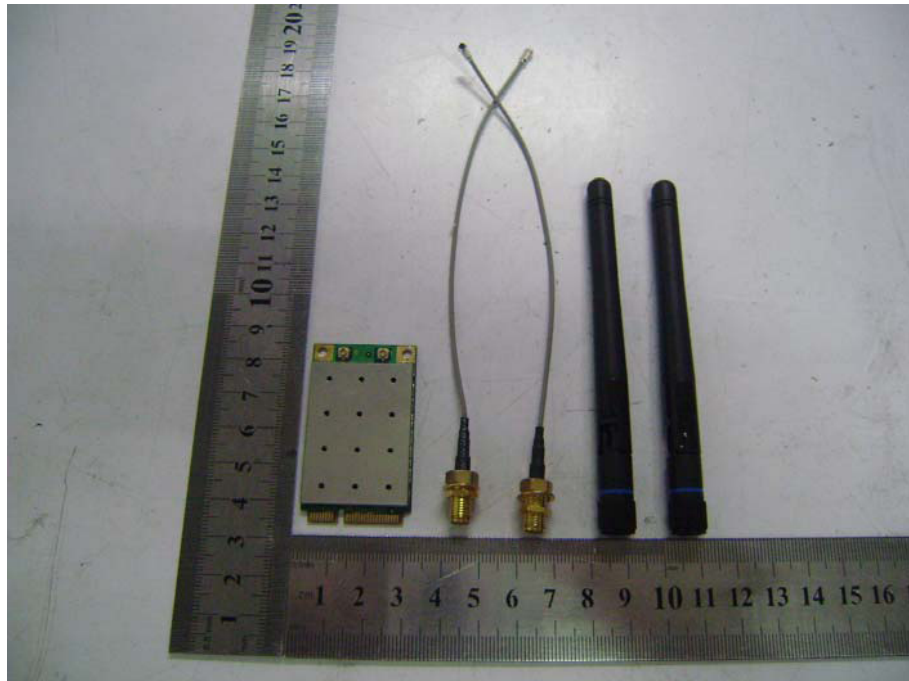


RADIATED SPURIOUS BACK PHOTO

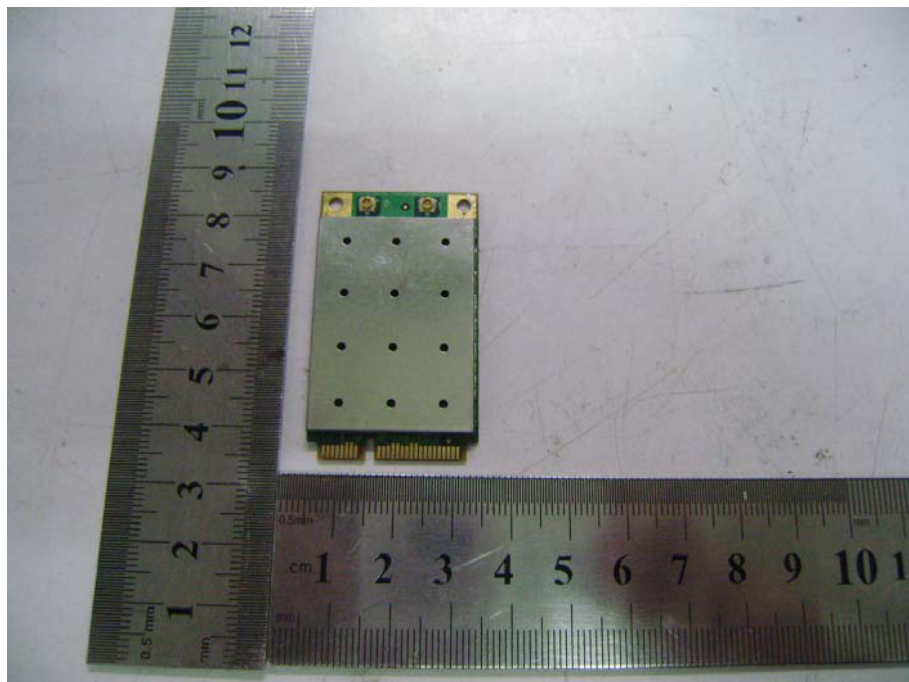


9. EUT PHOTOS

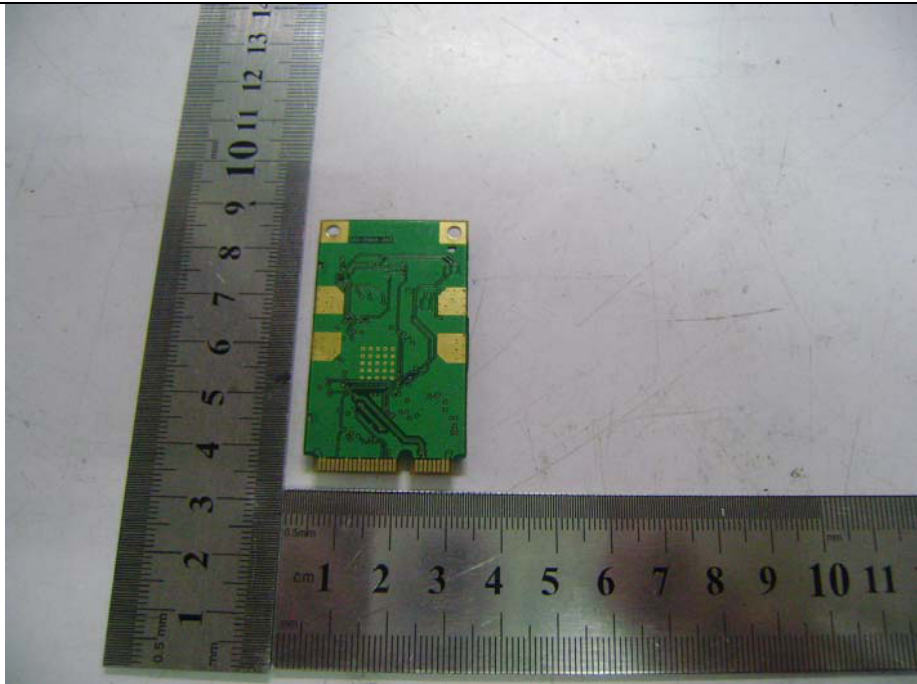
EUT View 1



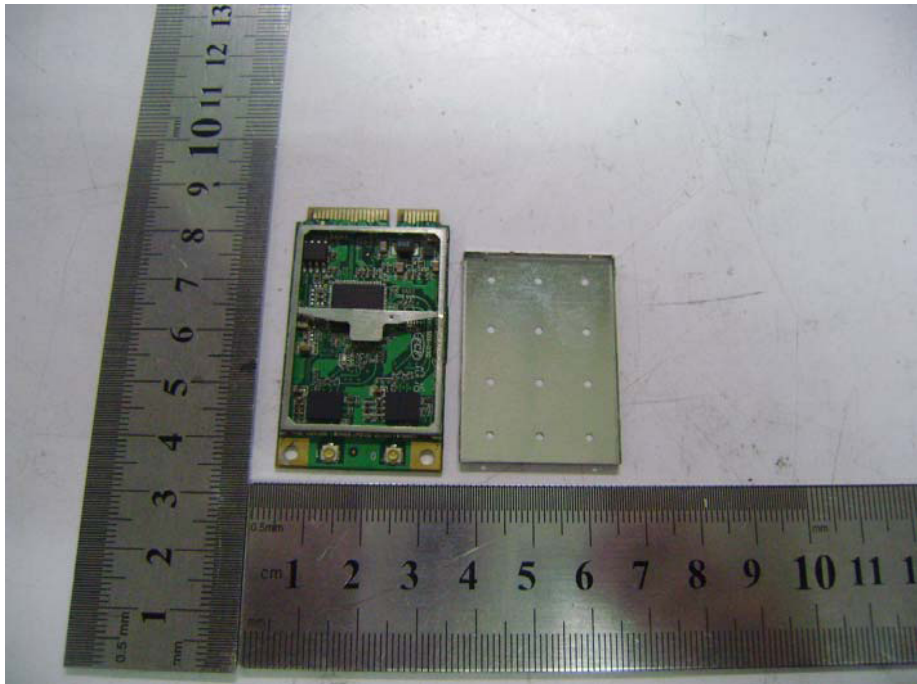
EUT View 2



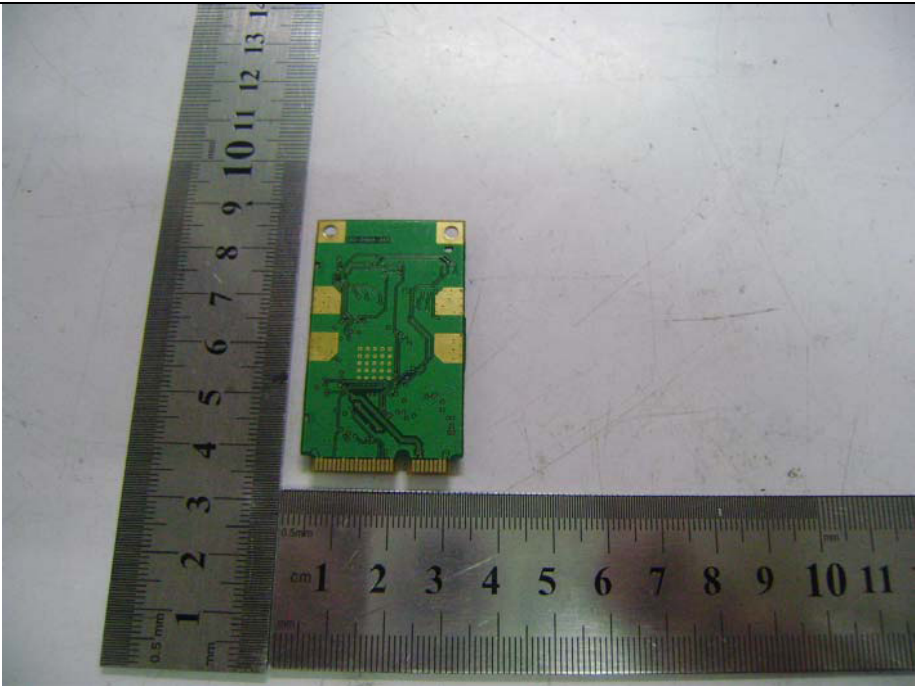
EUT View 3



Solder Board-Component View 1



Solder Board-Component View 2



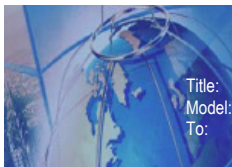
Antenna View





Antenna Connect Cable View





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Title: RF Test Report for Wireless-A/B/G/N Network Mini PCIe Adapter
Model: WLE200NX
To: EN 300 328 V1.7.1

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