HERMON LABORATORIES

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839.01
Electrical

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TEST REPORT

ACCORDING TO: FCC part 15 subpart E

FOR:

Mobile Access Networks Ltd.

RF distribution amplifier

Model:MA850

Table of contents

1 Applicant information

Client name:	Mobile Access Networks Ltd.
Address:	Ofek One Center Building 2, Northern Industrial Zone, Lod 71293, Israel
Telephone:	+972 8918 3888
Fax:	+972 8918 3844
E-mail:	kochavy@mobileaccess.com
Contact name:	Mr. Kochav Yadid, QA and Integration director

2 Equipment under test attributes

Product name:	RF distribution amplifier
Model(s):	MA850
Receipt date	5/24/2006

3 Manufacturer information

Manufacturer name:	Mobile Access Networks Ltd.
Address:	Ofek One Center Building 2, Northern Industrial Zone, Lod 71293, Israel
Telephone:	+972 8918 3888
Fax:	+972 8918 3844
E-Mail:	kochavy@mobileaccess.com
Contact name:	Mr. Kochav Yadid, QA and Integration director

4 Test details

Project ID:	16608
Location:	Hermon Laboratories Ltd. P.O.Box 23, Binyamina 30500, Israel
Test started:	75/24/2006
Test completed:	7/17/2006
Test specification(s):	FCC part 15 subpart E

5 Tests summary

Test	Status
Transmitter characteristics	
Section 15. 407(a)(3), Occupied 26 dB bandwidth	Pass
Section 15. 407(a)(3), Maximum peak output power	Pass
Section 15. 407(a)(3), Peak power spectral density	Pass
Section 15. 407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power	Pass
Section 15. 407(b), Unwanted radiated emission	Pass
Section 15. 407(f), RF exposure	Provided in documentation for Application

Testing was completed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested.
The test results relate only to the items tested. Pass/ fail decision was based on nominal values.

This test report replaces the previously issued test report identified by Doc ID:MOBRAD_FCC.17138_15.407.

	Name and Title	Date	Signature
Tested by:	Mr. A. Adelberg, test engineer	July 16, 2006	
Reviewed by:	Mrs. M. Cherniavsky, certification engineer	July 17, 2006	
Approved by:	Mr. M. Nikishin, EMC group leader	July 17, 2006	

6 EUT description

6.1 General information

The EUT, MobileAccess 850 provides secure and centralized connection for a number of 802.11a/b/g Access Points, significantly expands 802.11 coverage and enables distributing the data services over the same coax and antenna infrastructure used for distributing voice services through other MobileAccess products.

6.2 Ports and lines

Port type	Port description	Connected		Connector type	Qty.	Cable type	Cable length
		From	To				
Power	48 V DC	adapter	EUT	Power plug	1	unshielded	1.5 m
Power	AC power	mains	adapter	IEC 60320	1	unshielded	1.5 m
Signal	RS232	Open circuit	D-type	1	NA	NA	NA
Signal	Ethernet	Open circuit	RJ-45	1	NA	NA	NA
Conducted measurements							
Signal	802.11b/g	EUT	Access point	TNC modified	1	coax	0.7 m
Signal	802.11b/g	EUT	50 Ω termination	TNC modified	3	NA	NA
Signal	802.11a	EUT	Access point	TNC modified	1	coax	0.7 m
Signal	802.11a	EUT	50 Ω termination	TNC modified	3	NA	NA
RF	Antenna	EUT	50 Ω termination	n-type female	4	NA	NA
RF	CELL mobile services	EUT	Signal generators via divider/splitter	SMA female	1	coax	0.7 m
RF	CELL mobile services	EUT	50 Ω termination	SMA female	1	NA	NA
RF	PCS mobile services	EUT	50 Ω termination	SMA female	2	NA	NA
Radiated measurements							
Signal	802.11b/g	EUT	Access point	TNC modified	4	coax	0.7 m
Signal	802.11a	EUT	Access point	TNC modified	4	coax	0.7 m
RF	Antenna	EUT	antenna	n-type female	4	coax	0.7 m
RF	CELL mobile services	EUT	Signal generators via divider/splitter	SMA female	2	coax	0.7 m
RF	PCS mobile services	EUT	Signal generators via divider/splitter	SMA female	2	coax	0.7 m

6.3 Support and test equipment

Description	Manufacturer	Model number	Serial number
Aironet 1240AG series 802.11a/b/g Access Point	Cisco Systems	AIR-AP1240AG-A-K9	FTX1014B26R
			FTX1013B13Q
			FTX1015B152
			FTX1013B13L
Adapter (Access Point)	Cisco Systems	NA	PHI09050DEC
			PHI08280RGY
			PHI090803G3
			PHI0828126A
4 Sencity®Art Ultra-broadband antennas	Huber+Suhner	SWA 0859/360/4/10/V	Art. No. 23040329
Adapter (EUT)	NA	SB-480A7F-11	006291
Signal generator	HP	E4431B	U538220140
Signal generator	HP	8656A	2228A03615
Laptop	IBM	2645-4A0	5515FL6
Adapter (laptop)	IBM	N79	02K6543
Splitter	HL	NA	NA
Divider	HL	NA	NA

6.4 Operating frequencies

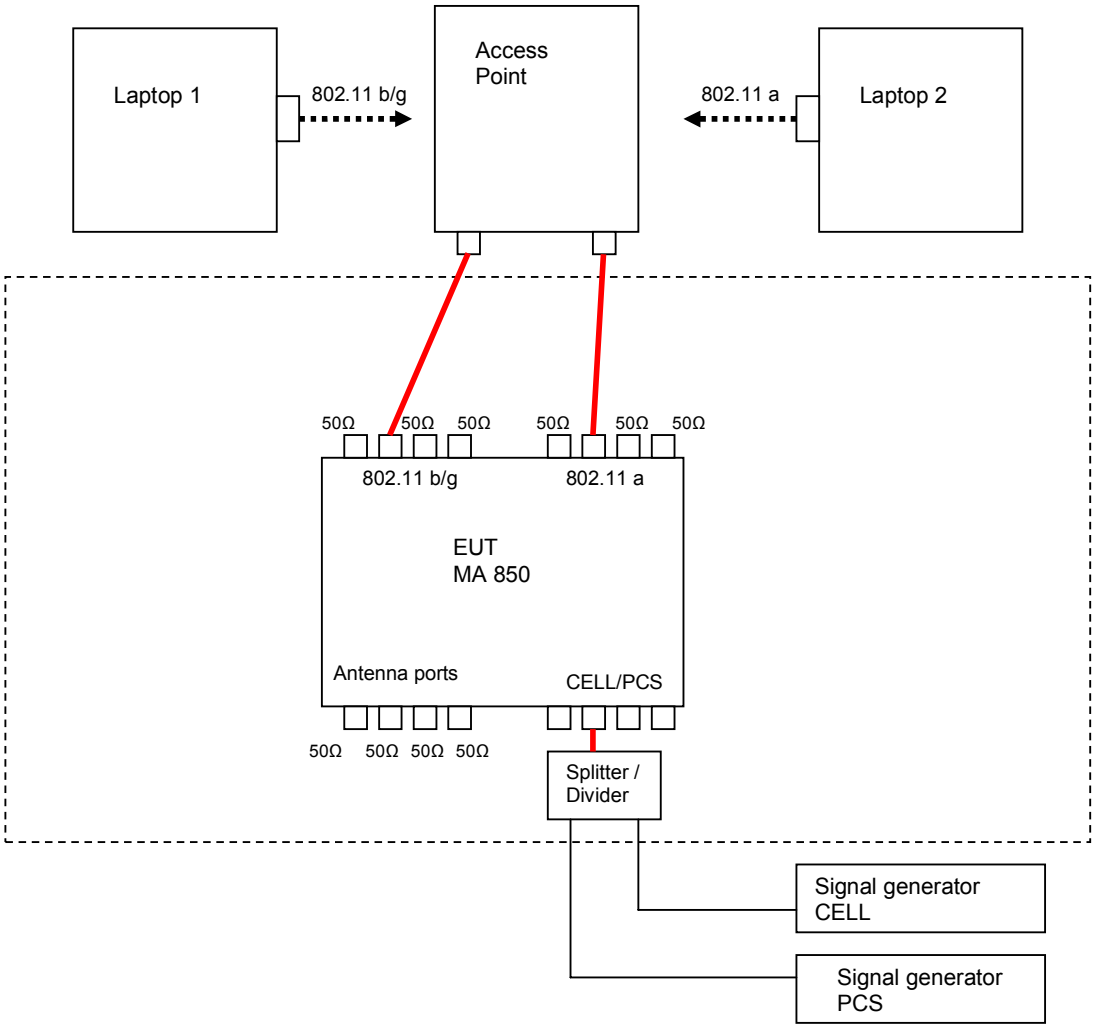
Frequency, MHz
800-1000
1800-2000
2400-2483.5
5150-5825

6.5 Changes made in the EUT

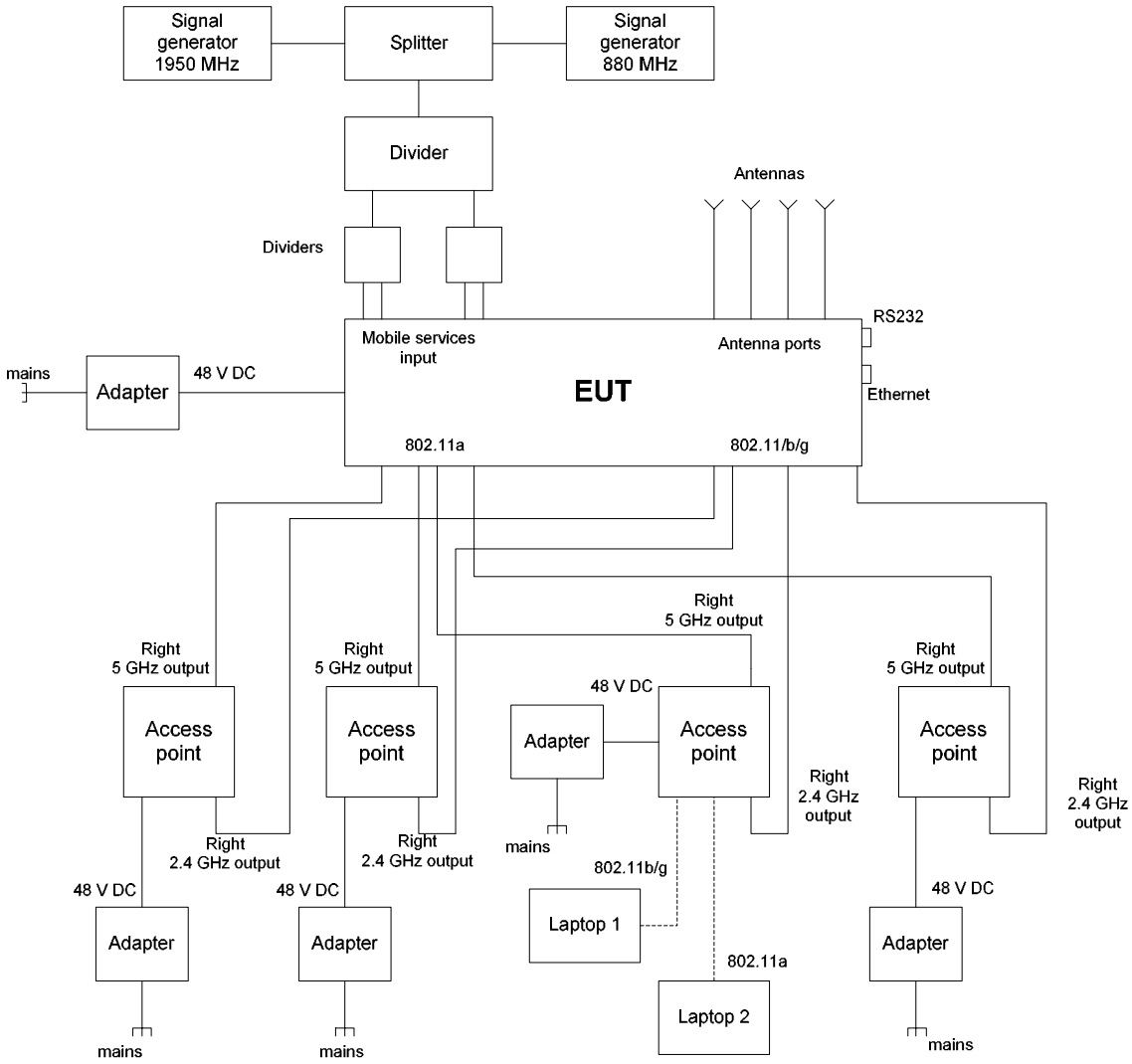
No changes were implemented.

6.6 Test configuration

6.6.1 EUT setup for conducted measurements



6.6.2 EUT setup for radiated measurements



6.7 Transmitter characteristics

Type of equipment							
	Stand-alone (Equipment with or without its own control provisions)						
X	Combined equipment (Equipment where the radio part is fully integrated within another type of equipment)						
	Plug-in card (Equipment intended for a variety of host systems)						

Intended use		**Condition of use**
X	fixed	Always at a distance more than 2 m from all people
	mobile	Always at a distance more than 20 cm from all people
	portable	May operate at a distance closer than 20 cm to human body

Assigned frequency range	1) 5150 – 5825 MHz; 2) 2400 – 2483.5 MHz

Operating frequency range	1) 5015 – 5250 MHz, 5250 – 5350 MHz, 5725 - 5825 MHz; 2) 2412 -2462 MHz

Maximum rated output power	At transmitter 50 Ω RF output connector	12.8 dBm (802.11a)
	Effective radiated power (for equipment with no RF connector)	

Is transmitter output power variable?				
	No			
X	Yes		continuous variable	
			stepped variable with stepsize	

Antenna connection					
unique coupling	X	standard connector	integral		with temporary RF connector
				X	without temporary RF connector

Antenna/s technical characteristics			
Type	Manufacturer	Model number	Gain
ultra-broadband antenna	HUBER+SUHNER	SWA 0859/360/4/10/V SENCITY-ART	7 dBi

Type of modulation	16-QAM, QPSK, BPSK

Type of multiplexing	TDMA

Transmitter power source					
	Battery	**Nominal rated voltage**		Battery type	
X	DC	**Nominal rated voltage**	48 V		
	AC mains	**Nominal rated voltage**		Frequency	

Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

7 Transmitter tests according to 47CFR part 15 subpart E requirements

7.1 Occupied 26 dB bandwidth, 802.11 a only

7.1.1 General

This test was performed to measure the 26 dB bandwidth of the device.

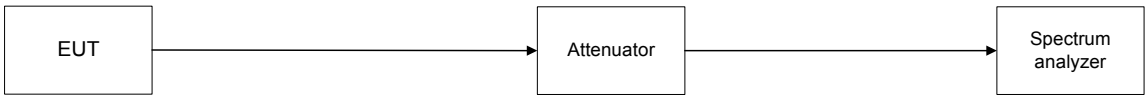
7.1.2 Test procedure

7.1.2.1 The EUT was set up as shown in Figure 7.1.1, energized and its proper operation was checked.

7.1.2.2 The EUT was set to transmit modulated carrier at maximum data rate.

7.1.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequencies at low and high edges and at the middle of the frequency range shown in Table 7.1.1. The transmitter bandwidth was measured with spectrum analyzer as frequency delta between reference points on modulation envelope and provided in Table 7.1.1 and associated plot.

Figure 7.1.1 The 26 dB bandwidth test setup



Test specification:	**Section 15.407(a)(3), 26 dB bandwidth**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/16/2006		
Temperature: 23 ºC	**Air Pressure:** 1012 hPa	**Relative Humidity:** 46 %	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Table 7.1.1 The 26 dB bandwidth test results

OPERATING FREQUENCY RANGE:	5150 - 5825 MHz
DETECTOR USED:	Peak
RESOLUTION BANDWIDTH:	300 kHz
VIDEO BANDWIDTH:	≥ RBW
MODULATION SIGNAL:	digital

Carrier Frequency, GHz	26 dB bandwidth, MHz
Data rate 6 Mbps	
5.180	17.0000
5.260	16.8750
5.320	16.8125
5.745	16.8750
5.785	16.8750
5.805	16.9375
Data rate 54 Mbps	
5.180	16.8125
5.260	16.8125
5.320	16.8125
5.745	16.8750
5.785	16.9375
5.805	16.8750

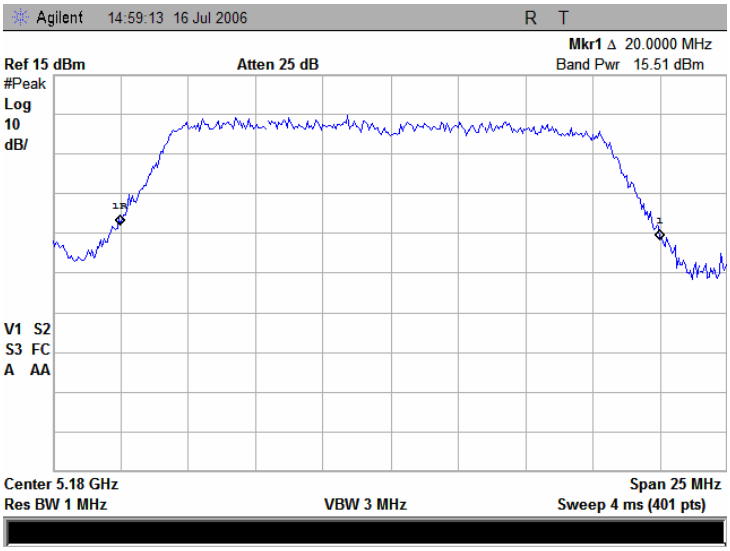
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2869						

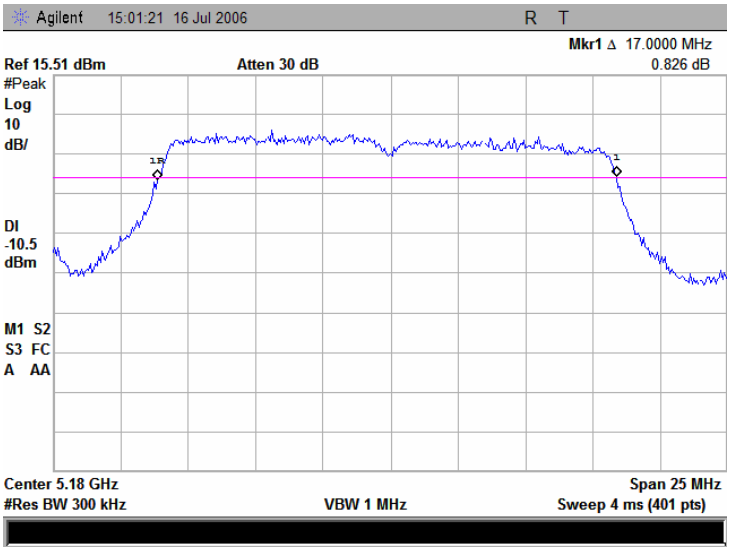
Full description is given in Appendix A.

Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.1 Reference power level measurement at 5.180 GHz, 6 Mbps

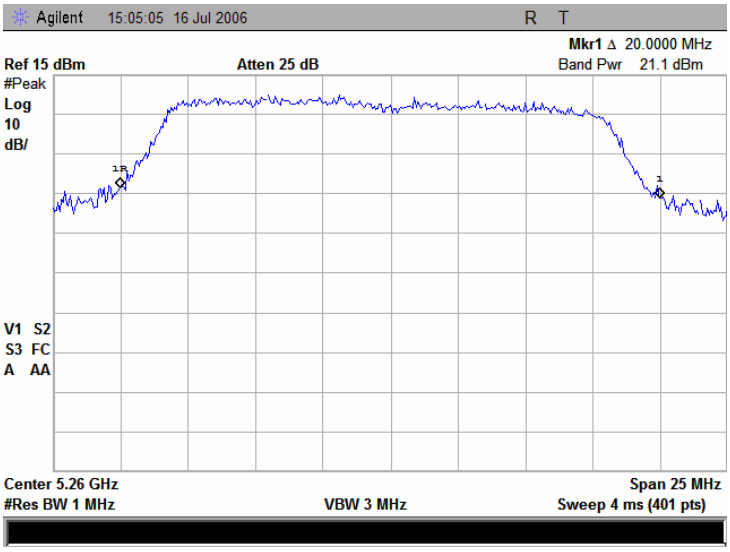


Plot 7.1.2 The 26 dB bandwidth test result at 5.180 GHz, 6 Mbps

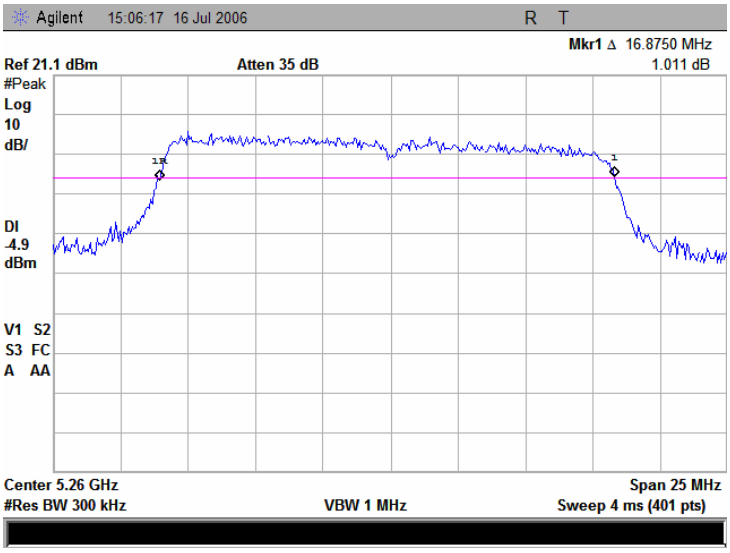


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.260 GHz, 6 Mbps

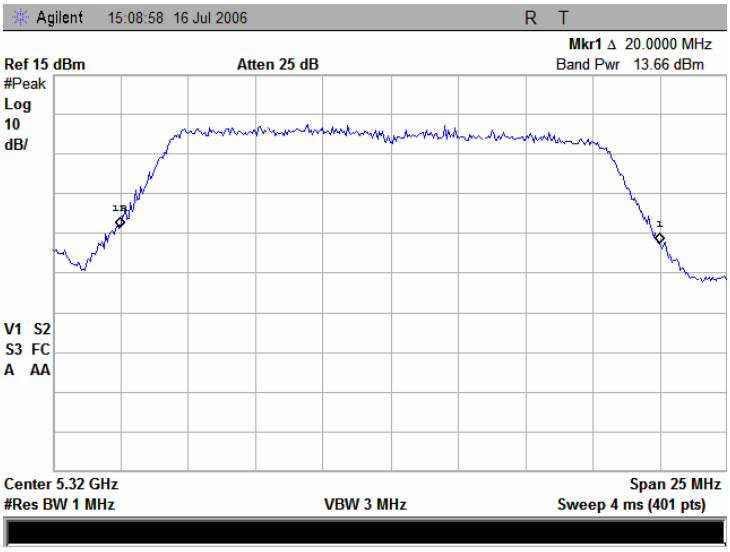


Plot 7.1.4 The 26 dB bandwidth test result at 5.260 GHz, 6 Mbps

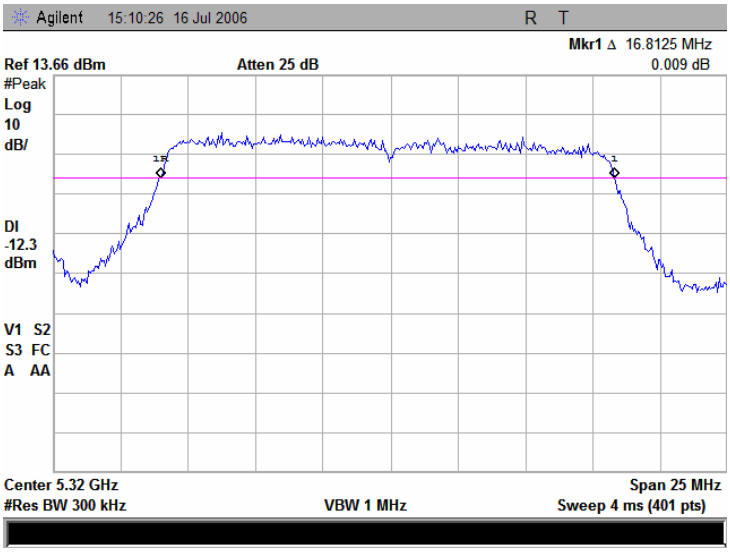


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.320 GHz, 6 Mbps

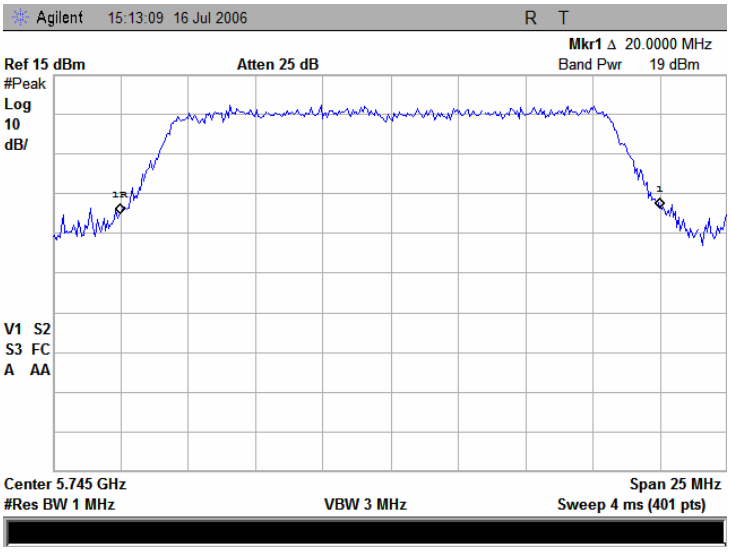


Plot 7.1.3 The 26 dB bandwidth test result at 5.320 GHz, 6 Mbps

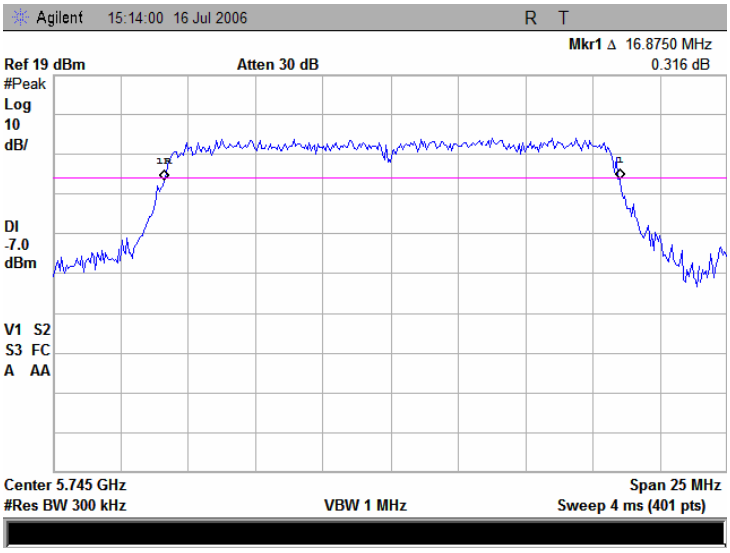


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.7450 GHz, 6 Mbps

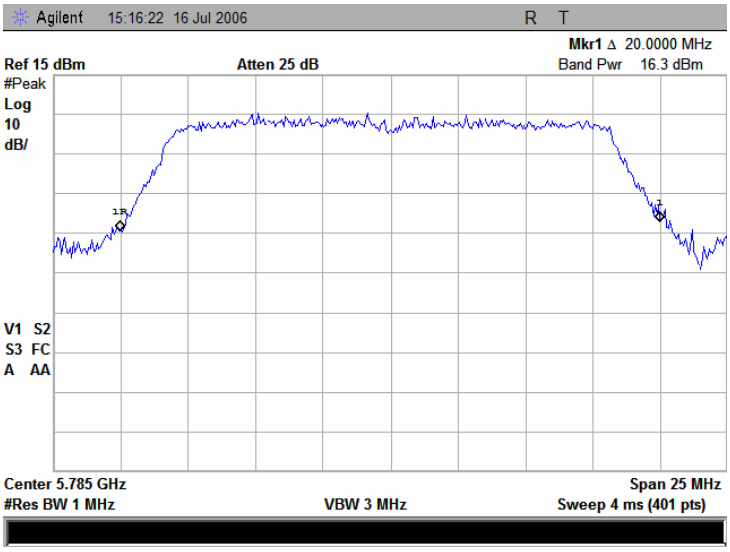


Plot 7.1.3 The 26 dB bandwidth test result at 5.7450 GHz, 6 Mbps

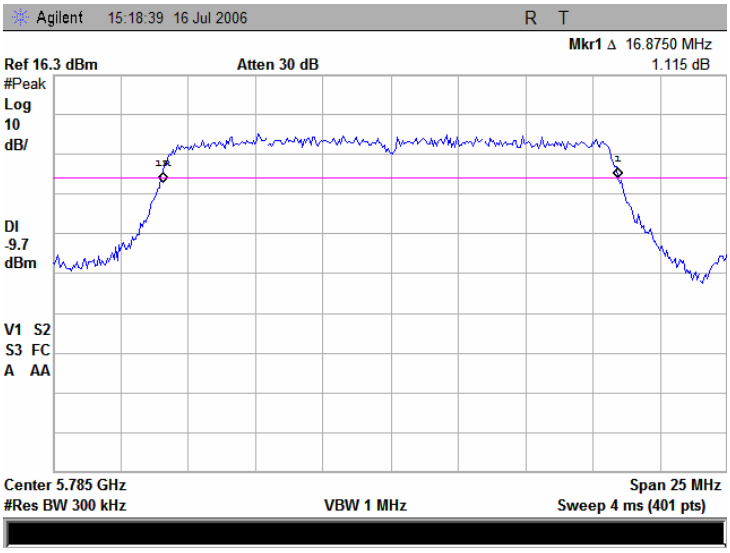


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.785 GHz, 6 Mbps

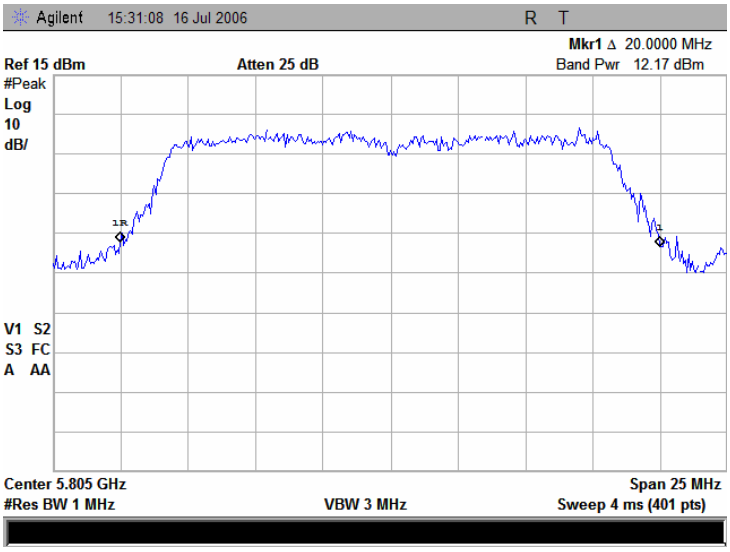


Plot 7.1.3 The 26 dB bandwidth test result at 5.785 GHz, 6 Mbps

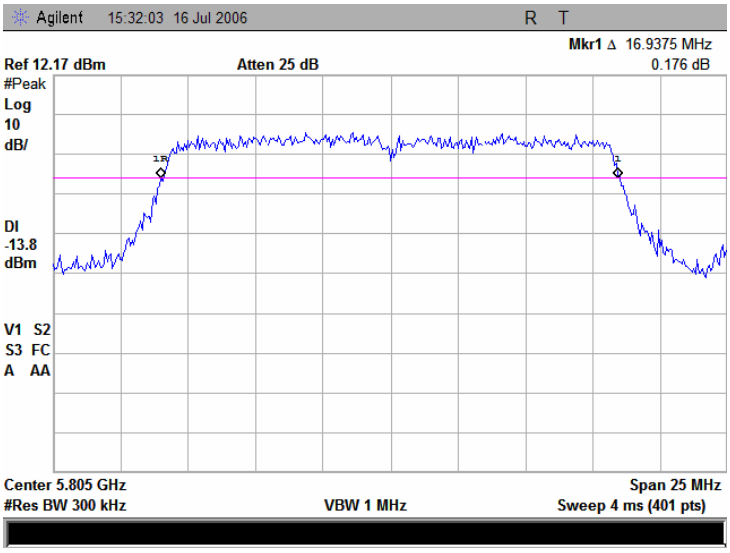


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.805 GHz, 6 Mbps

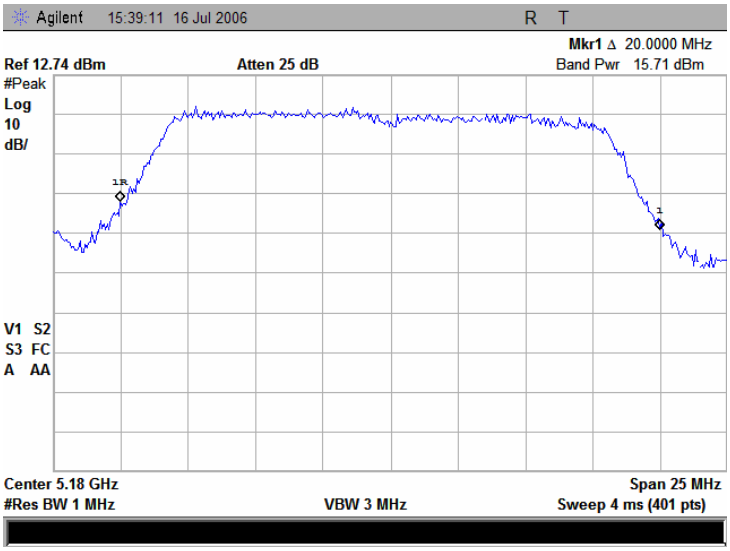


Plot 7.1.3 The 26 dB bandwidth test result at 5.805 GHz, 6 Mbps

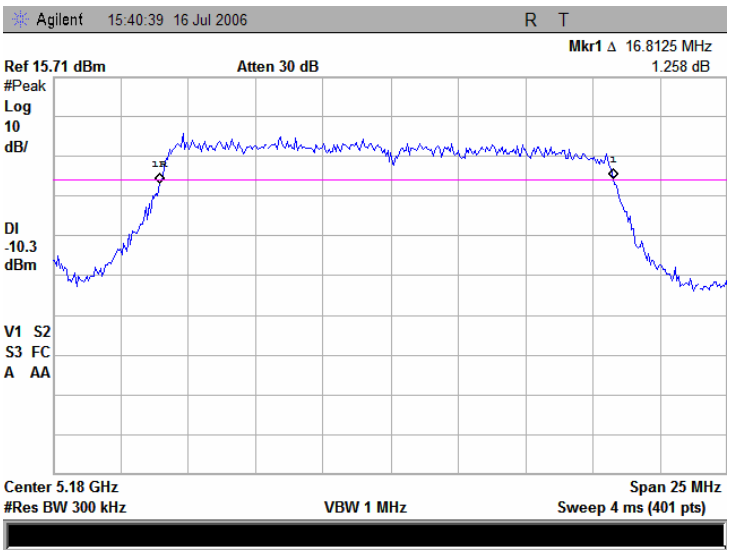


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.5 Reference power level measurement at 5.180 GHz, 54 Mbps

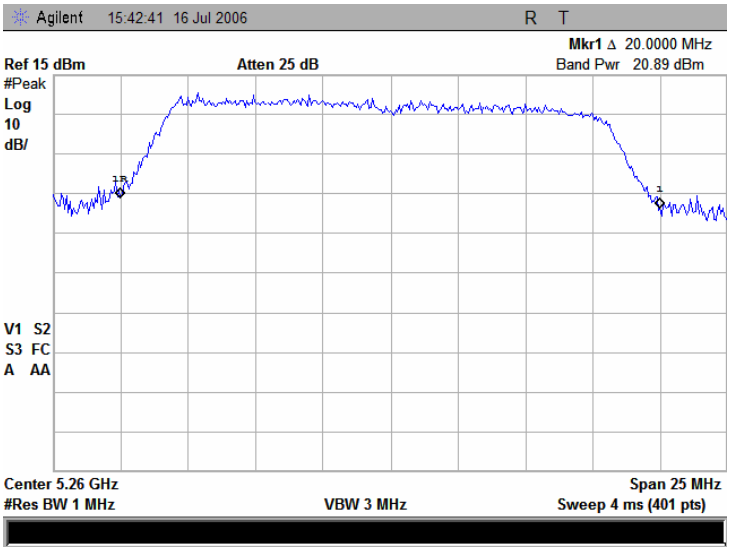


Plot 7.1.6 The 26 dB bandwidth test result at 5.180 GHz, 54 Mbps

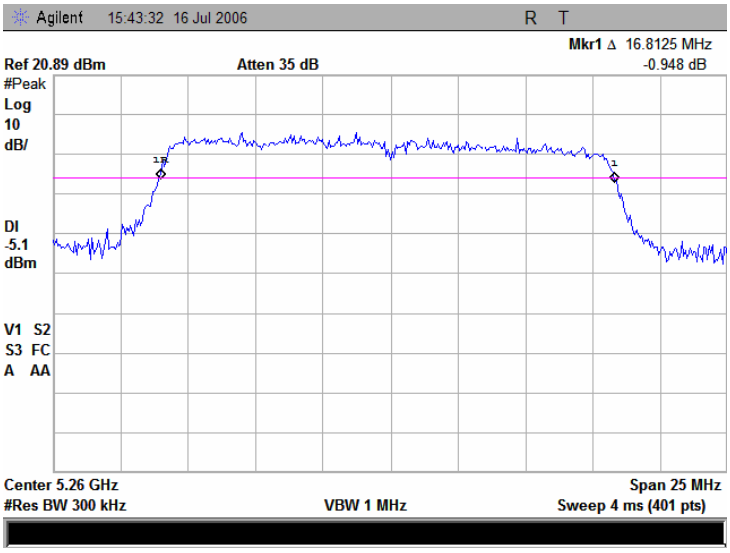


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.7 Reference power level measurement at 5.260 GHz, 54 Mbps

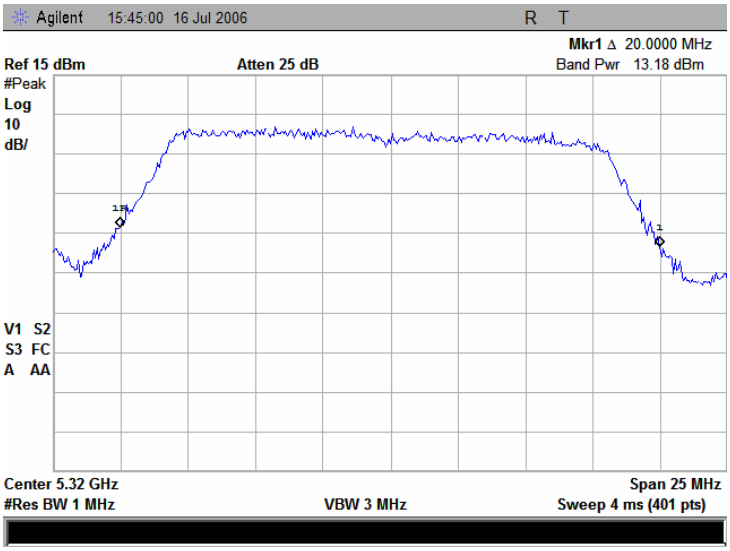


Plot 7.1.8 The 26 dB bandwidth test result at 5.260 GHz, 54 Mbps

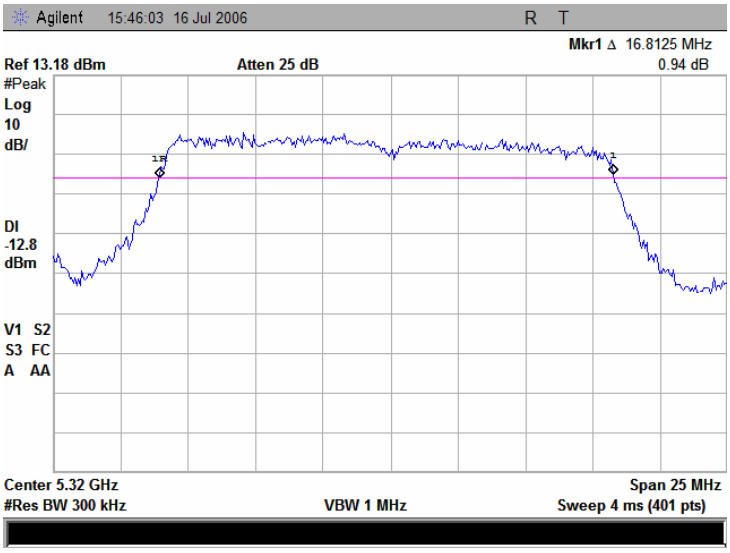


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.320 GHz, 54 Mbps

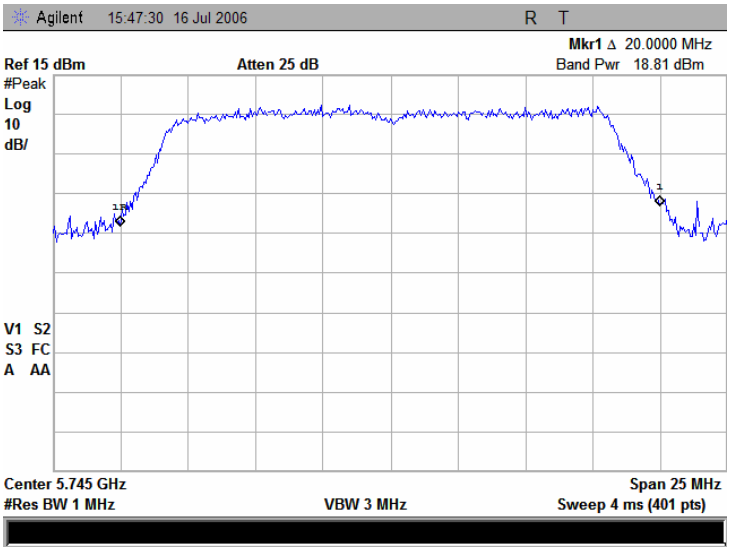


Plot 7.1.3 The 26 dB bandwidth test result at 5.320 GHz, 54 Mbps

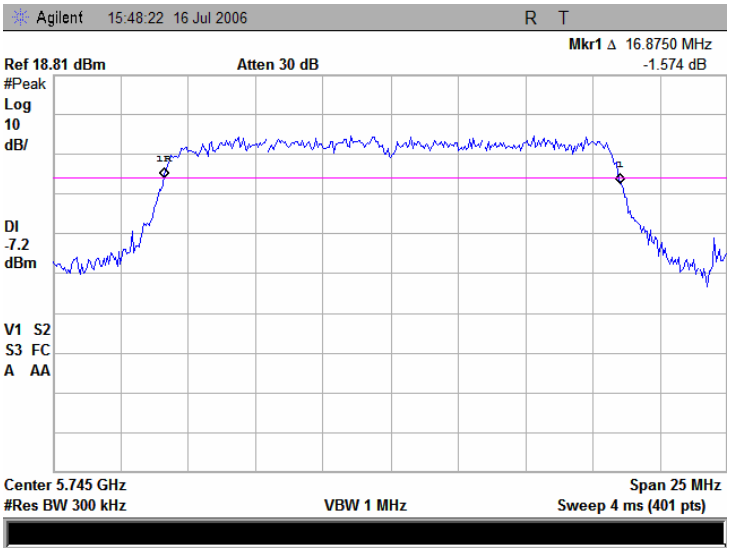


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.7450 GHz, 54 Mbps

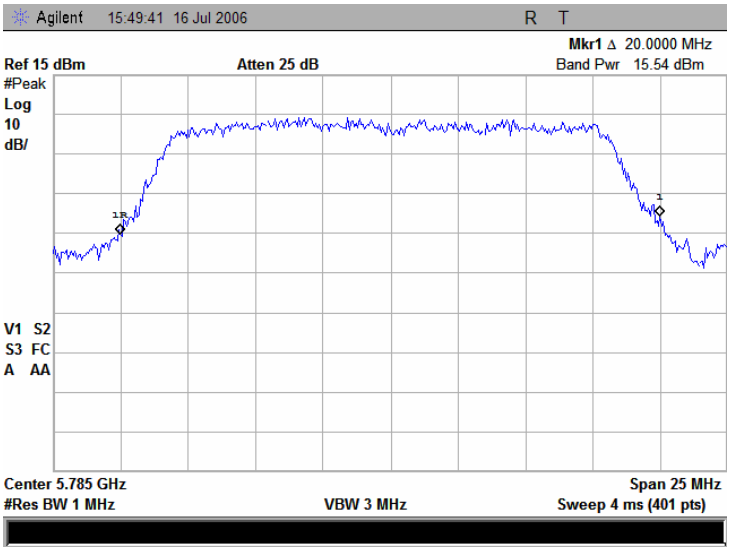


Plot 7.1.3 The 26 dB bandwidth test result at 5.7450 GHz, 54 Mbps

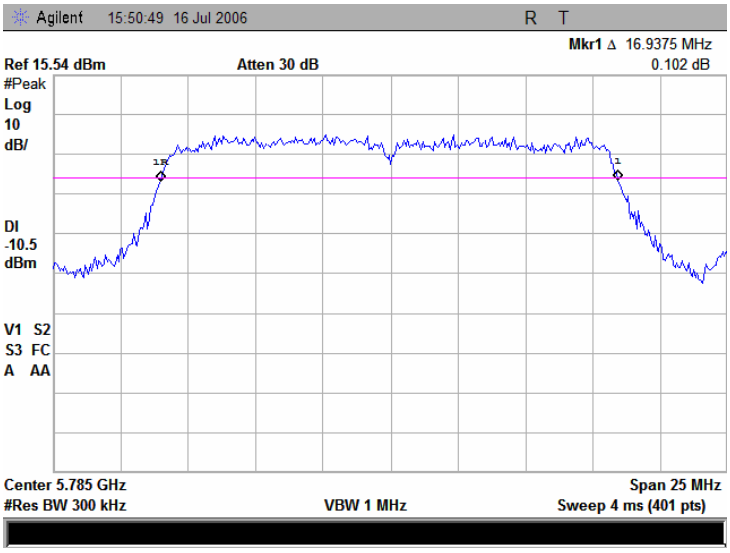


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.785 GHz, 54 Mbps

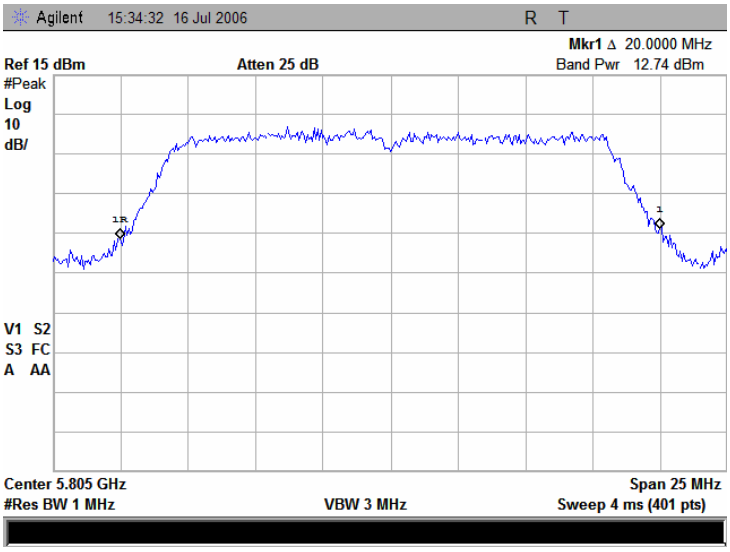


Plot 7.1.3 The 26 dB bandwidth test result at 5.785 GHz, 54 Mbps

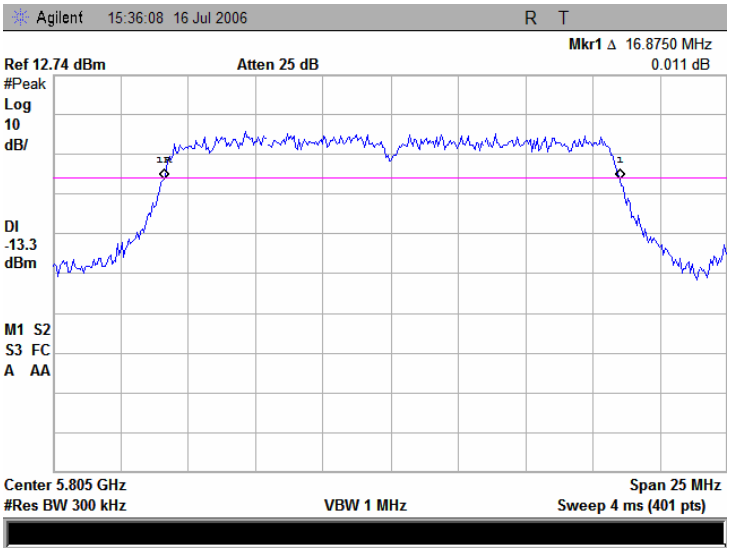


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.1.3 Reference power level measurement at 5.805 GHz, 54 Mbps



Plot 7.1.3 The 26 dB bandwidth test result at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

7.2 Occupied 26 dB bandwidth, 802.11 a and 802.11 b/g

7.2.1 General

This test was performed to measure the 26 dB bandwidth of the device.

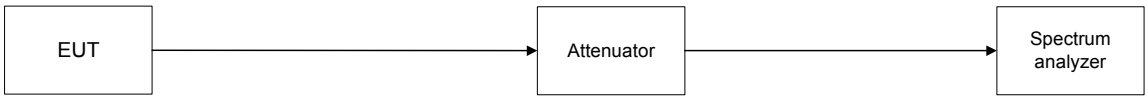
7.2.2 Test procedure

7.2.2.1 The EUT was set up as shown in Figure 7.2.1, energized and its proper operation was checked.

7.2.2.2 The EUT was set to transmit modulated carrier at maximum data rate.

7.2.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequencies at low and high edges and at the middle of the frequency range shown in Table 7.2.1. The transmitter bandwidth was measured with spectrum analyzer as frequency delta between reference points on modulation envelope and provided in Table 7.2.1 and associated plot.

Figure 7.2.1 The 26 dB bandwidth test setup



Test specification:	**Section 15.407(a)(3), 26 dB bandwidth**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/16/2006		
Temperature: 23 ºC	**Air Pressure:** 1012 hPa	**Relative Humidity:** 46 %	**Power Supply:** 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Table 7.2.1 The 26 dB bandwidth test results

OPERATING FREQUENCY RANGE:	5150 - 5825 MHz
DETECTOR USED:	Peak
RESOLUTION BANDWIDTH:	300 kHz
VIDEO BANDWIDTH:	≥ RBW
MODULATION SIGNAL:	digital

Carrier Frequency, GHz	26 dB bandwidth, MHz
Data rate 6 Mbps	
5.180	16.8125
5.260	16.8125
5.320	16.7500
5.745	16.8125
5.785	17.0000
5.805	16.8750
Data rate 54 Mbps	
5.180	16.8750
5.260	17.0625
5.320	16.9375
5.745	16.8750
5.785	17.0000
5.805	16.8125

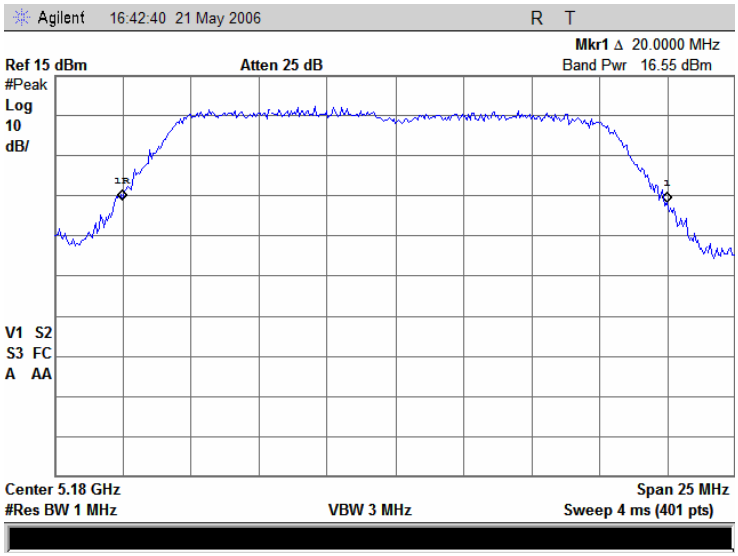
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2867						

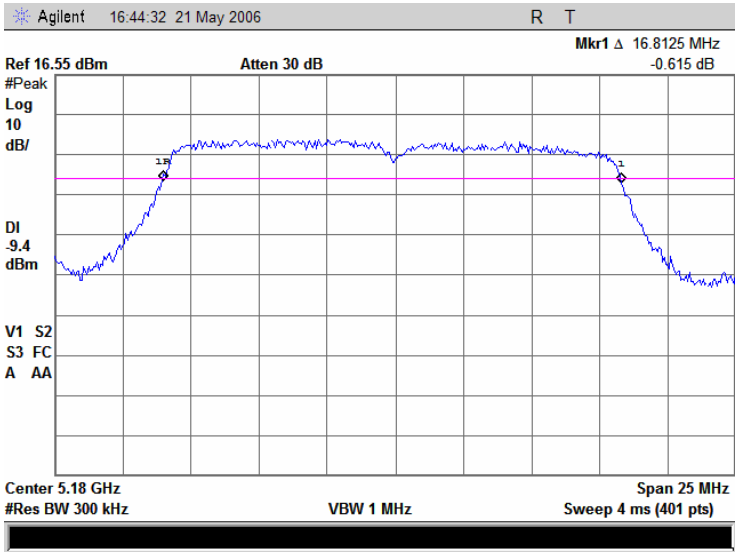
Full description is given in Appendix A.

Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.1 Reference power level measurement at 5.180 GHz, 6 Mbps

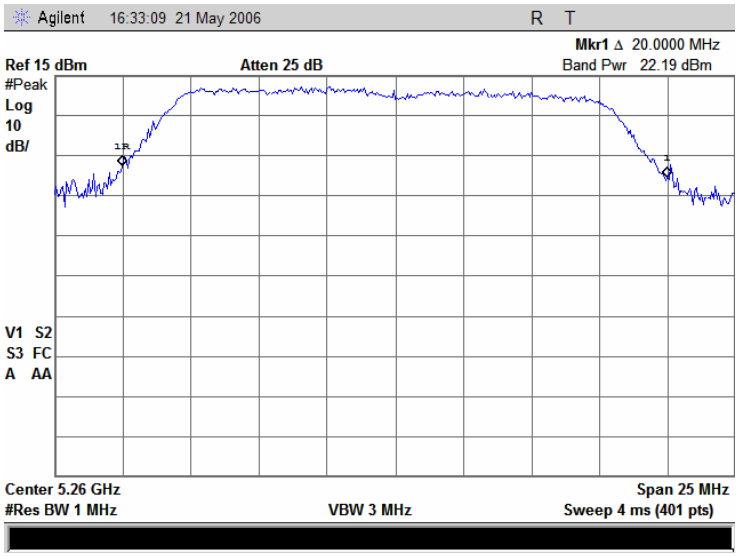


Plot 7.2.2 The 26 dB bandwidth test result at 5.180 GHz, 6 Mbps

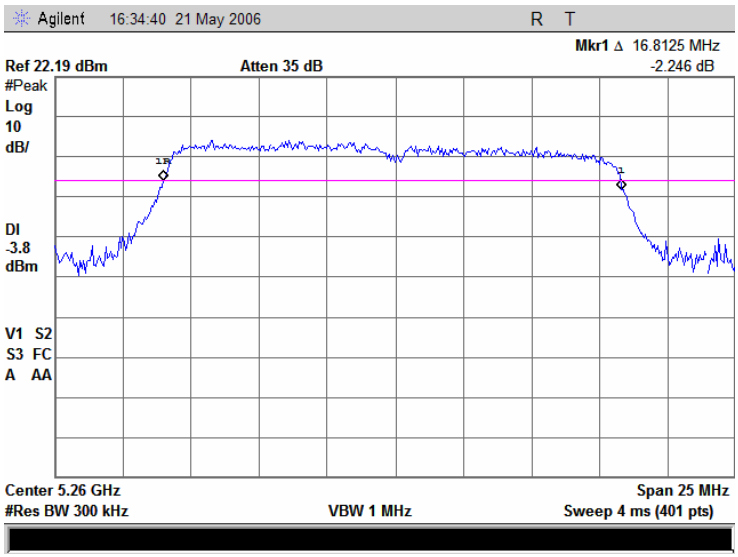


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.3 Reference power level measurement at 5.260 GHz, 6 Mbps

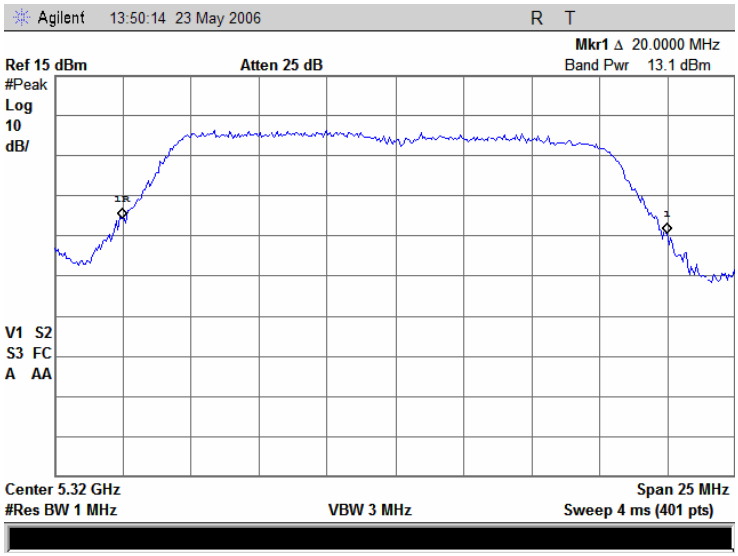


Plot 7.2.4 The 26 dB bandwidth test result at 5.260 GHz, 6 Mbps

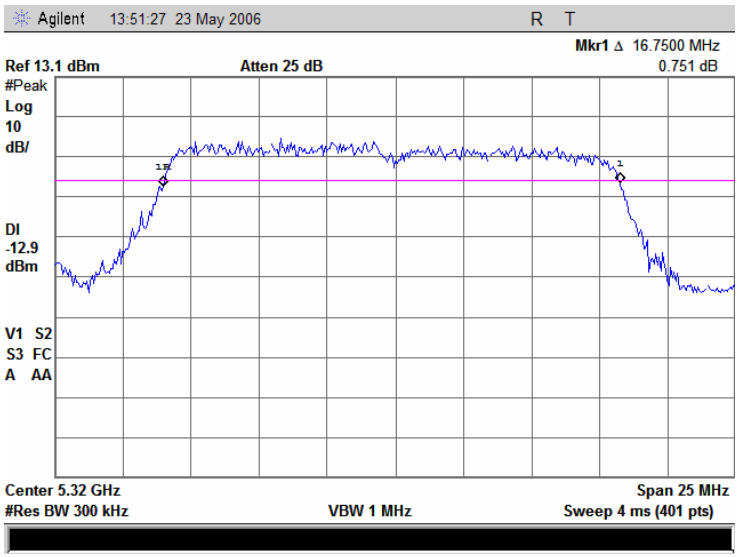


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.5 Reference power level measurement at 5.320 GHz, 6 Mbps

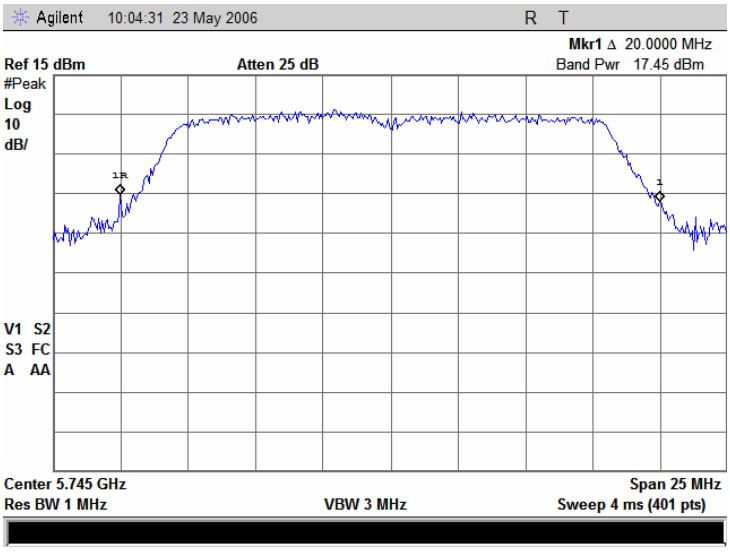


Plot 7.2.6 The 26 dB bandwidth test result at 5.320 GHz, 6 Mbps

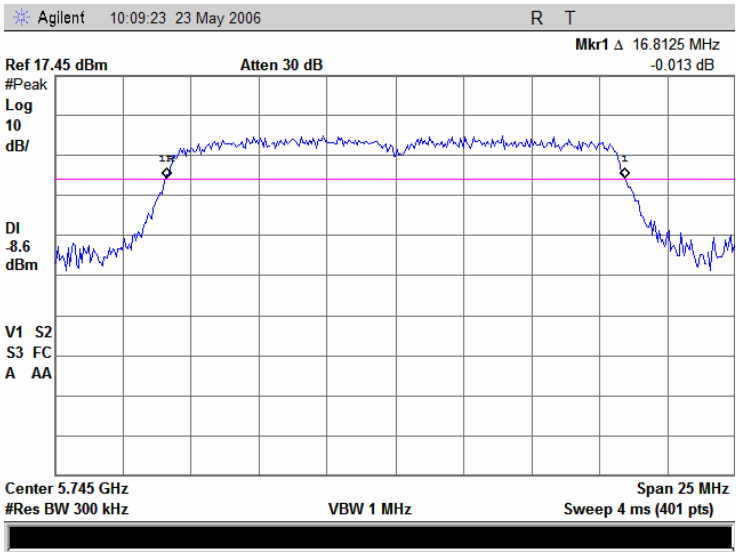


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.7 Reference power level measurement at 5.7450 GHz, 6 Mbps

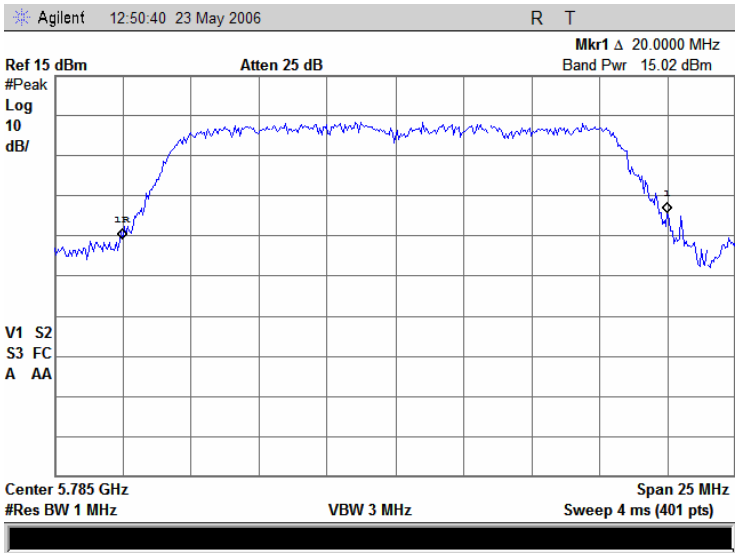


Plot 7.2.8 The 26 dB bandwidth test result at 5.7450 GHz, 6 Mbps

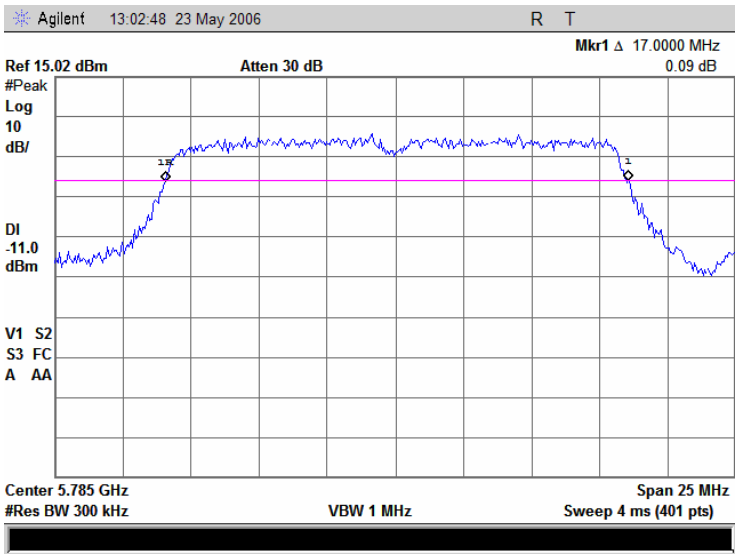


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.9 Reference power level measurement at 5.785 GHz, 6 Mbps

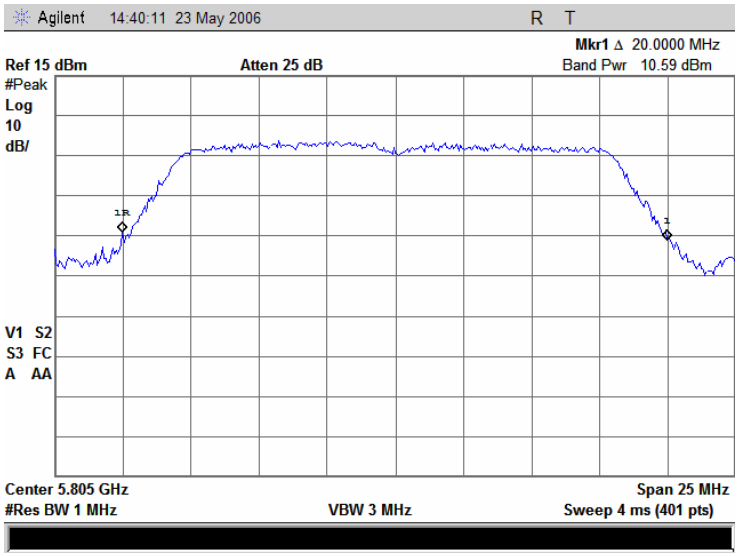


Plot 7.2.10 The 26 dB bandwidth test result at 5.785 GHz, 6 Mbps

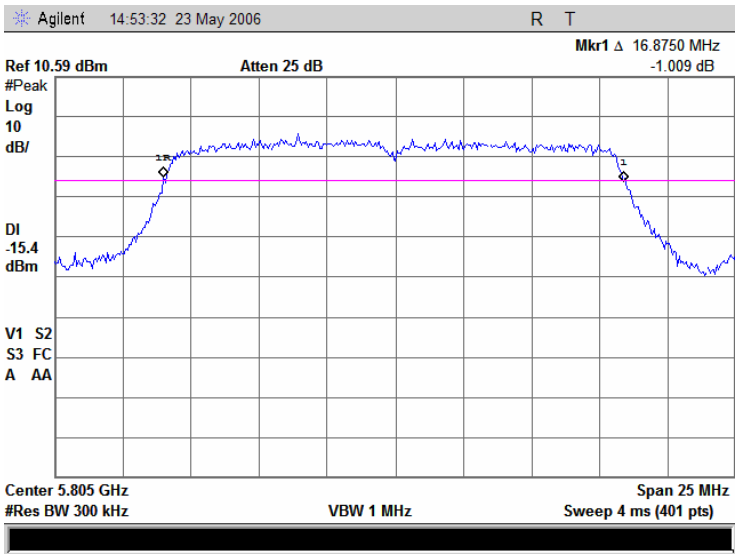


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.11 Reference power level measurement at 5.805 GHz, 6 Mbps

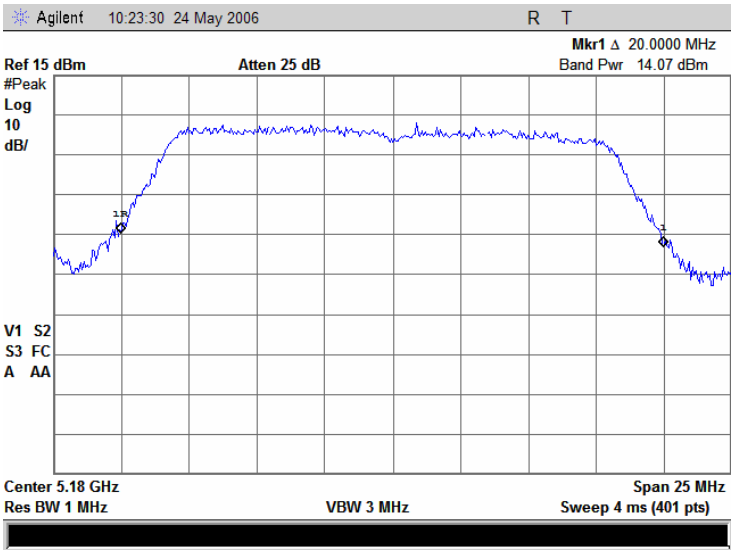


Plot 7.2.12 The 26 dB bandwidth test result at 5.805 GHz, 6 Mbps

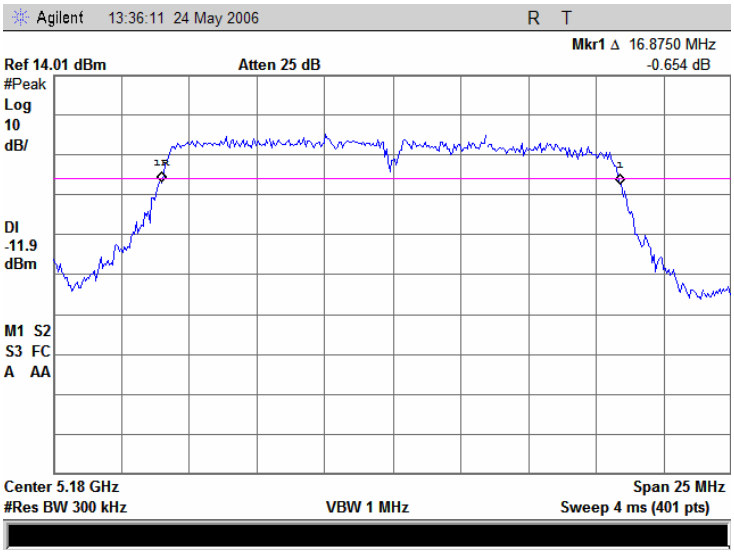


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.13 Reference power level measurement at 5.180 GHz, 54 Mbps

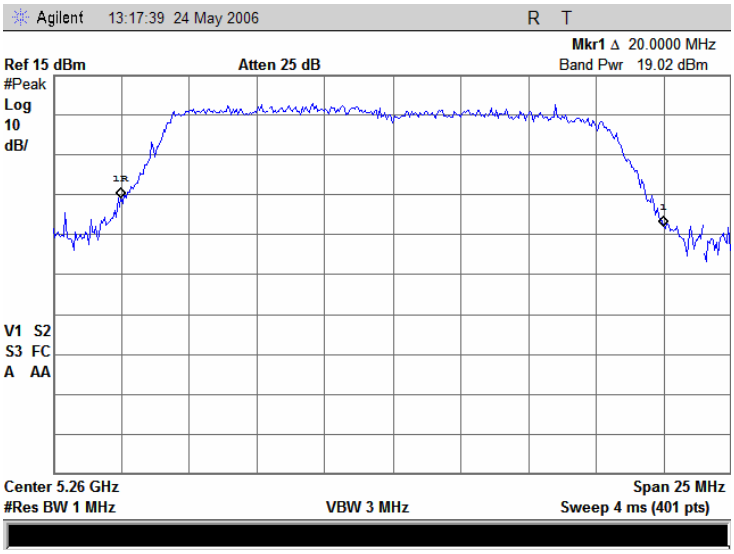


Plot 7.2.14 The 26 dB bandwidth test result at 5.180 GHz, 54 Mbps

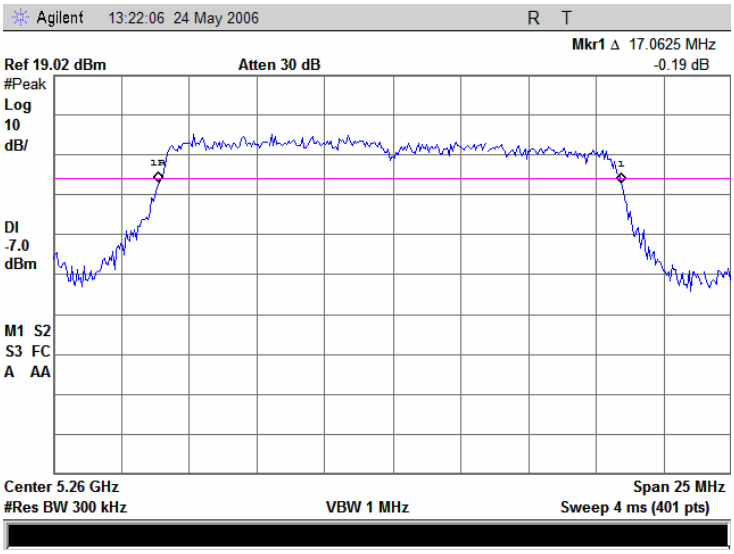


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.15 Reference power level measurement at 5.260 GHz, 54 Mbps

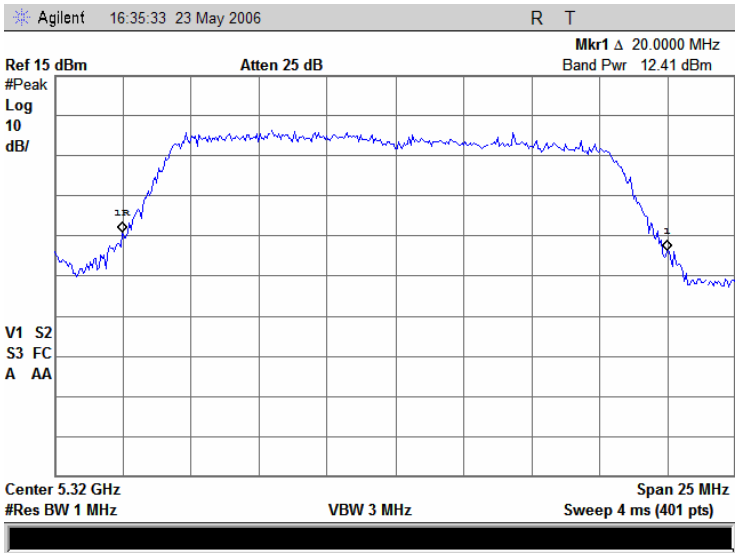


Plot 7.2.16 The 26 dB bandwidth test result at 5.260 GHz, 54 Mbps

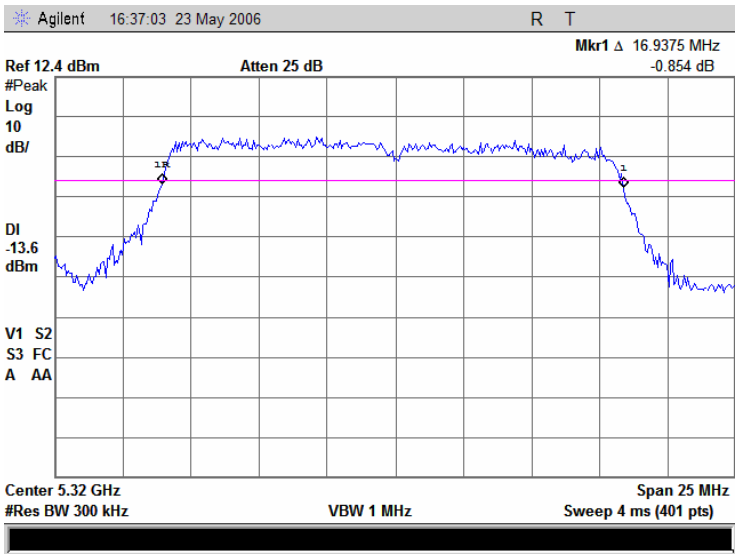


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.17 Reference power level measurement at 5.320 GHz, 54 Mbps

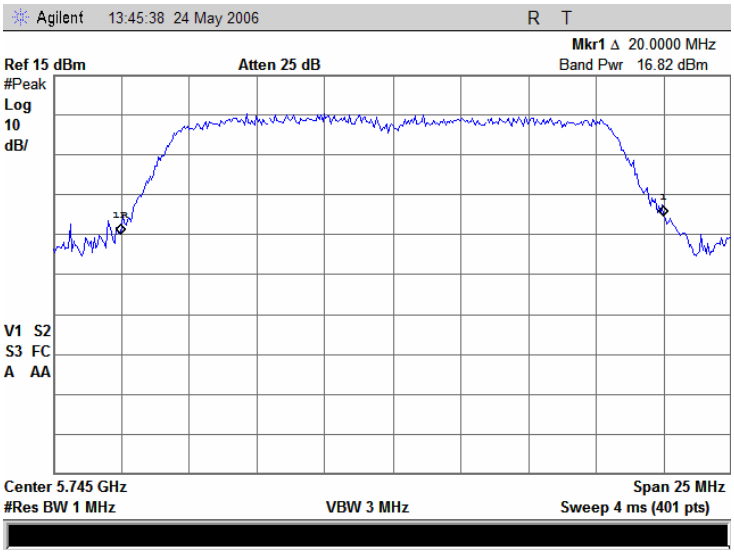


Plot 7.2.18 The 26 dB bandwidth test result at 5.320 GHz, 54 Mbps

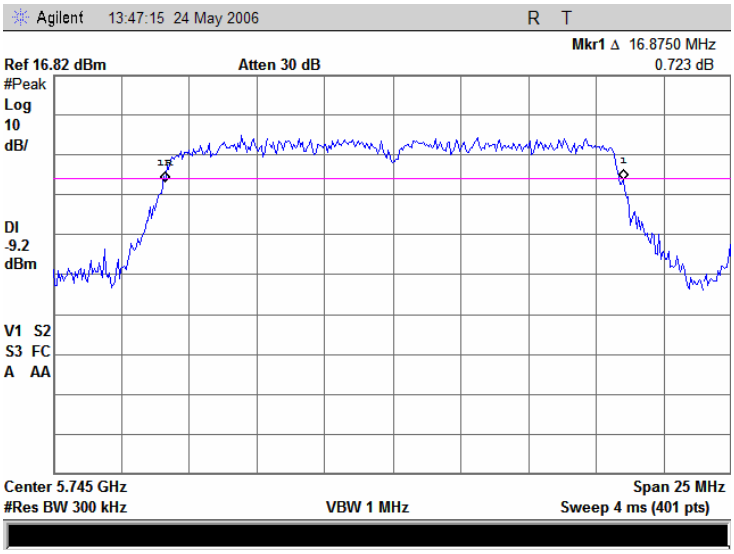


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.19 Reference power level measurement at 5.7450 GHz, 54 Mbps

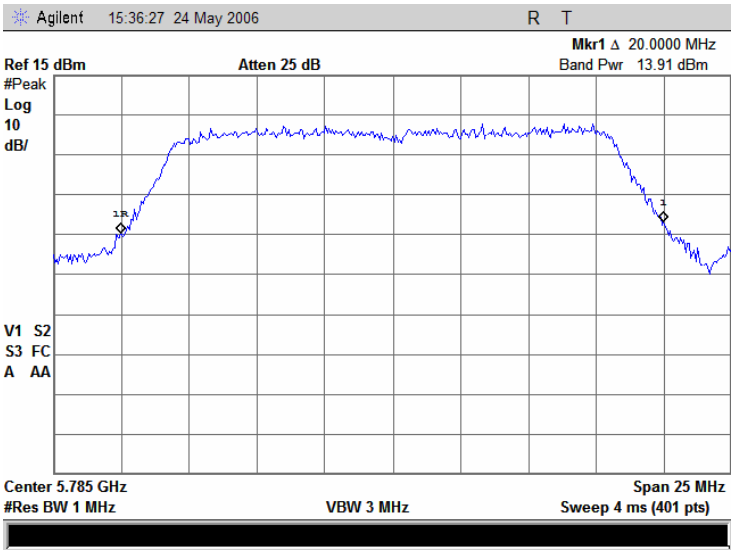


Plot 7.2.20 The 26 dB bandwidth test result at 5.7450 GHz, 54 Mbps

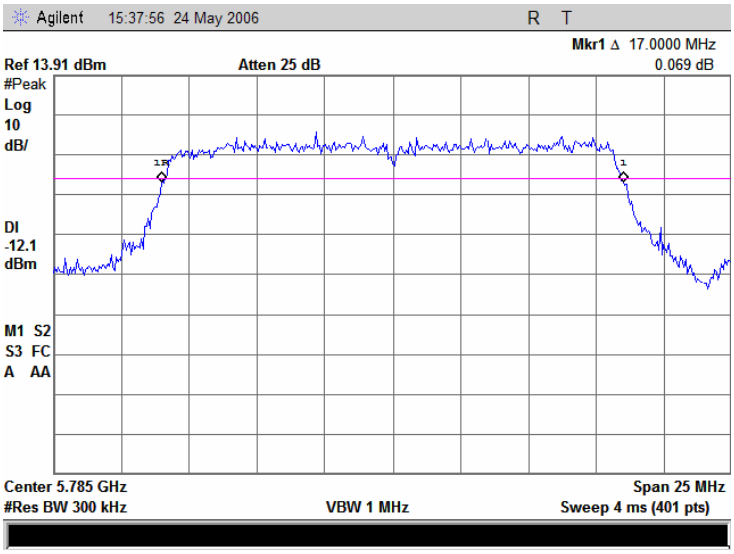


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.21 Reference power level measurement at 5.785 GHz, 54 Mbps

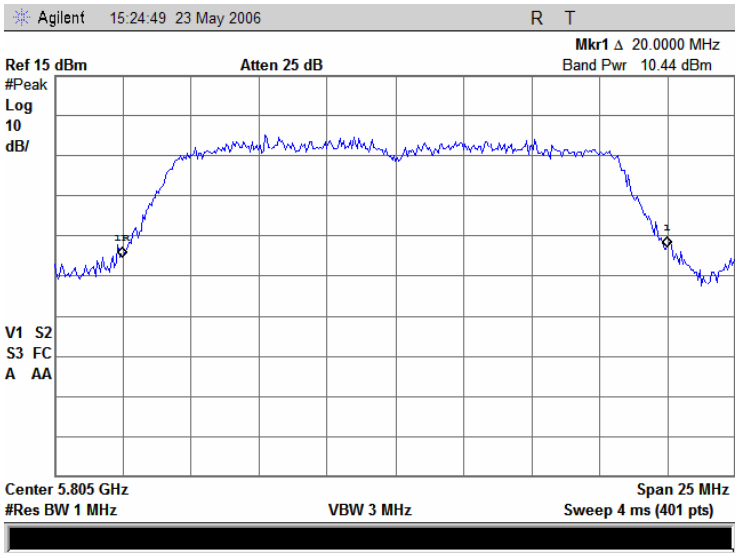


Plot 7.2.22 The 26 dB bandwidth test result at 5.785 GHz, 54 Mbps

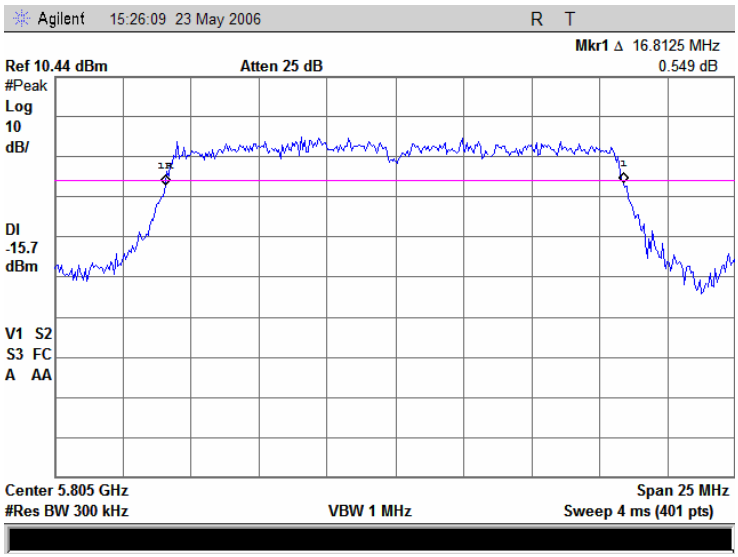


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.2.23 Reference power level measurement at 5.805 GHz, 54 Mbps



Plot 7.2.24 The 26 dB bandwidth test result at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

7.3 Occupied 26 dB bandwidth, 802.11 a, 802.11 b/g and CELL/PCS

7.3.1 General

This test was performed to measure the 26 dB bandwidth of the device.

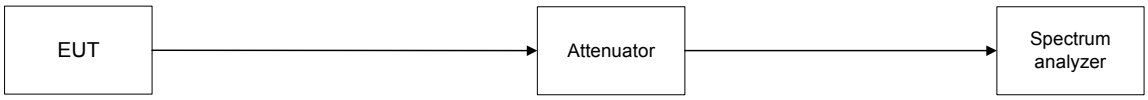
7.3.2 Test procedure

7.3.2.1 The EUT was set up as shown in Figure 7.3.1, energized and its proper operation was checked.

7.3.2.2 The EUT was set to transmit modulated carrier at maximum data rate.

7.3.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequencies at low and high edges and at the middle of the frequency range shown in Table 7.3.1. The transmitter bandwidth was measured with spectrum analyzer as frequency delta between reference points on modulation envelope and provided in Table 7.3.1 and associated plot.

Figure 7.3.1 The 26 dB bandwidth test setup



Test specification:	**Section 15.407(a)(3), 26 dB bandwidth**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/16/2006		
Temperature: 23 ºC	**Air Pressure:** 1012 hPa	**Relative Humidity:** 46 %	**Power Supply:** 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Table 7.3.1 The 26 dB bandwidth test results

OPERATING FREQUENCY RANGE:	5150 - 5825 MHz
DETECTOR USED:	Peak
RESOLUTION BANDWIDTH:	300 kHz
VIDEO BANDWIDTH:	≥ RBW
MODULATION SIGNAL:	digital

Carrier Frequency, GHz	26 dB bandwidth, MHz
Data rate 6 Mbps	
5.180	16.6875
5.260	16.8750
5.320	16.8125
5.745	16.8750
5.785	16.8750
5.805	16.8125
Data rate 54 Mbps	
5.180	16.8750
5.260	16.9375
5.320	16.9375
5.745	16.8125
5.785	17.0000
5.805	16.9375

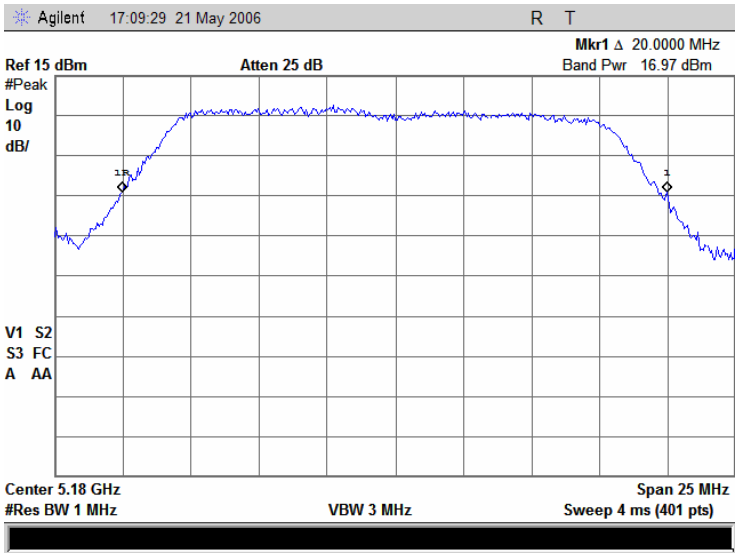
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2867						

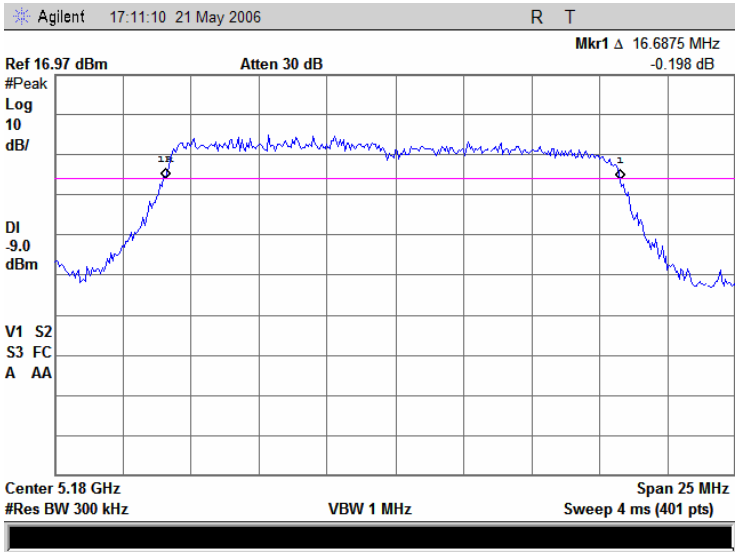
Full description is given in Appendix A.

Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.1 Reference power level measurement at 5.180 GHz, 6 Mbps

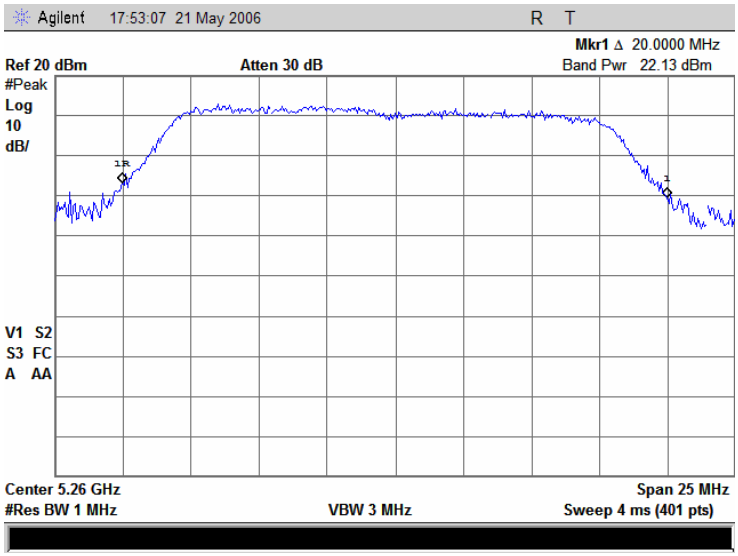


Plot 7.3.2 The 26 dB bandwidth test result at 5.180 GHz, 6 Mbps

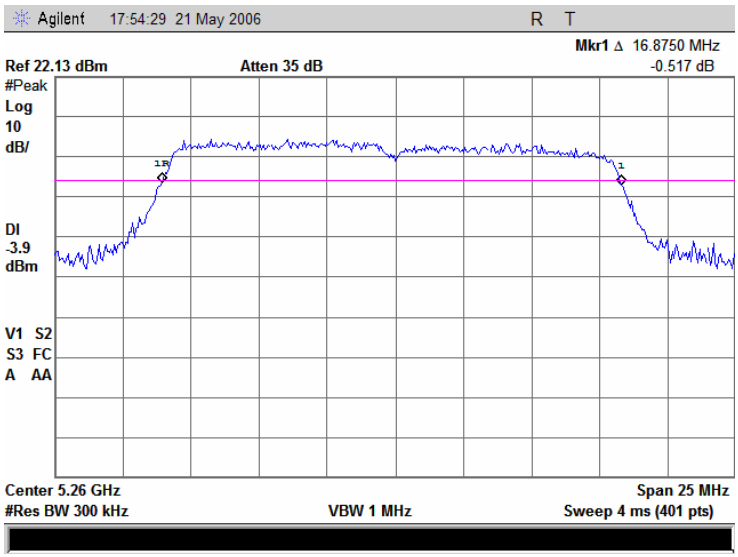


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.3 Reference power level measurement at 5.260 GHz, 6 Mbps

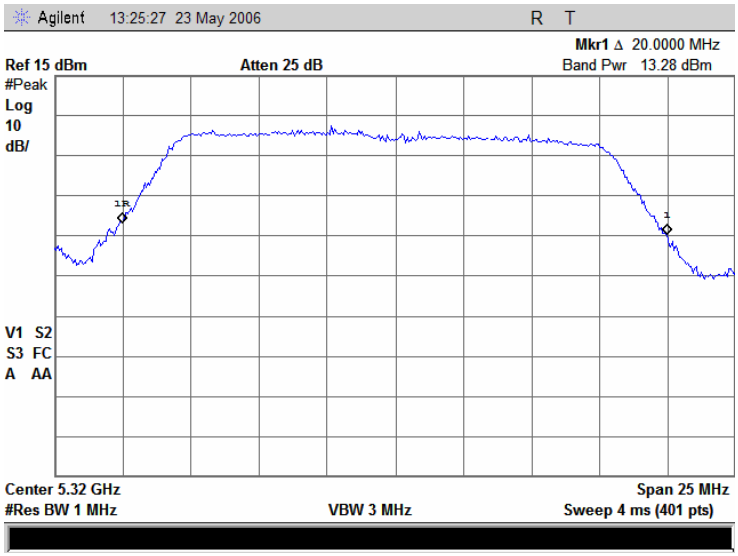


Plot 7.3.4 The 26 dB bandwidth test result at 5.260 GHz, 6 Mbps

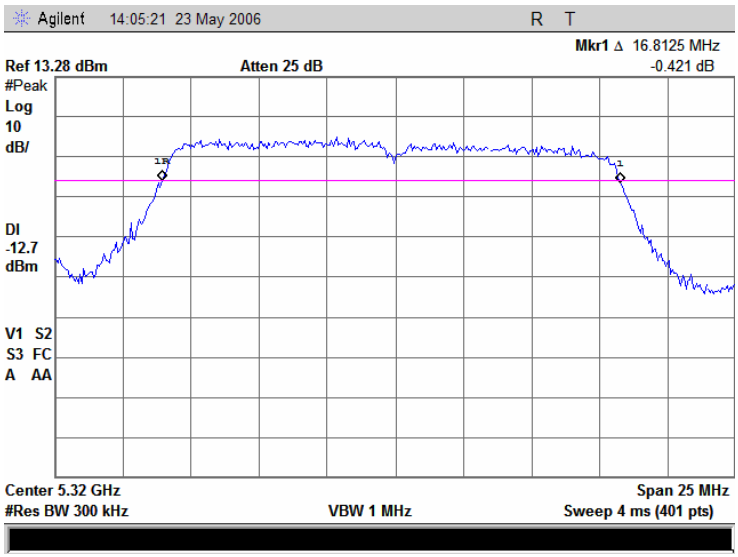


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.5 Reference power level measurement at 5.320 GHz, 6 Mbps

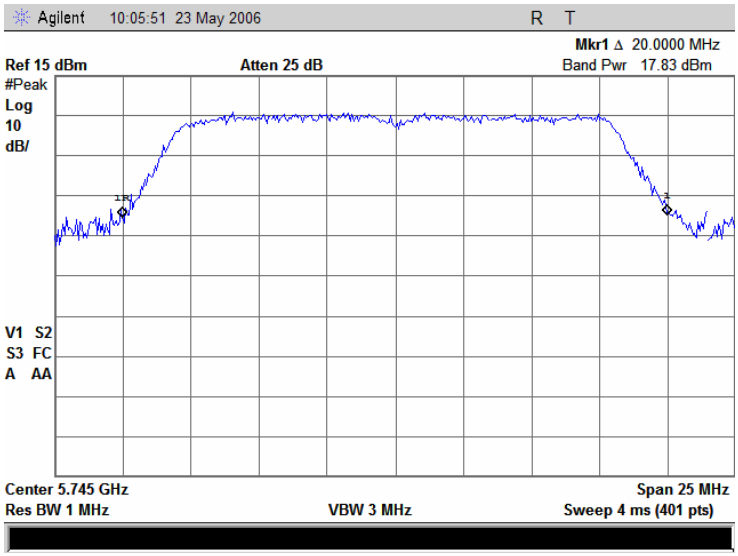


Plot 7.3.6 The 26 dB bandwidth test result at 5.320 GHz, 6 Mbps

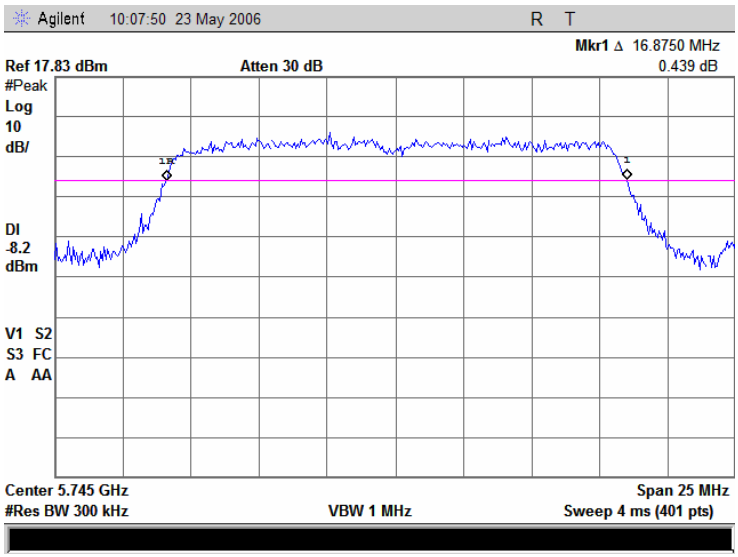


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.7 Reference power level measurement at 5.7450 GHz, 6 Mbps

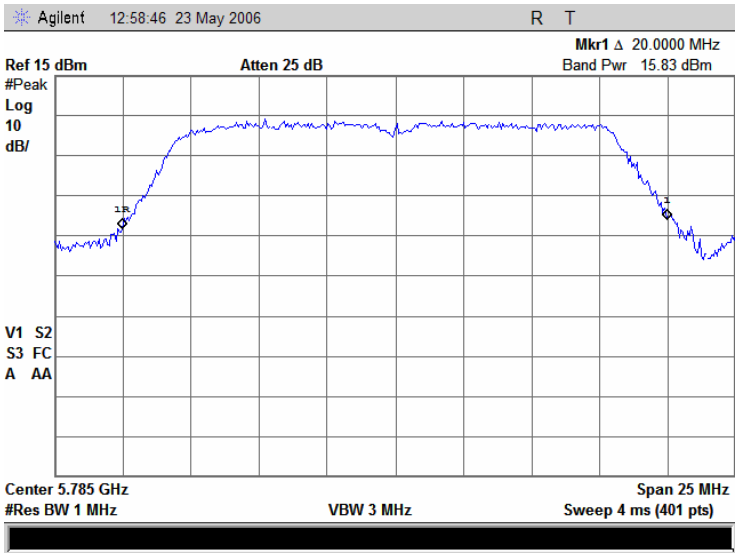


Plot 7.3.8 The 26 dB bandwidth test result at 5.7450 GHz, 6 Mbps

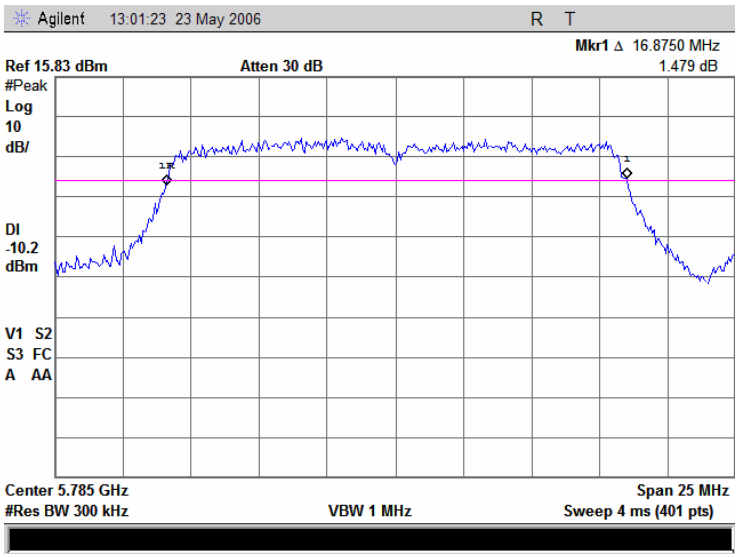


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.9 Reference power level measurement at 5.785 GHz, 6 Mbps

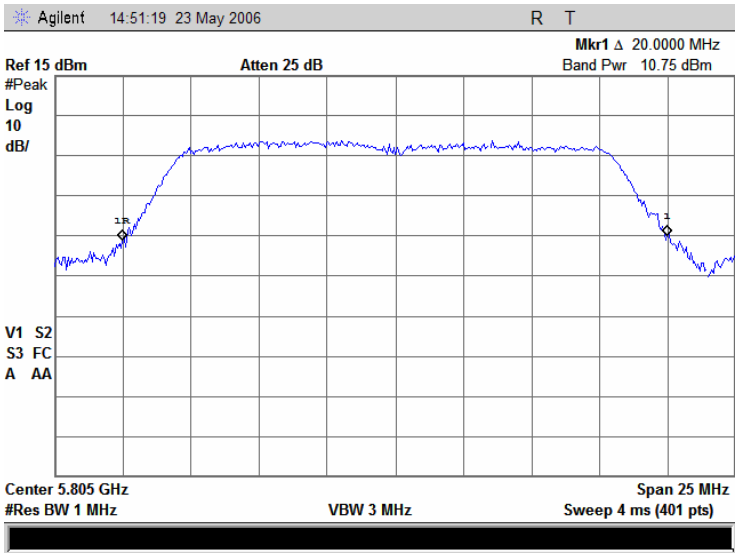


Plot 7.3.10 The 26 dB bandwidth test result at 5.785 GHz, 6 Mbps

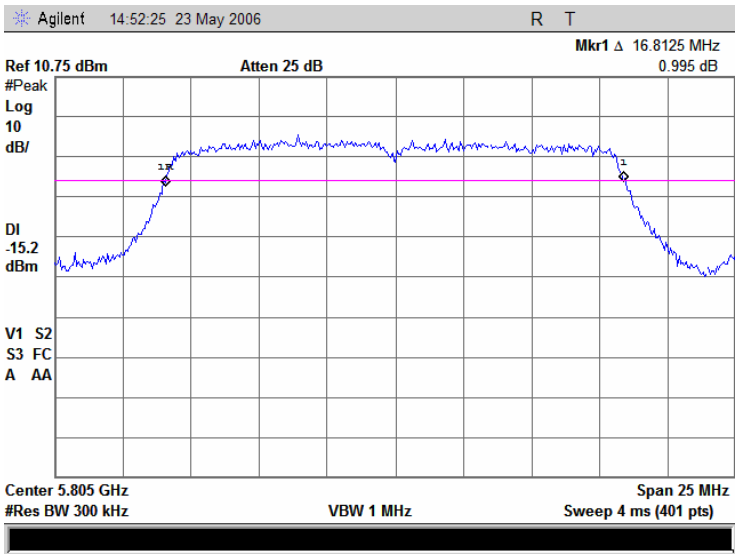


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.11 Reference power level measurement at 5.805 GHz, 6 Mbps

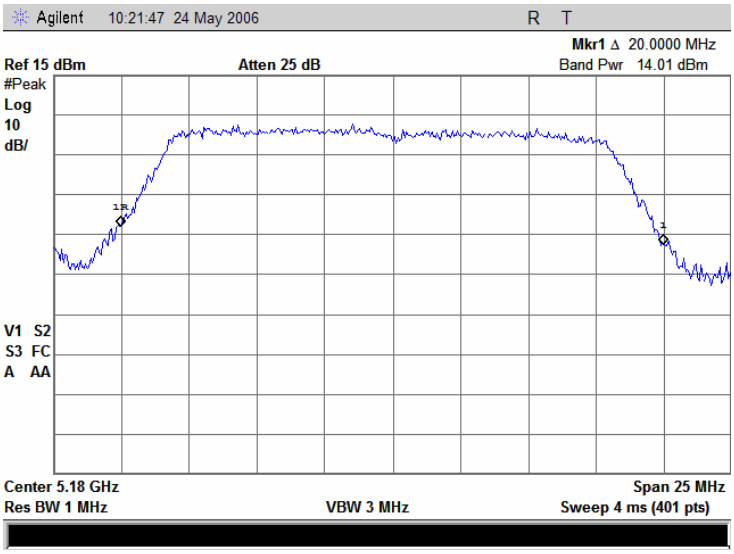


Plot 7.3.12 The 26 dB bandwidth test result at 5.805 GHz, 6 Mbps

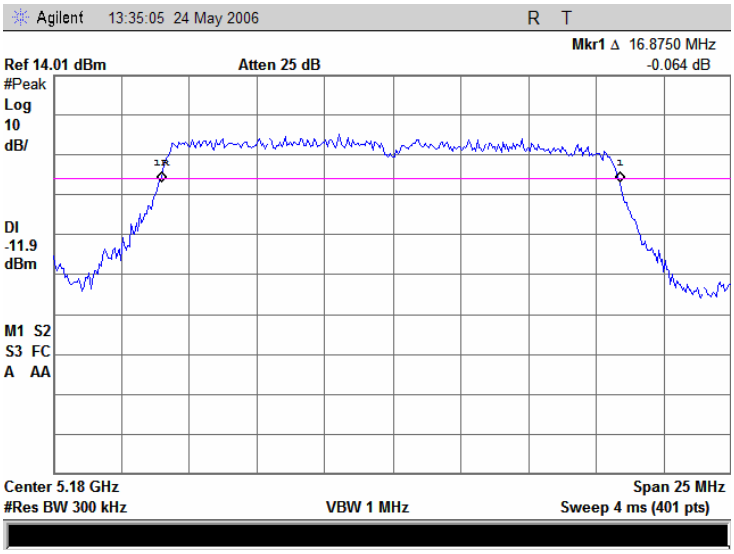


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.13 Reference power level measurement at 5.180 GHz, 54 Mbps

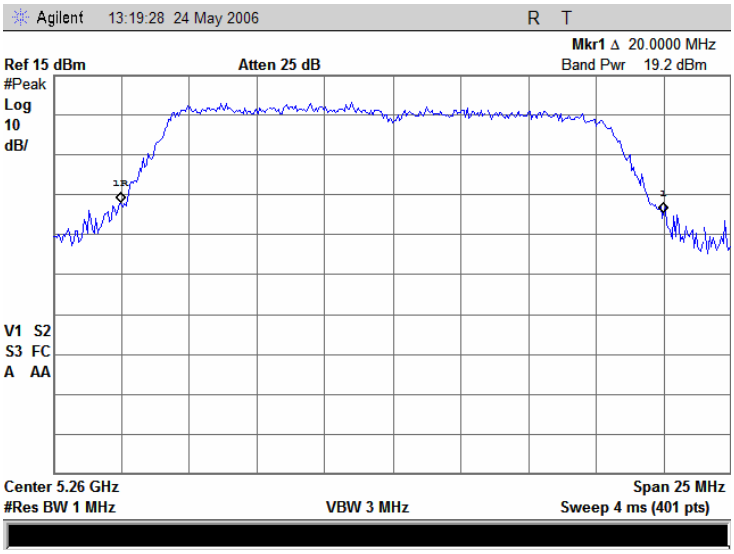


Plot 7.3.14 The 26 dB bandwidth test result at 5.180 GHz, 54 Mbps

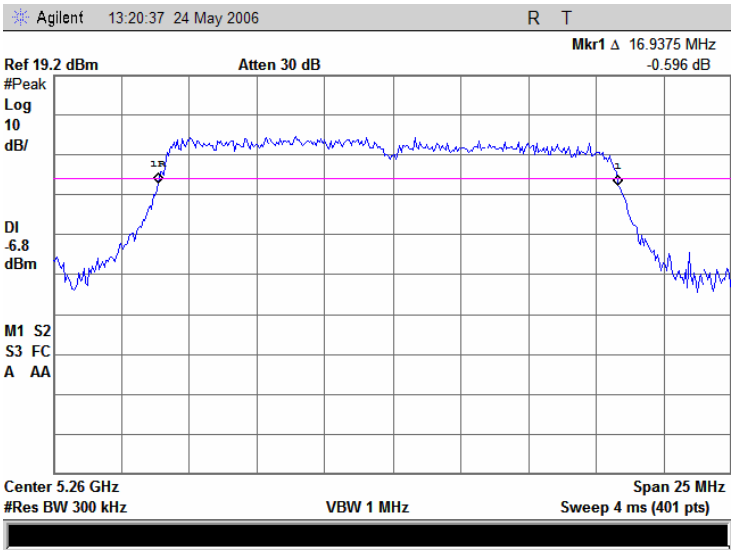


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.15 Reference power level measurement at 5.260 GHz, 54 Mbps

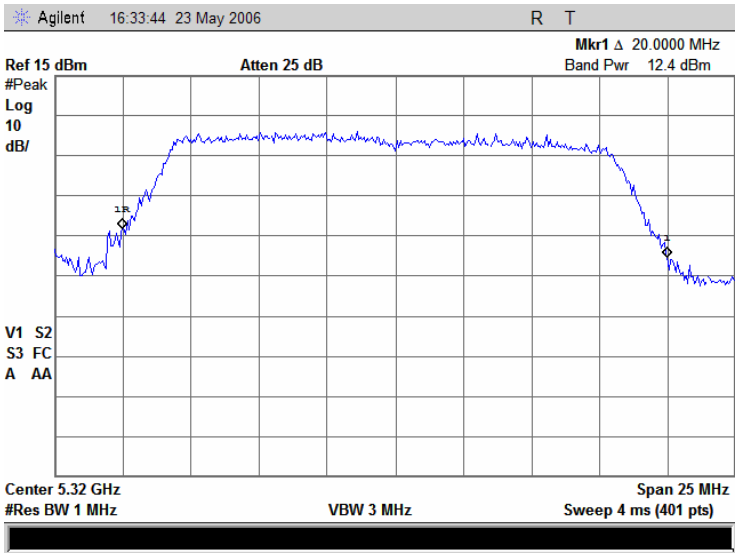


Plot 7.3.16 The 26 dB bandwidth test result at 5.260 GHz, 54 Mbps

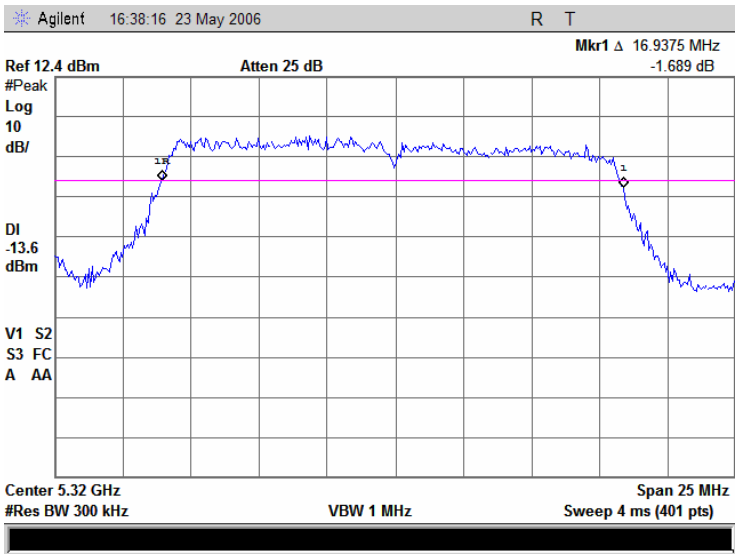


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.17 Reference power level measurement at 5.320 GHz, 54 Mbps

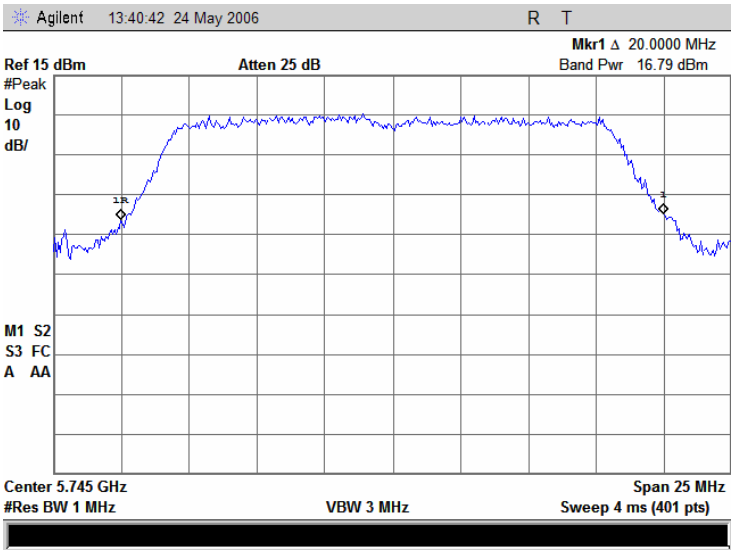


Plot 7.3.18 The 26 dB bandwidth test result at 5.320 GHz, 54 Mbps

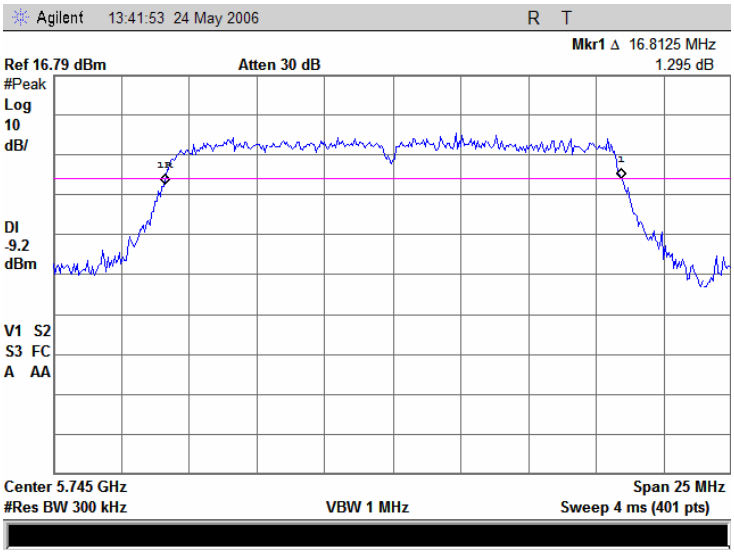


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.19 Reference power level measurement at 5.745 GHz, 54 Mbps

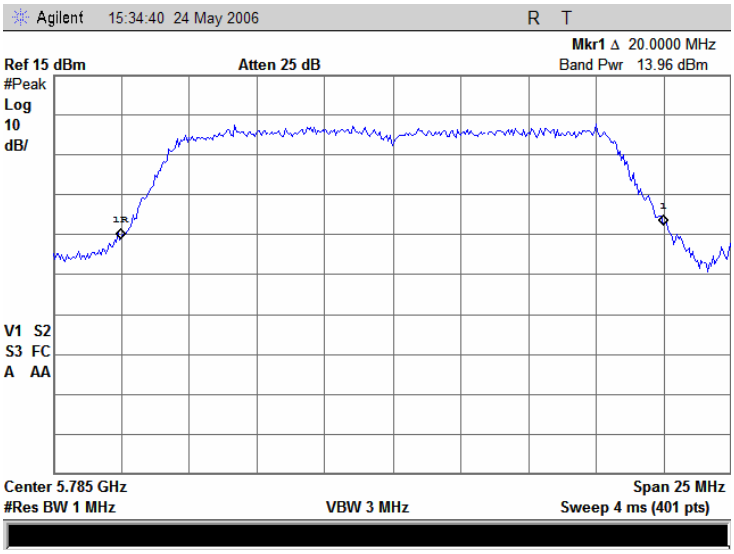


Plot 7.3.20 The 26 dB bandwidth test result at 5.745 GHz, 54 Mbps

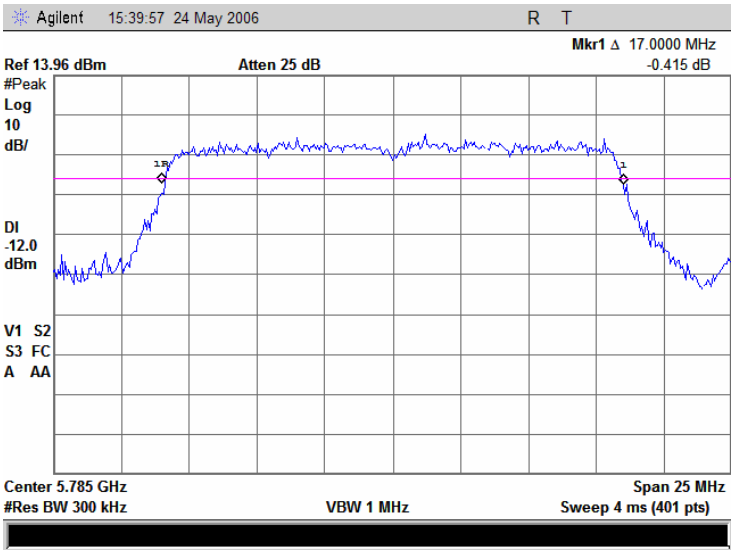


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.21 Reference power level measurement at 5.785 GHz, 54 Mbps

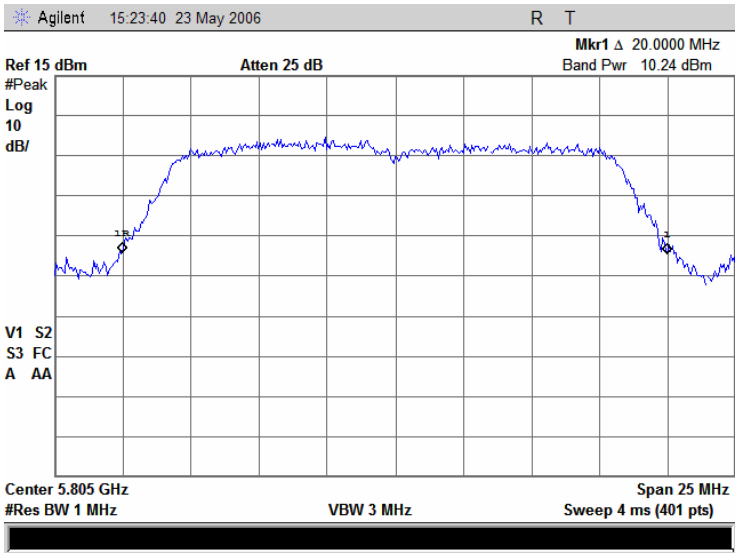


Plot 7.3.22 The 26 dB bandwidth test result at 5.785 GHz, 54 Mbps

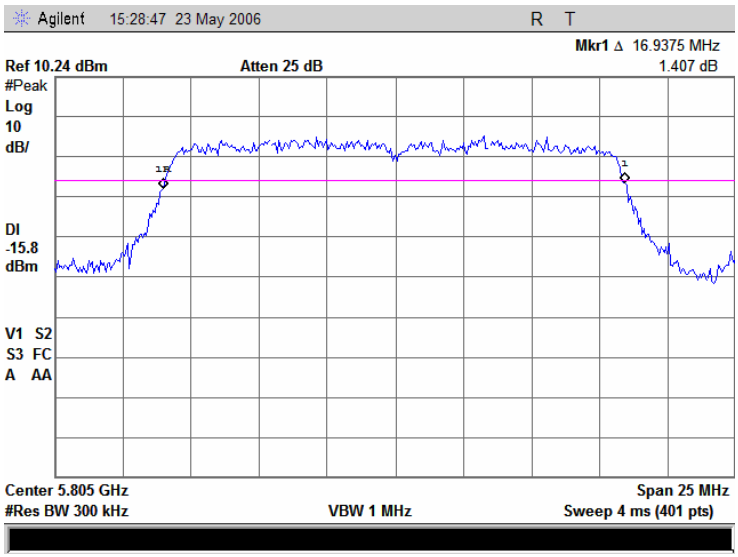


Test specification:	Section 15.407(a)(3), 26 dB bandwidth		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.3.23 Reference power level measurement at 5.805 GHz, 54 Mbps



Plot 7.3.24 The 26 dB bandwidth test result at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

7.4 Peak output power, 802.11 a only

7.4.1 General

This test was performed to measure the maximum peak output power at the transmitter RF antenna connector. Specification test limits are given in Table 7.4.1.

Table 7.4.1 Peak output power limits

Operating frequency range, MHz	Maximum peak transmit power*	Used limit*, dBm
5150-5250	The lesser of 50 mW or 4 dBm +10 log B	15.3 dBm
5250-5350	The lesser of 250 mW or 11 dBm +10 log B	22.3 dBm
5725 - 5825	The lesser of 1 W or 17 dBm +10 log B (B is the 26-dB emission bandwidth in MHz)	28.3 dBm

The maximum 26-dB emission bandwidth is 17.0 MHz at 5180 MHz channel frequency, the limit is equal to:
4 dBm + 10 log 17.0 =**16.3 dBm** (less than 50 mW = 17 dBm);
11 dBm + 10 log 17.0 =**23.3 dBm** (less than 250 mW = 24 dBm);
17 dBm + 10 log 17.0 = **29.3 dBm** (less than 1 W = 30 dBm);
* Note 1: @7 dBi antenna gain the limits of peak output power shall be reduced 1 dB.

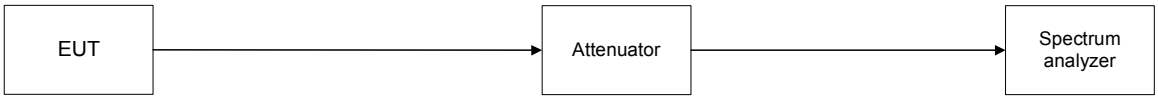
7.4.2 Test procedure

7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized and its proper operation was checked.

7.4.2.2 The EUT was adjusted to produce maximum available for end user RF output power.

7.4.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the 5.120-5.825 GHz frequency range.

Figure 7.4.1 Peak output power test setup



Test specification:	**Section 15.407(a)(1-3), Peak output power**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/16/2006		
Temperature: 23 ºC	**Air Pressure:** 1012 hPa	**Relative Humidity:** 46 %	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Table 7.4.2 Peak output power test results

OPERATING FREQUENCY RANGE: 5150 - 5825 MHz
DETECTOR USED: Sample
RESOLUTION BANDWIDTH: 1 MHz
VIDEO BANDWIDTH: 10 kHz
MODULATION SIGNAL: Digital

Frequency, GHz	Total power, dBm	Limit*, dBm	Margin, dB	Verdict
Data rate 6 Mbps				
5.18	6.21	15.3	-9.09	Pass
5.26	11.34	21.3	-9.96	Pass
5.32	4.82	21.3	-16.48	Pass
5.745	10.01	27.3	-17.29	Pass
5.785	5.53	27.3	-21.77	Pass
5.805	3.10	27.3	-24.20	Pass
Data rate 54 Mbps				
5.18	6.45	15.3	-8.85	Pass
5.26	12.35	21.3	-8.95	Pass
5.32	5.02	21.3	-16.28	Pass
5.745	10.41	27.3	-16.89	Pass
5.785	7.51	27.3	-19.79	Pass
5.805	4.71	27.3	-22.59	Pass

* Note: @7 dBi antenna gain the limits of peak output power were reduced 1 dB

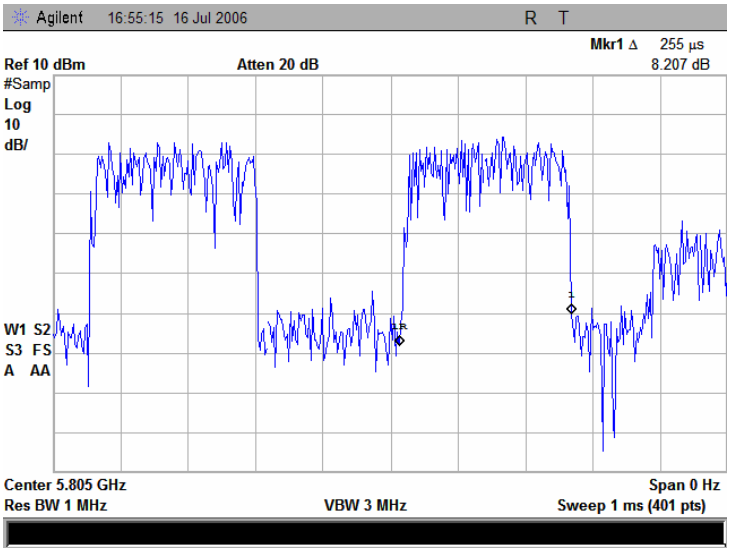
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2869					

Full description is given in Appendix A.

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

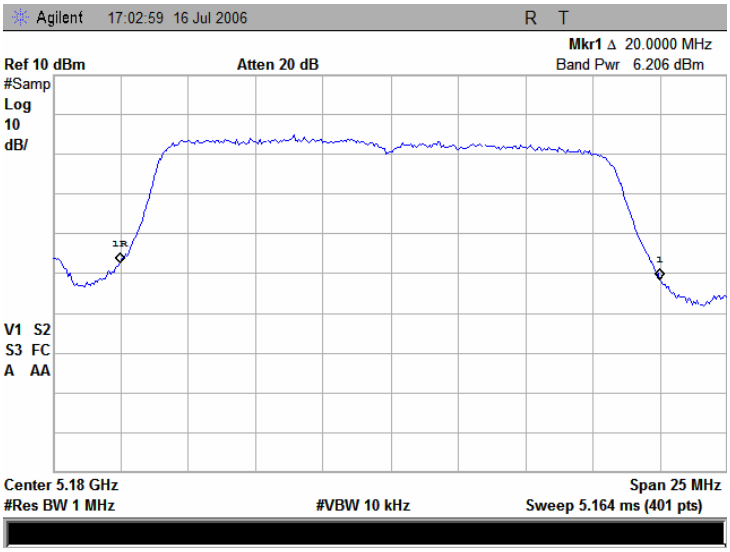
Plot 7.4.1 Pulse duration measurement, 6 Mbps



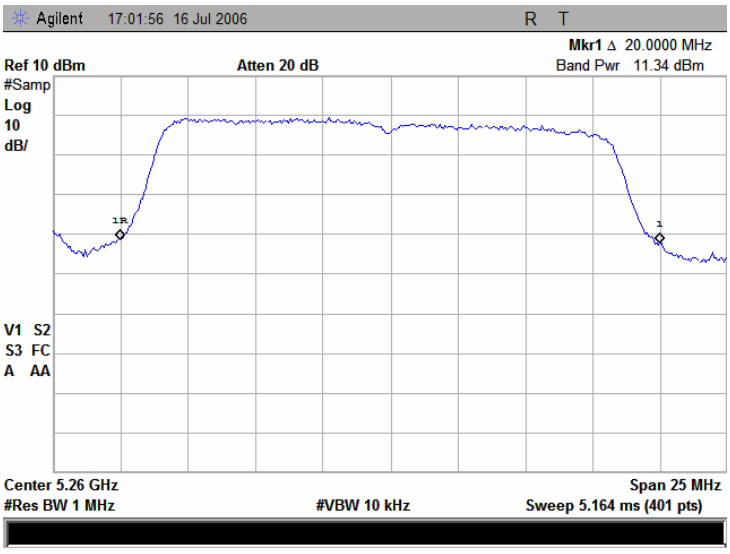
Video bandwidth (VBW) was calculated from maximum usable transmission pulse duration T, shown in the plot above, VBW ≥ 1/T ≥ 1 / 0.255ms ≥ 3921 Hz, hence VBW of 10 kHz was chosen for measurements

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.4.2 Peak output power at 5.180 GHz, 6 Mbps

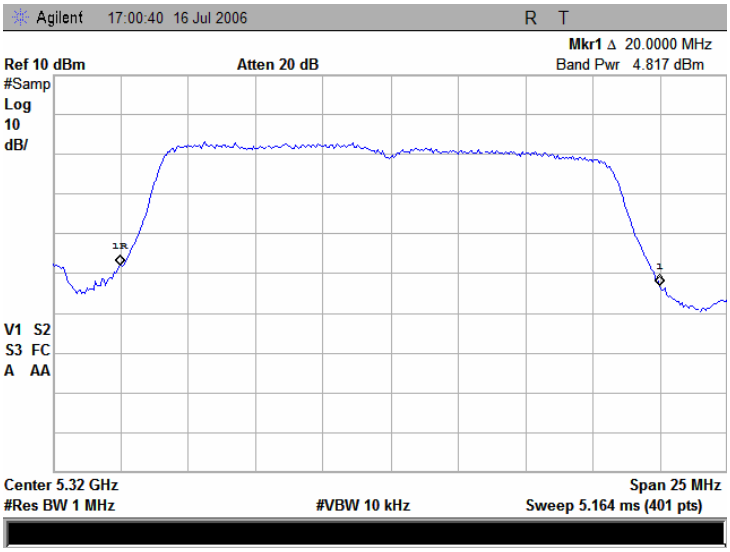


Plot 7.4.3 Peak output power at 5.260 GHz, 6 Mbps

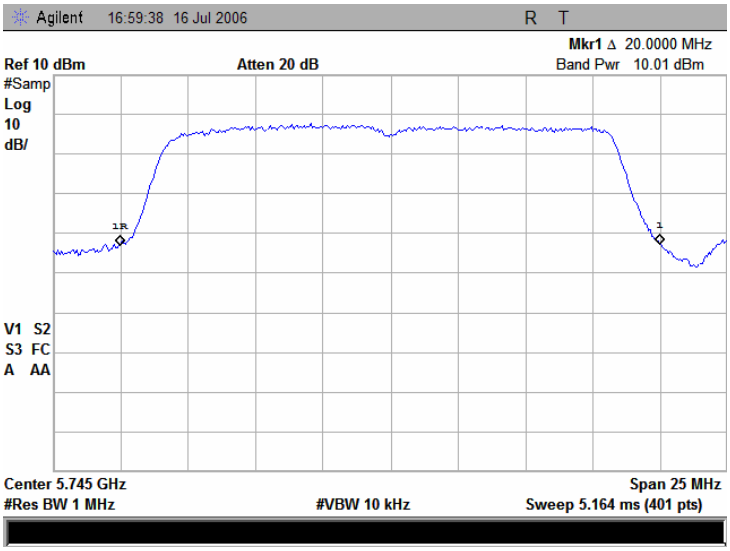


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.4.4 Peak output power at 5.320 GHz, 6 Mbps

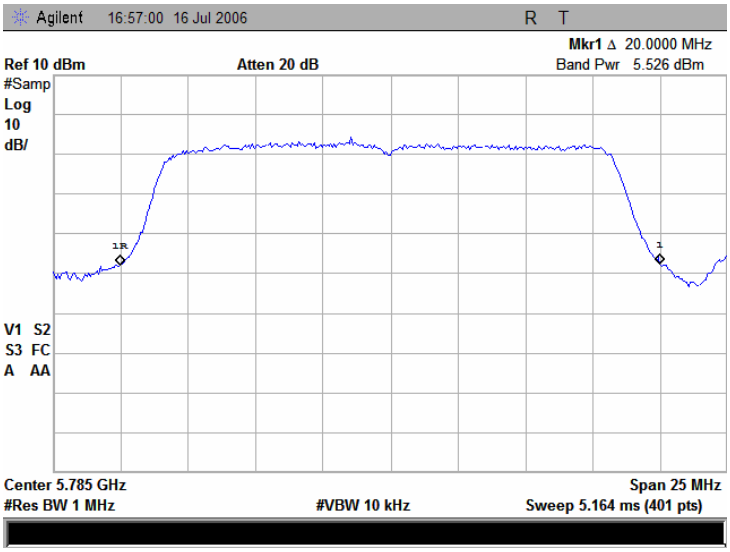


Plot 7.4.5 Peak output power at 5.745 GHz, 6 Mbps

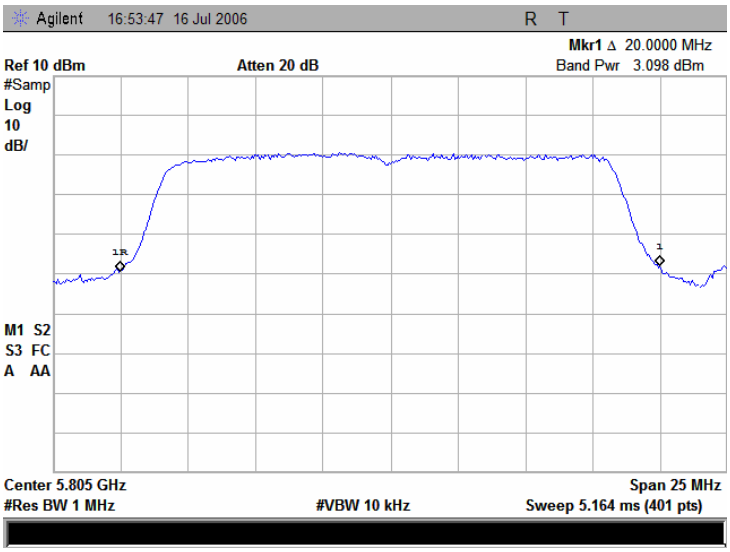


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.4.6 Peak output power at 5.785 GHz, 6 Mbps

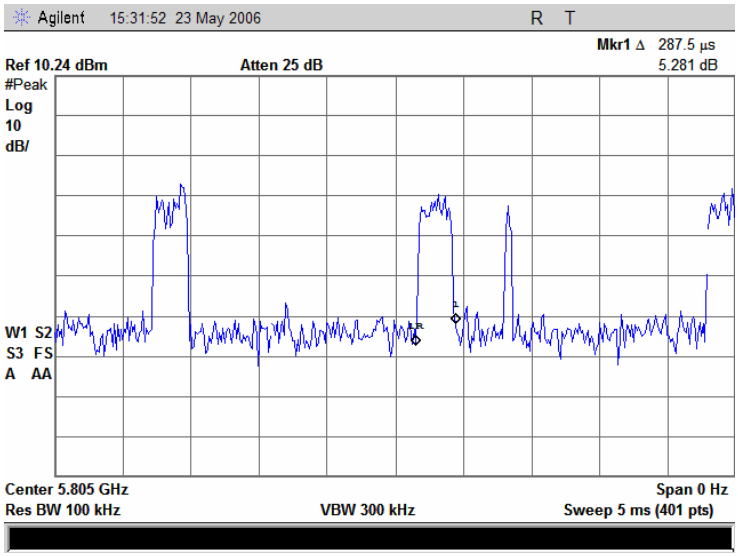


Plot 7.4.7 Peak output power at 5.805 GHz, 6 Mbps



Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

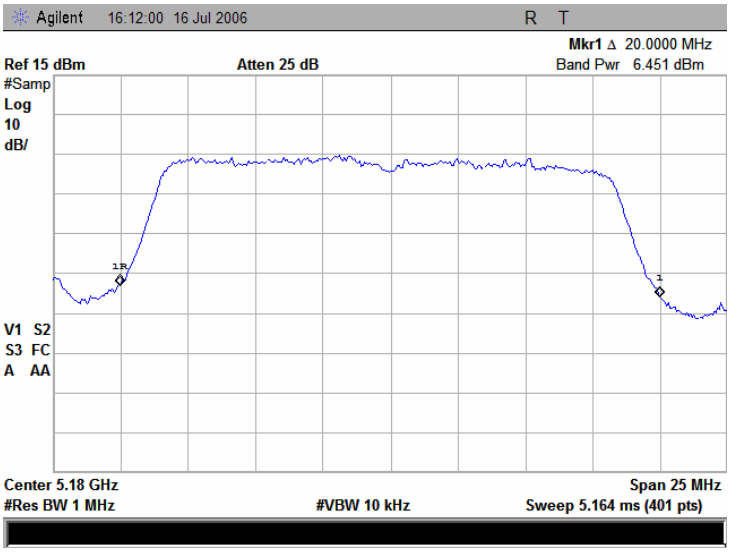
Plot 7.4.8 Pulse duration measurement, 54 Mbps



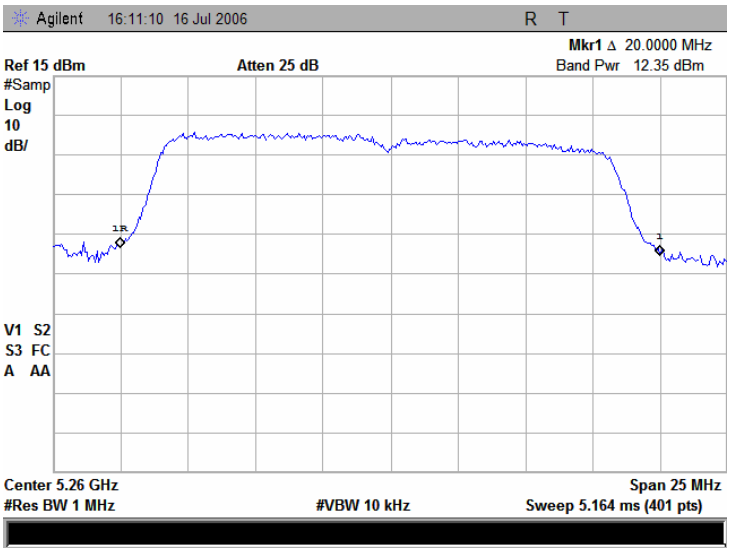
Video bandwidth (VBW) was calculated from maximum usable transmission pulse duration T, shown in the plot above, VBW ≥ 1/T ≥ 1 / 287.5µs ≥ 3478.3 Hz, hence VBW of 10 kHz was chosen for measurements

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.4.9 Peak output power at 5.180 GHz, 54 Mbps

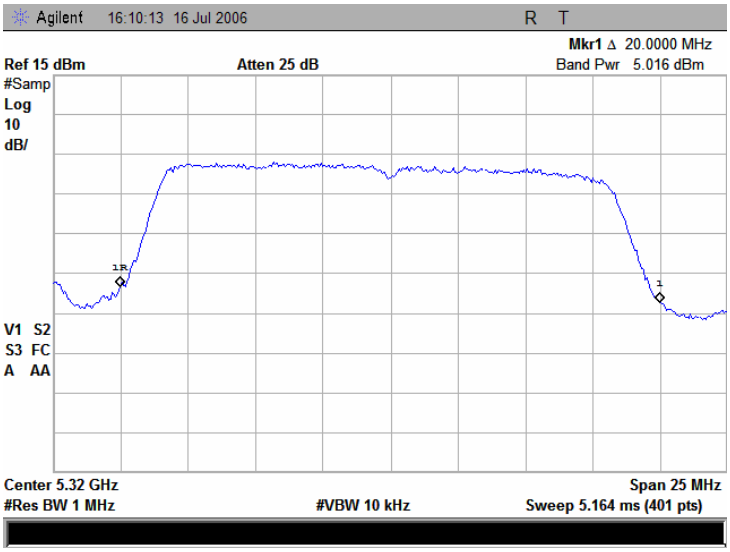


Plot 7.4.10 Peak output power at 5.260 GHz, 54 Mbps

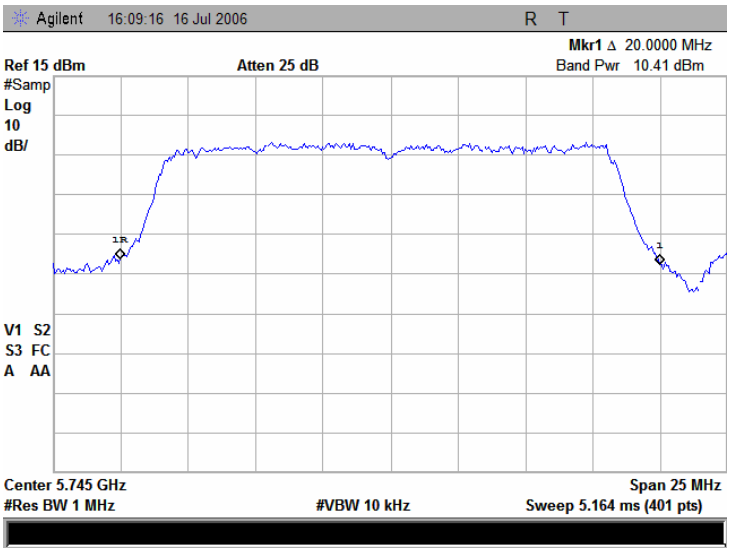


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.4.11 Peak output power at 5.320 GHz, 54 Mbps

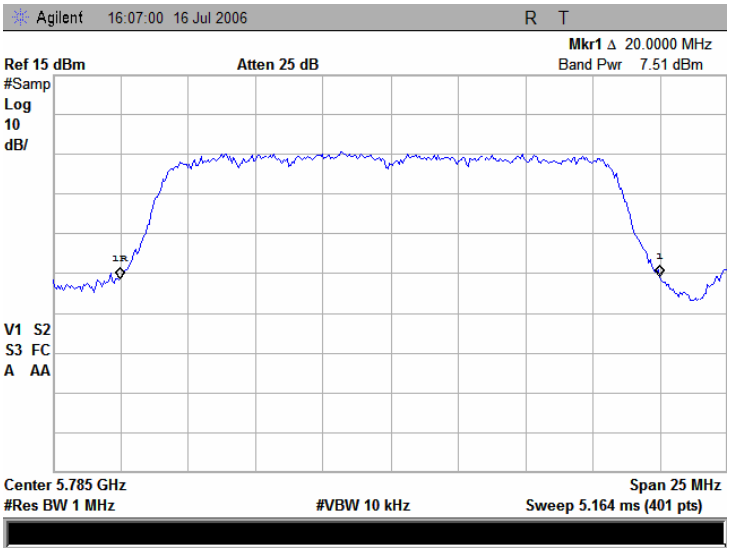


Plot 7.4.12 Peak output power at 5.745 GHz, 54 Mbps

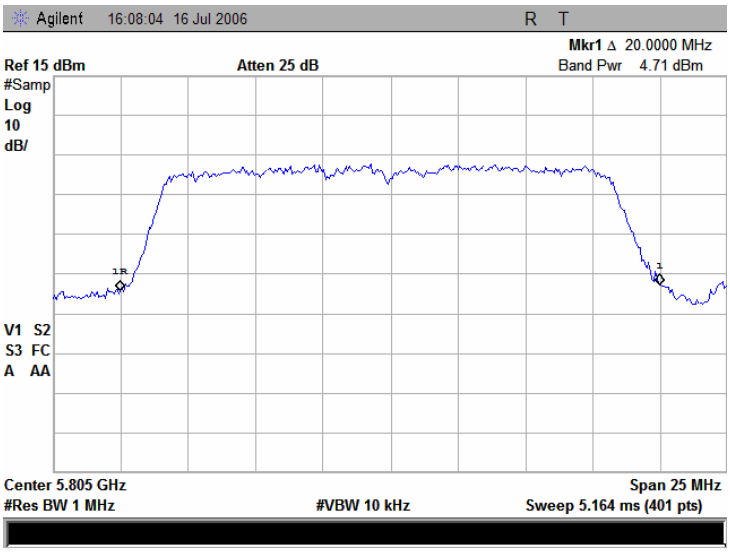


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.4.13 Peak output power at 5.785 GHz, 54 Mbps



Plot 7.4.14 Peak output power at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

7.5 Peak output power, 802.11 a and 802.11 b/g

7.5.1 General

This test was performed to measure the maximum peak output power at the transmitter RF antenna connector. Specification test limits are given inTable 7.5.1.

Table 7.5.1 Peak output power limits

Operating frequency range, MHz	Maximum peak transmit power*	Used limit*, dBm
5150-5250	The lesser of 50 mW or 4 dBm +10 log B	15.32 dBm
5250-5350	The lesser of 250 mW or 11 dBm +10 log B	22.32 dBm
5725 - 5825	The lesser of 1 W or 17 dBm +10 log B (B is the 26-dB emission bandwidth in MHz)	28.32 dBm

The maximum 26-dB emission bandwidth is 17.0 MHz at 5180 MHz channel frequency, the limit is equal to:
4 dBm + 10 log 17.0625 **=16.32 dBm** (less than 50 mW = 17 dBm);
11 dBm + 10 log 17.0625 **=23.32 dBm** (less than 250 mW = 24 dBm);
17 dBm + 10 log 117.0625 = **29.32 dBm** (less than 1 W = 30 dBm);
* Note 1: @7 dBi antenna gain the limits of peak output power shall be reduced 1 dB.

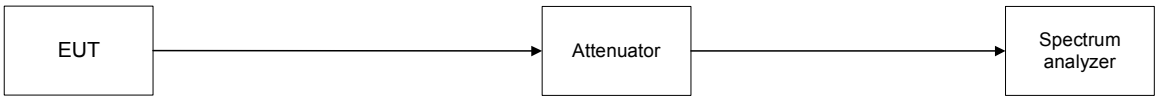
7.5.2 Test procedure

7.5.2.1 The EUT was set up as shown in Figure 7.5.1, energized and its proper operation was checked.

7.5.2.2 The EUT was adjusted to produce maximum available for end user RF output power.

7.5.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the 5.120-5.825 GHz frequency range.

Figure 7.5.1 Peak output power test setup



Test specification:	**Section 15.407(a)(1-3), Peak output power**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/16/2006		
Temperature: 23 ºC	**Air Pressure:** 1012 hPa	**Relative Humidity:** 46 %	**Power Supply:** 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Table 7.5.2 Peak output power test results

OPERATING FREQUENCY RANGE: 5150 - 5825 MHz
DETECTOR USED: Sample
RESOLUTION BANDWIDTH: 1 MHz
VIDEO BANDWIDTH: 1 kHz for 6 Mbps
10 kHz for 54 Mbps
MODULATION SIGNAL: Digital

Frequency, GHz	Total power, dBm	Limit*, dBm	Margin, dB	Verdict
Data rate 6 Mbps				
5.18	7.18	15.32	-8.14	Pass
5.26	12.23	21.32	-9.09	Pass
5.32	3.47	21.32	-17.85	Pass
5.745	9.31	27.32	-18.01	Pass
5.785	7.29	27.32	-20.03	Pass
5.805	2.13	27.32	-25.19	Pass
Data rate 54 Mbps				
5.18	5.92	15.32	-9.40	Pass
5.26	10.59	21.32	-10.73	Pass
5.32	4.39	21.32	-16.94	Pass
5.745	8.98	27.32	-18.34	Pass
5.785	5.61	27.32	-21.71	Pass
5.805	2.40	27.32	-24.92	Pass

* Note: @7 dBi antenna gain the limits of peak output power were reduced 1 dB

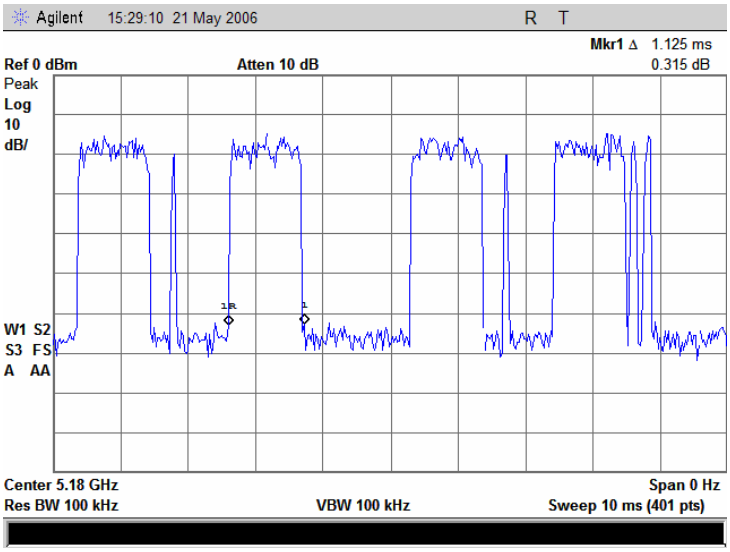
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2867					

Full description is given in Appendix A.

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

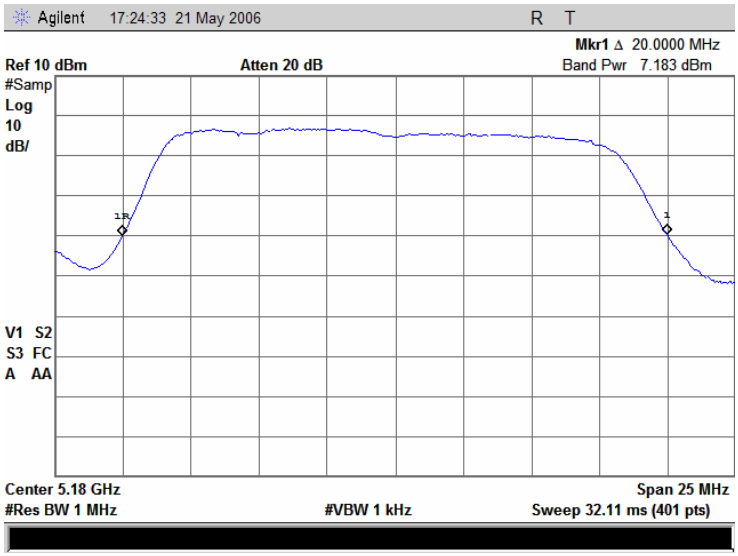
Plot 7.5.1 Pulse duration measurement, 6 Mbps



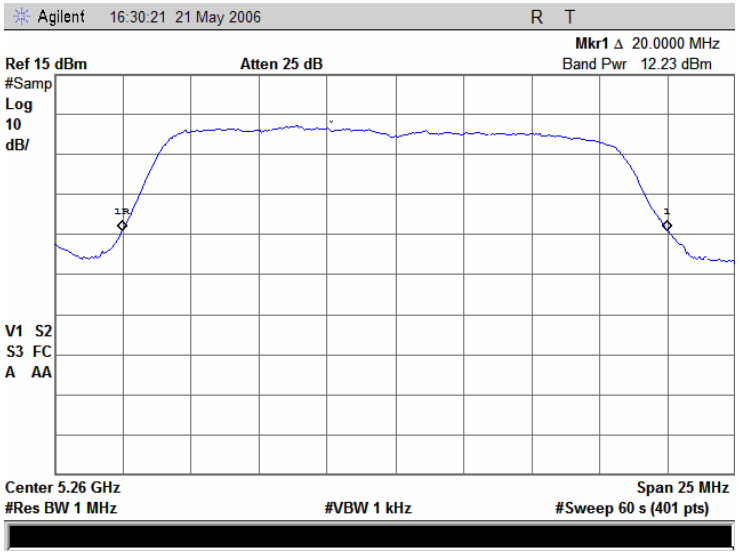
Video bandwidth (VBW) was calculated from maximum usable transmission pulse duration T, shown in the plot above, VBW ≥ 1/T ≥ 1 / 1.125ms ≥ 888.8 Hz, hence VBW of 1 kHz was chosen for measurements

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.5.2 Peak output power at 5.180 GHz, 6 Mbps

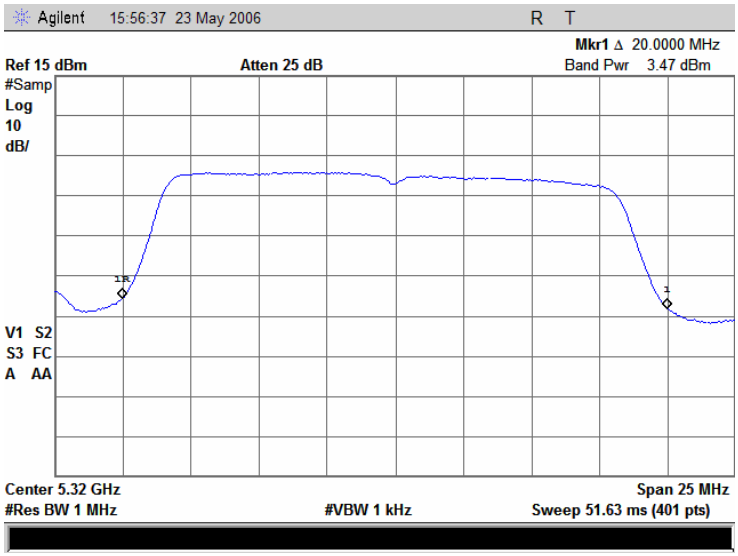


Plot 7.5.3 Peak output power at 5.260 GHz, 6 Mbps

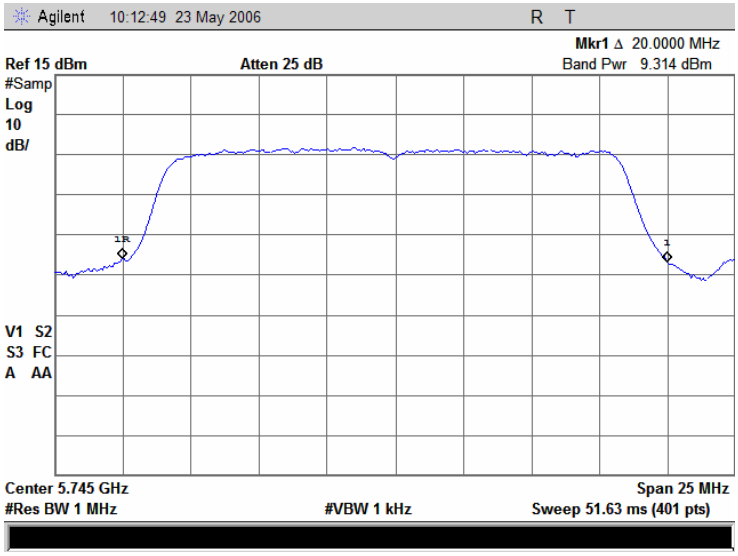


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.5.4 Peak output power at 5.320 GHz, 6 Mbps

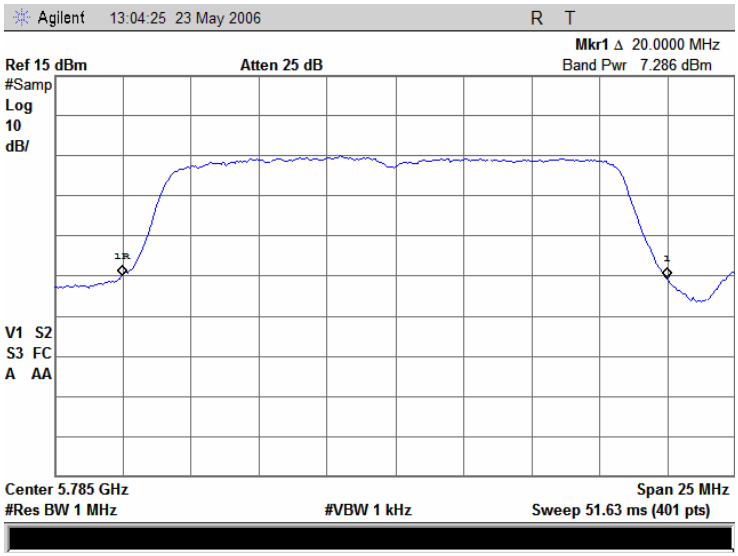


Plot 7.5.5 Peak output power at 5.745 GHz, 6 Mbps

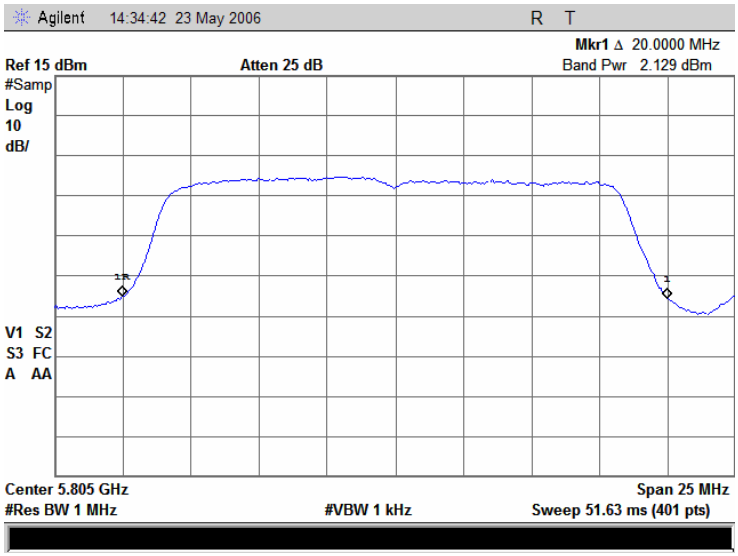


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.5.6 Peak output power at 5.785 GHz, 6 Mbps

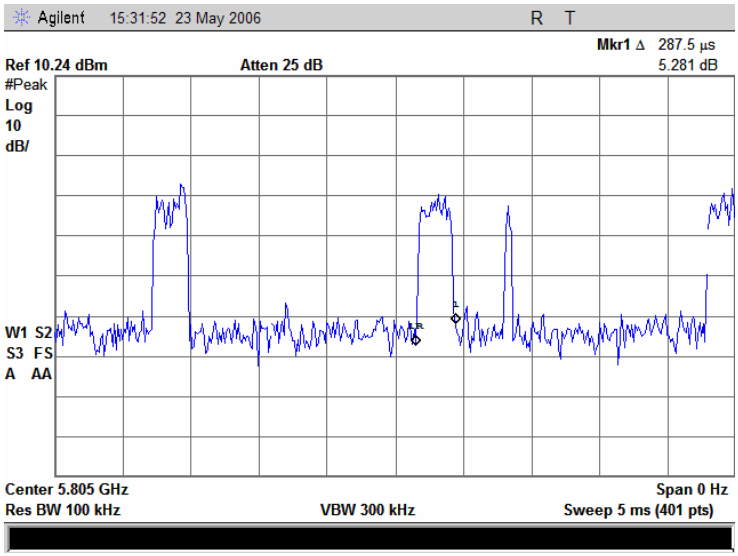


Plot 7.5.7 Peak output power at 5.805 GHz, 6 Mbps



Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

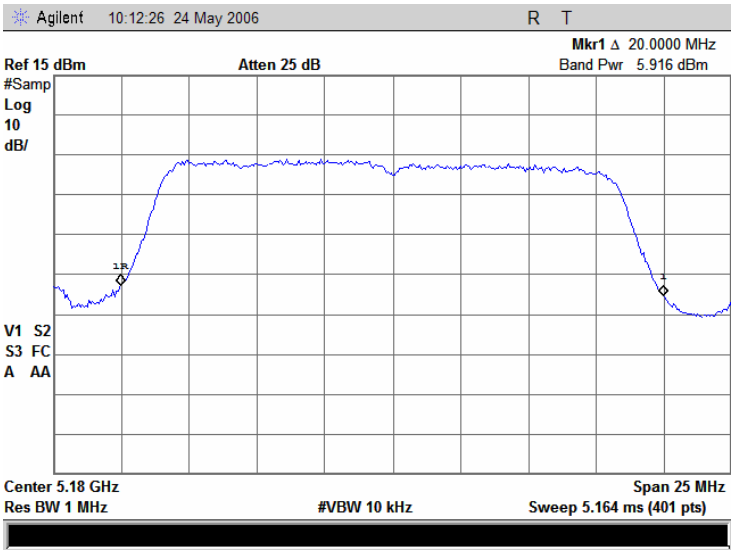
Plot 7.5.8 Pulse duration measurement, 54 Mbps



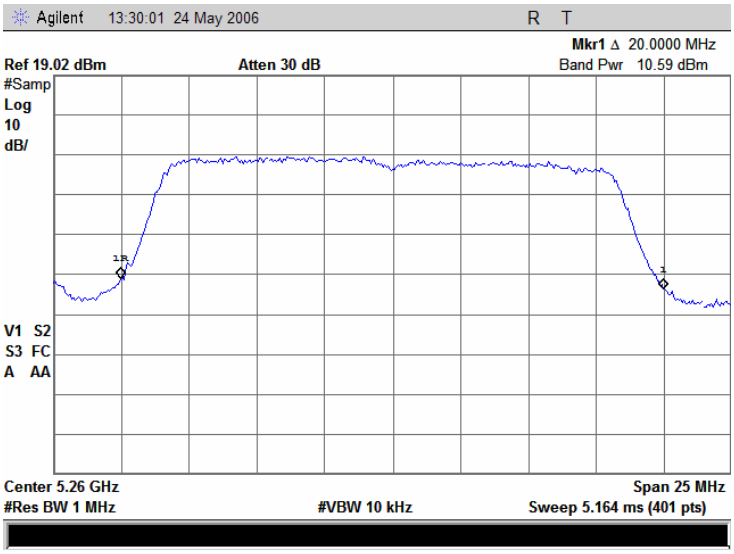
Video bandwidth (VBW) was calculated from maximum usable transmission pulse duration T, shown in the plot above, VBW ≥ 1/T ≥ 1 / 287.5µs ≥ 3478.3 Hz, hence VBW of 10 kHz was chosen for measurements

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.5.9 Peak output power at 5.180 GHz, 54 Mbps

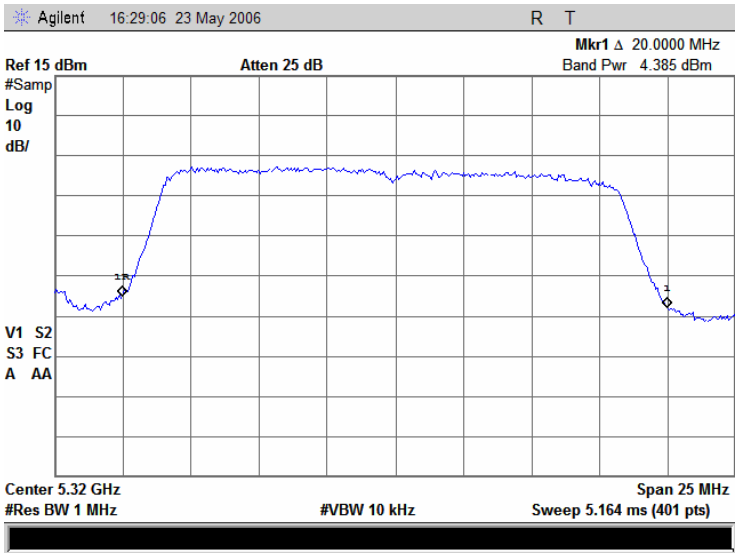


Plot 7.5.10 Peak output power at 5.260 GHz, 54 Mbps

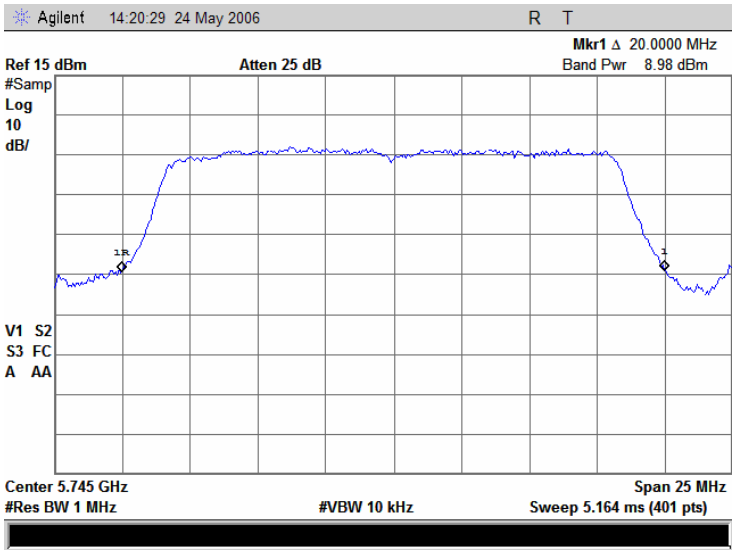


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.5.11 Peak output power at 5.320 GHz, 54 Mbps

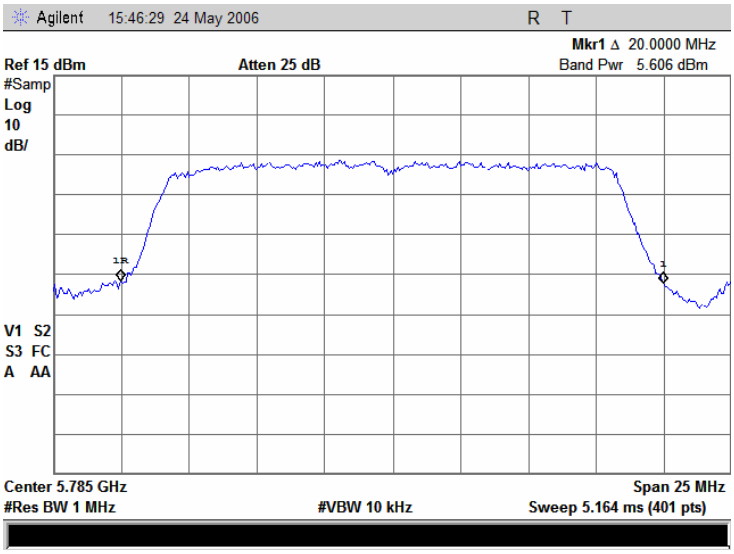


Plot 7.5.12 Peak output power at 5.745 GHz, 54 Mbps

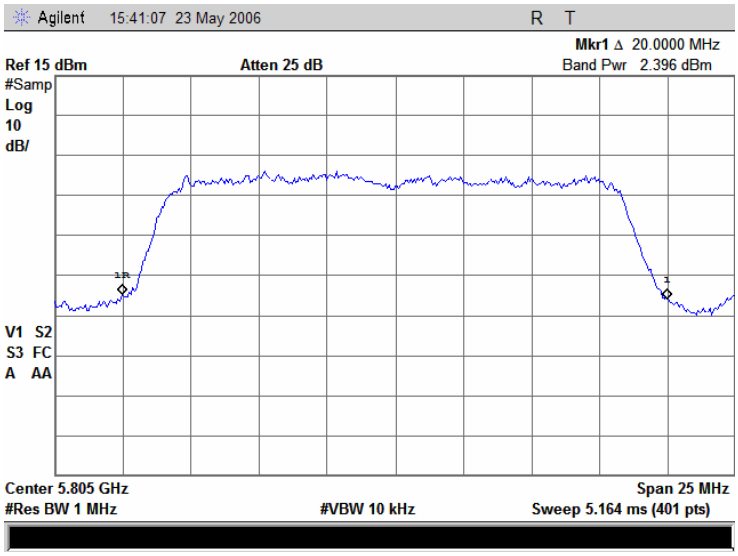


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.5.13 Peak output power at 5.785 GHz, 54 Mbps



Plot 7.5.14 Peak output power at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

7.6 Peak output power, 802.11 a, 802.11 b/g and CELL/PCS

7.6.1 General

This test was performed to measure the maximum peak output power at the transmitter RF antenna connector. Specification test limits are given in Table 7.6.1.

Table 7.6.1 Peak output power limits

Operating frequency range, MHz	Maximum peak transmit power*	Used limit*, dBm
5150-5250	The lesser of 50 mW or 4 dBm +10 log B	15.3 dBm
5250-5350	The lesser of 250 mW or 11 dBm +10 log B	22.3 dBm
5725 - 5825	The lesser of 1 W or 17 dBm +10 log B (B is the 26-dB emission bandwidth in MHz)	28.3 dBm

The maximum 26-dB emission bandwidth is 17.0 MHz at 5180 MHz channel frequency, the limit is equal to:
4 dBm + 10 log 17 =**16.3 dBm** (less than 50 mW = 17 dBm);
11 dBm + 10 log 17 =**23.3 dBm** (less than 250 mW = 24 dBm);
17 dBm + 10 log 17 = **29.3 dBm** (less than 1 W = 30 dBm);
* Note 1: @7 dBi antenna gain the limits of peak output power shall be reduced 1 dB.

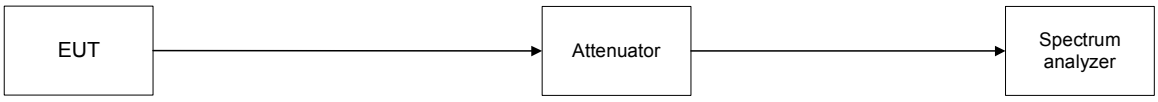
7.6.2 Test procedure

7.6.2.1 The EUT was set up as shown in Figure 7.6.1, energized and its proper operation was checked.

7.6.2.2 The EUT was adjusted to produce maximum available for end user RF output power.

7.6.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the 5.120-5.825 GHz frequency range.

Figure 7.6.1 Peak output power test setup



Test specification:	**Section 15.407(a)(1-3), Peak output power**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/16/2006		
Temperature: 23 ºC	**Air Pressure:** 1012 hPa	**Relative Humidity:** 46 %	**Power Supply:** 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Table 7.6.2 Peak output power test results

OPERATING FREQUENCY RANGE: 5150 - 5825 MHz
DETECTOR USED: Sample
RESOLUTION BANDWIDTH: 1 MHz
VIDEO BANDWIDTH: 1 kHz for 6 Mbps
10 kHz for 54 Mbps
MODULATION SIGNAL: Digital

Frequency, GHz	Total power, dBm	Limit*, dBm	Margin, dB	Verdict
Data rate 6 Mbps				
5.18	7.55	15.30	-7.75	Pass
5.26	12.78	21.30	-8.52	Pass
5.32	3.45	21.30	-17.85	Pass
5.745	9.26	27.30	-18.04	Pass
5.785	7.29	27.30	-20.01	Pass
5.805	2.14	27.30	-25.16	Pass
Data rate 54 Mbps				
5.18	5.99	15.30	-9.31	Pass
5.26	10.60	21.30	-10.70	Pass
5.32	4.37	21.30	-16.94	Pass
5.745	8.95	27.30	-18.35	Pass
5.785	5.86	27.30	-21.44	Pass
5.805	2.14	27.30	-25.16	Pass

* Note: @7 dBi antenna gain the limits of peak output power were reduced 1 dB

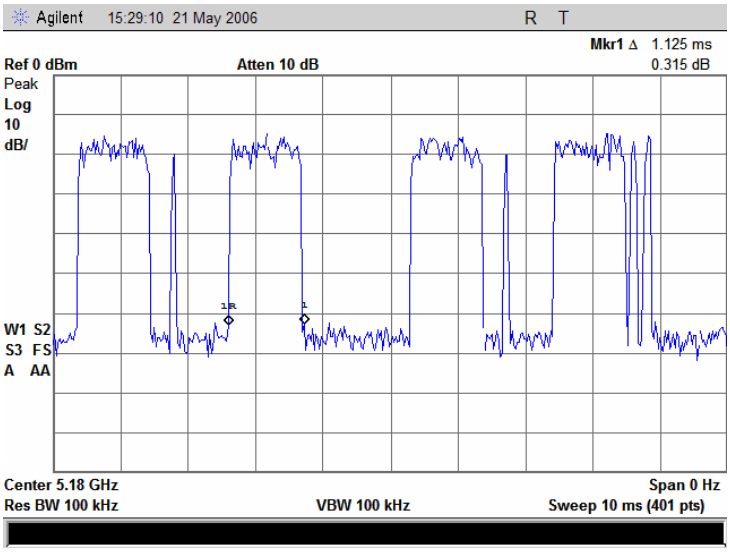
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2867					

Full description is given in Appendix A.

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

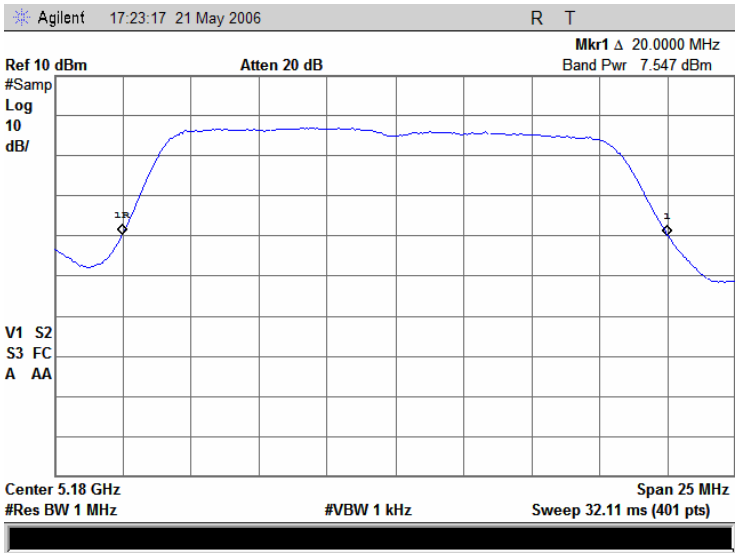
Plot 7.6.1 Pulse duration measurement, 6 Mbps



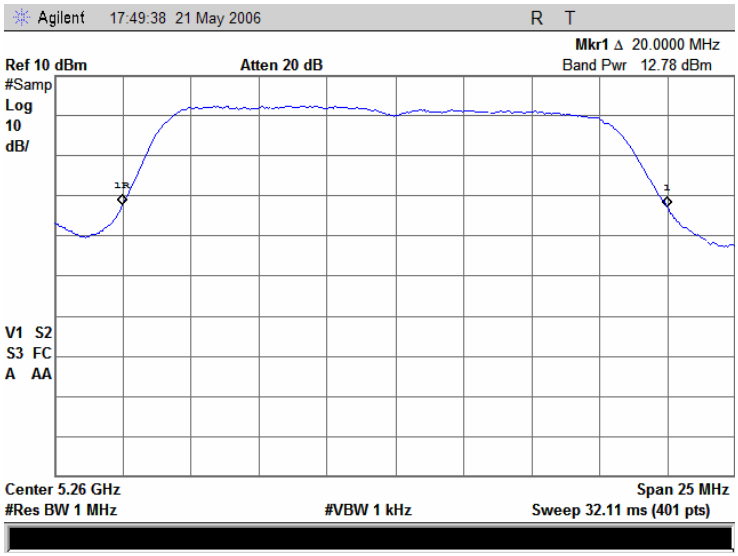
Video bandwidth (VBW) was calculated from maximum usable transmission pulse duration T, shown in the plot above, VBW ≥ 1/T ≥ 1 / 1.125ms ≥ 888.8 Hz, hence VBW of 1 kHz was chosen for measurements

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.6.2 Peak output power at 5.180 GHz, 6 Mbps

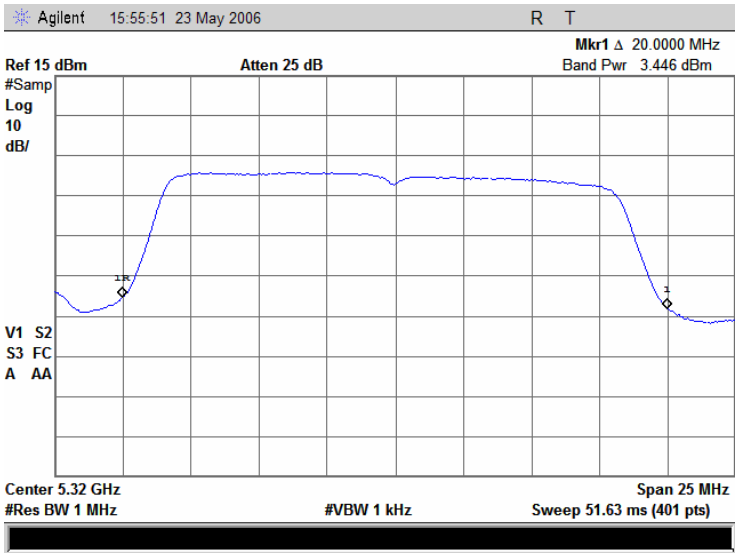


Plot 7.6.3 Peak output power at 5.260 GHz, 6 Mbps

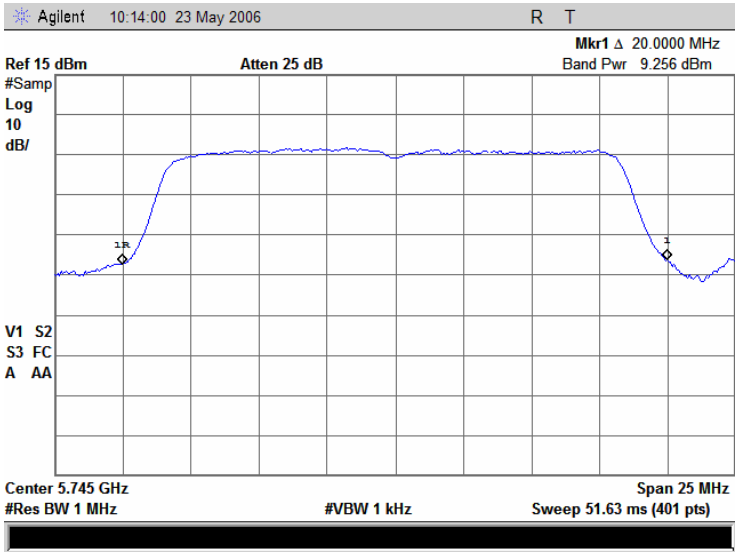


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.6.4 Peak output power at 5.320 GHz, 6 Mbps

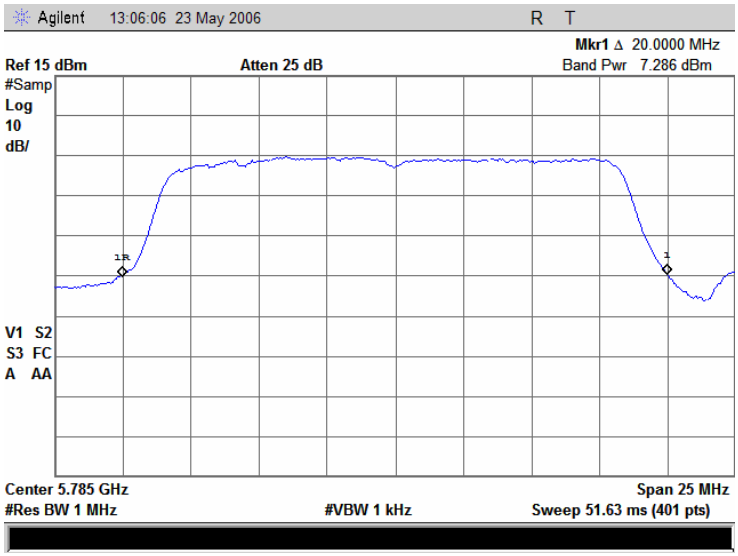


Plot 7.6.5 Peak output power at 5.745 GHz, 6 Mbps

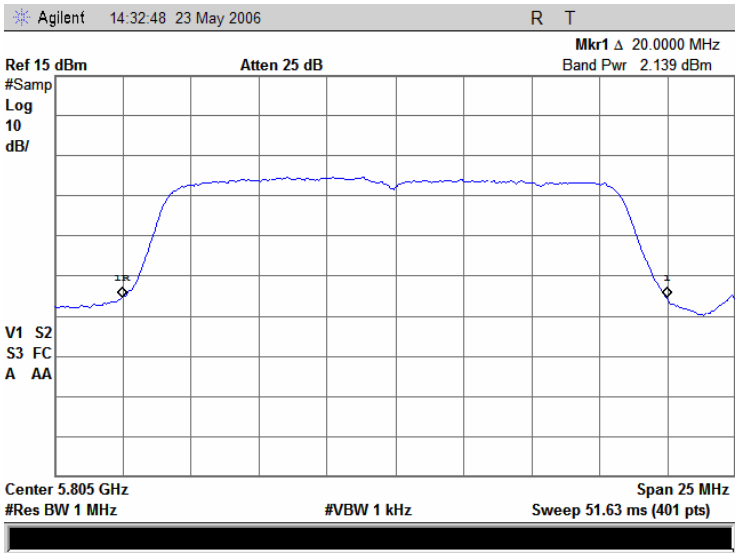


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.6.6 Peak output power at 5.785 GHz, 6 Mbps

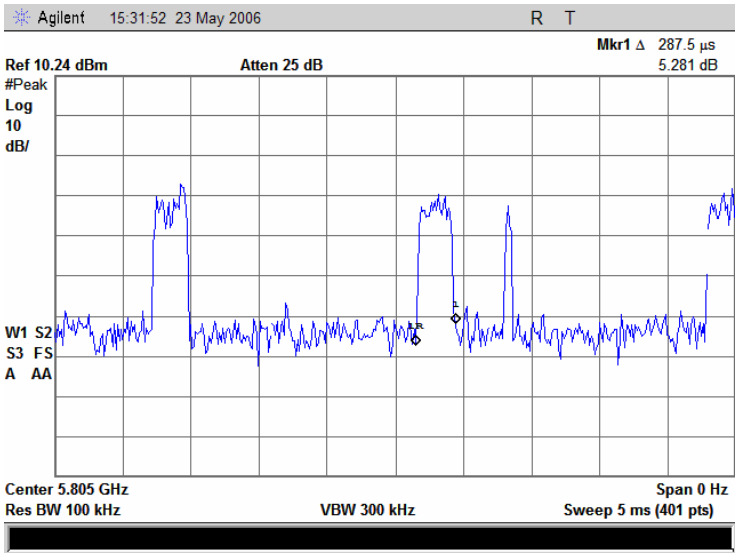


Plot 7.6.7 Peak output power at 5.805 GHz, 6 Mbps



Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

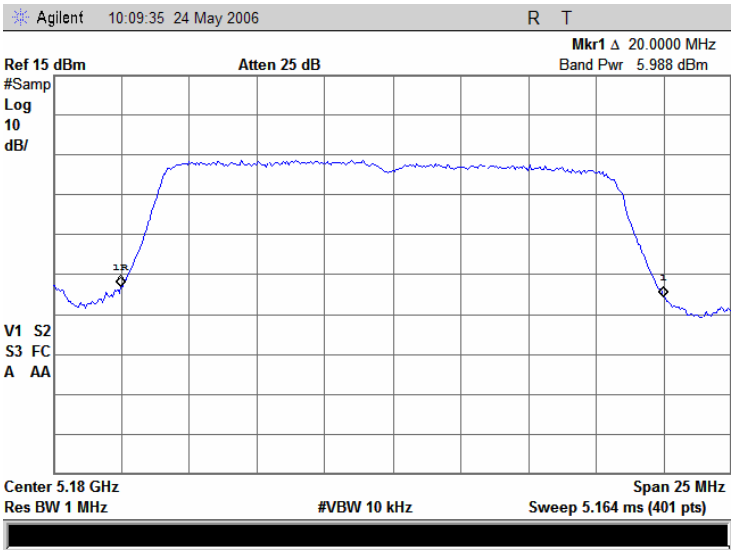
Plot 7.6.8 Pulse duration measurement, 54 Mbps



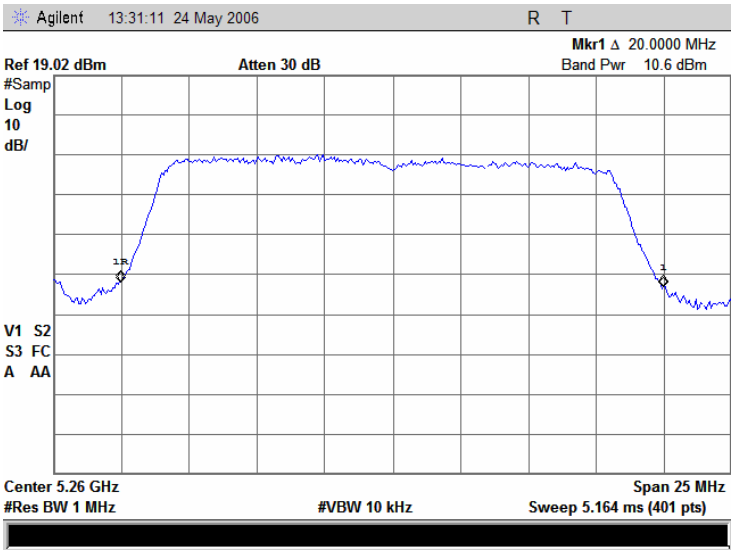
Video bandwidth (VBW) was calculated from maximum usable transmission pulse duration T, shown in the plot above, VBW ≥ 1/T ≥ 1 / 287.5µs ≥ 3478.3 Hz, hence VBW of 10 kHz was chosen for measurements

Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.6.9 Peak output power at 5.180 GHz, 54 Mbps

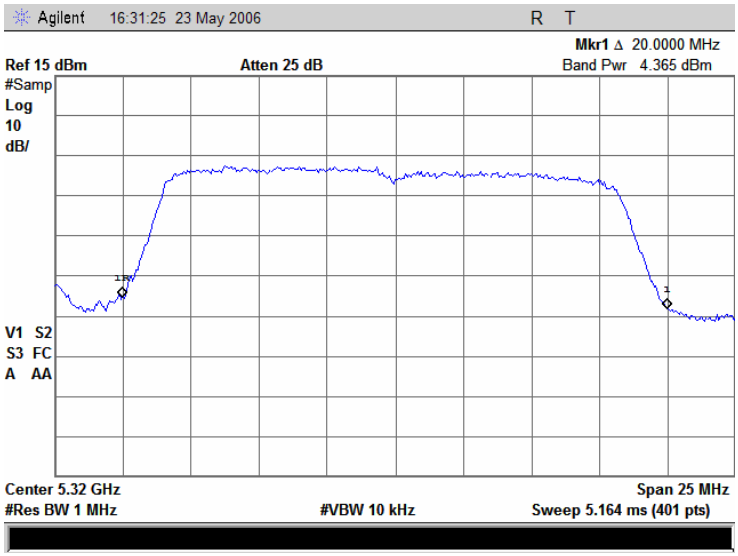


Plot 7.6.10 Peak output power at 5.260 GHz, 54 Mbps

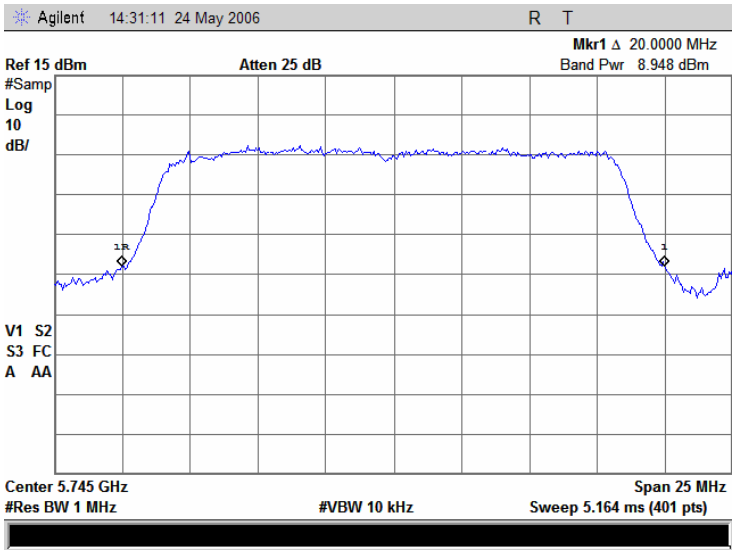


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.6.11 Peak output power at 5.320 GHz, 54 Mbps

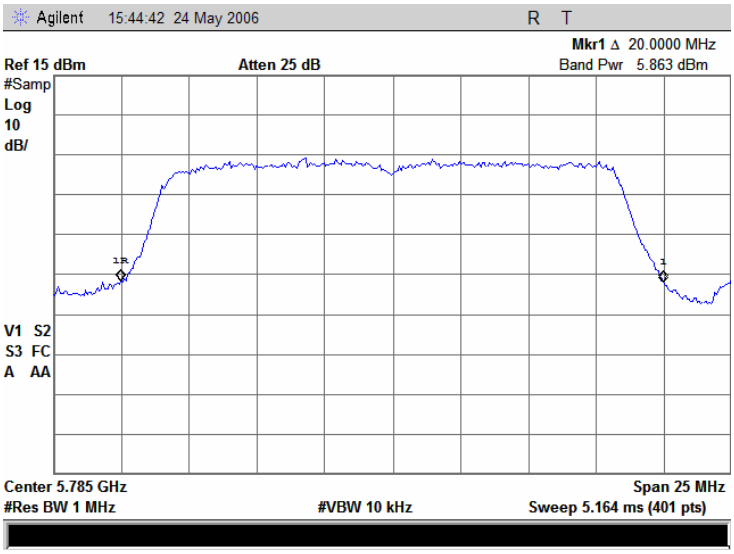


Plot 7.6.12 Peak output power at 5.745 GHz, 54 Mbps

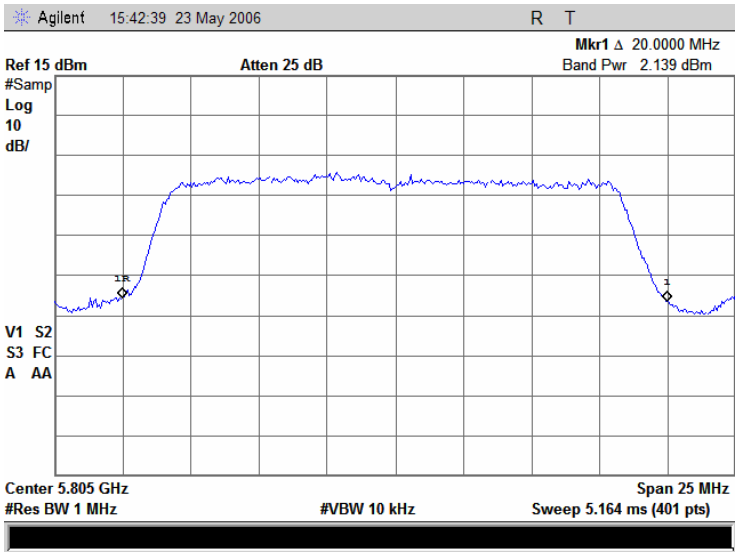


Test specification:	Section 15.407(a)(1-3), Peak output power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/16/2006		
Temperature: 23 °C	Air Pressure: 1012 hPa	Relative Humidity: 46 %	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.6.13 Peak output power at 5.785 GHz, 54 Mbps



Plot 7.6.14 Peak output power at 5.805 GHz, 54 Mbps



Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

7.7 Peak spectral power density, 802.11 a only

7.7.1 General

This test was performed to measure the peak spectral power density at the transmitter RF antenna connector. Specification test limits are given in Table 7.7.1.

Table 7.7.1 Peak spectral power density limits

Assigned frequency range, MHz	Measurement bandwidth, MHz	Peak spectral power density, dBm
5150 - 5250	1.0	4.0
5250 - 5350		11.0
5725 - 5825		17.0

* Note 1: @7 dBi antenna gain the limits of peak power spectral density shall be reduced 1 dB.

7.7.2 Test procedure

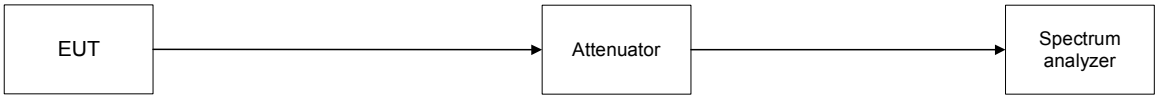
7.7.2.1 The EUT was set up as shown in Figure 7.7.1, energized and its proper operation was checked.

7.7.2.2 The EUT was adjusted to produce maximum available to end user RF output power.

7.7.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the frequency range.

7.7.2.4 The peak of emission was zoomed with span set just wide enough to capture the emission peak area and sweep time was set equal to span width divided by resolution bandwidth. Spectrum analyzer was set in peak hold mode, sufficient number of sweeps was allowed for trace stabilization and peak spectral power density was measured as provided in Table 7.7.2 and associated plots.

Figure 7.7.1 Peak spectral power density test setup



Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Table 7.7.2 Peak spectral power density test results

OPERATING FREQUENCY RANGE: 5150 - 5825 MHz
DETECTOR USED: Peak hold
RESOLUTION BANDWIDTH: 1 MHz
VIDEO BANDWIDTH: 3 MHz
MODULATION SIGNAL: Digital

Carrier frequency, MHz	Measured peak power spectral density, dBm/MHz	Calculated limit*, dBm/MHz	Margin**, dB	Verdict
Data rate 6 Mbps				
5180	1.41	3.0	-1.59	Pass
5260	7.55	10.0	-2.45	Pass
5320	1.03	10.0	-8.97	Pass
5745	4.88	16.0	-11.12	Pass
5785	-0.15	16.0	-16.15	Pass
5805	-1.71	16.0	-17.71	Pass
Data rate 54 Mbps				
5180	0.65	3.0	-2.35	Pass
5260	7.16	10.0	-2.84	Pass
5320	0.44	10.0	-9.56	Pass
5745	4.21	16.0	-11.79	Pass
5785	0.51	16.0	-15.49	Pass
5805	-1.96	16.0	-17.96	Pass

* @7 dBi antenna gain the limits of peak power spectral density were reduced 1 dB;
** Margin = Peak power density – calculated limit.

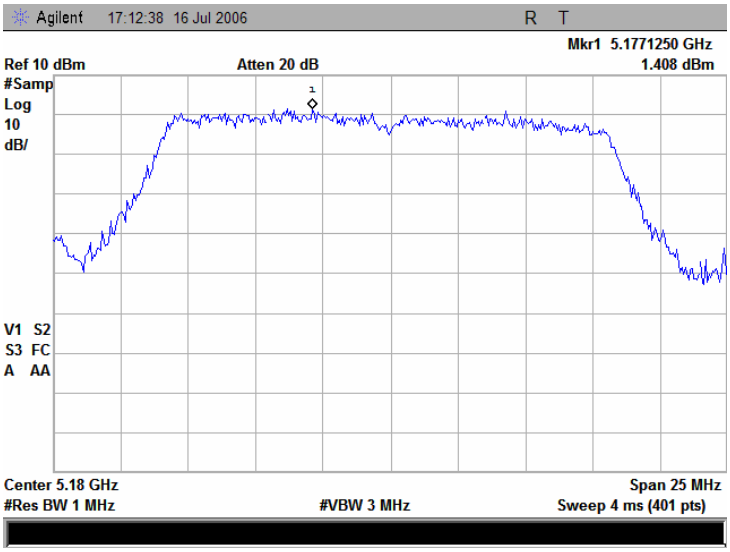
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2869					

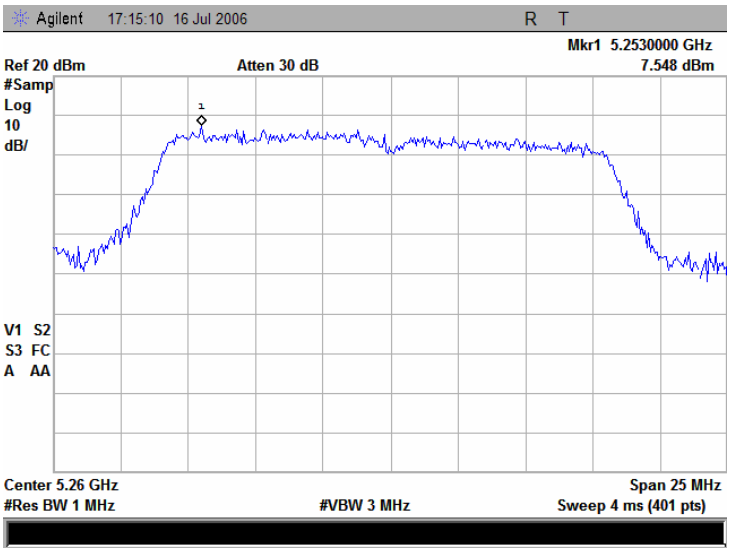
Full description is given in Appendix A.

Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.7.1 Peak spectral power density at 5.180 GHz, 6 Mbps

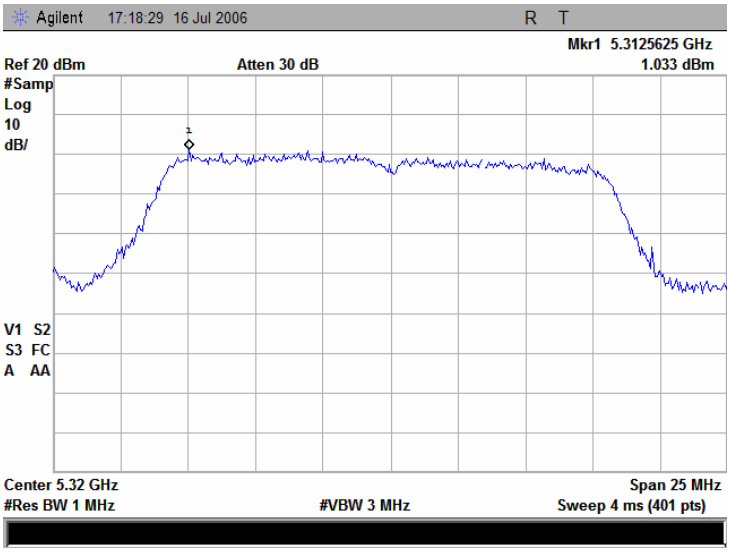


Plot 7.7.2 Peak spectral power density at 5.260 GHz, 6 Mbps

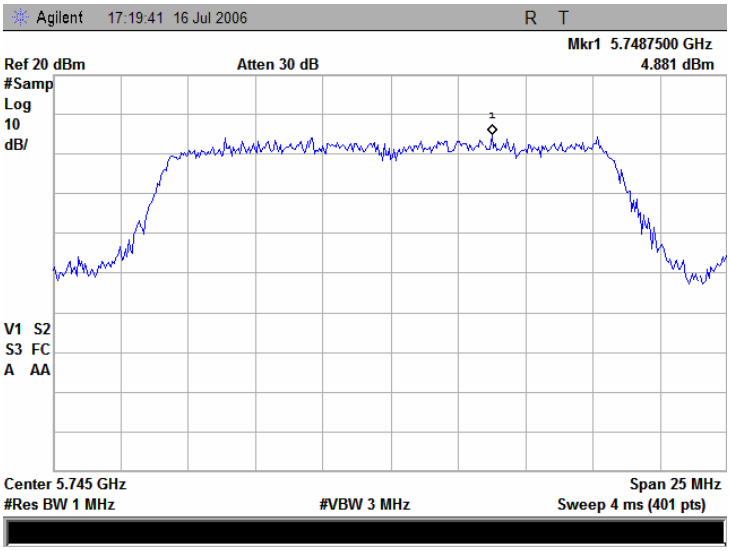


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.7.3 Peak spectral power density at 5.320 GHz, 6 Mbps

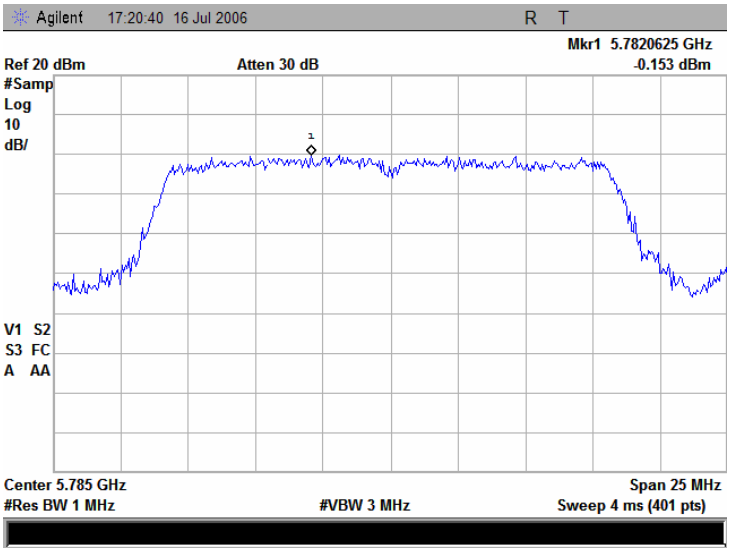


Plot 7.7.4 Peak spectral power density at 5.745 GHz, 6 Mbps

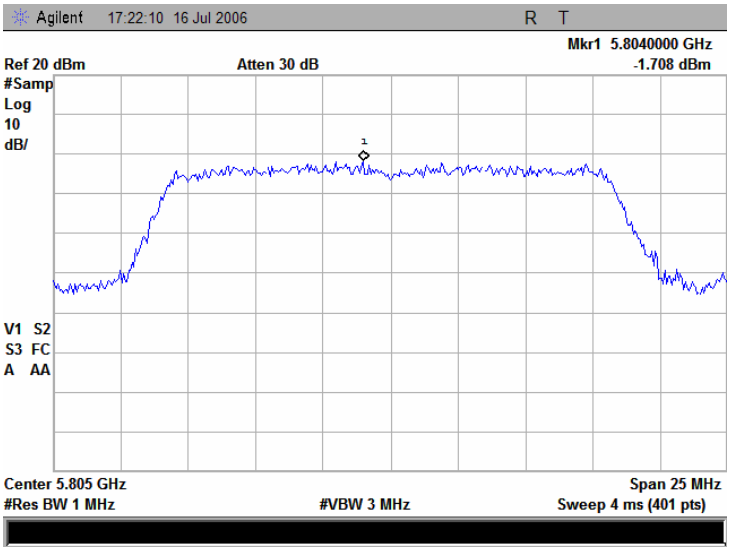


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.7.5 Peak spectral power density at 5.785 GHz, 6 Mbps

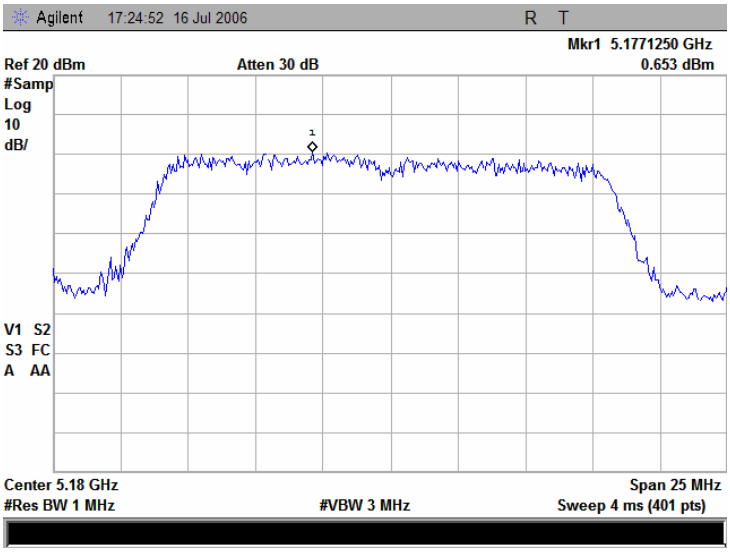


Plot 7.7.6 Peak spectral power density at 5.805 GHz, 6 Mbps

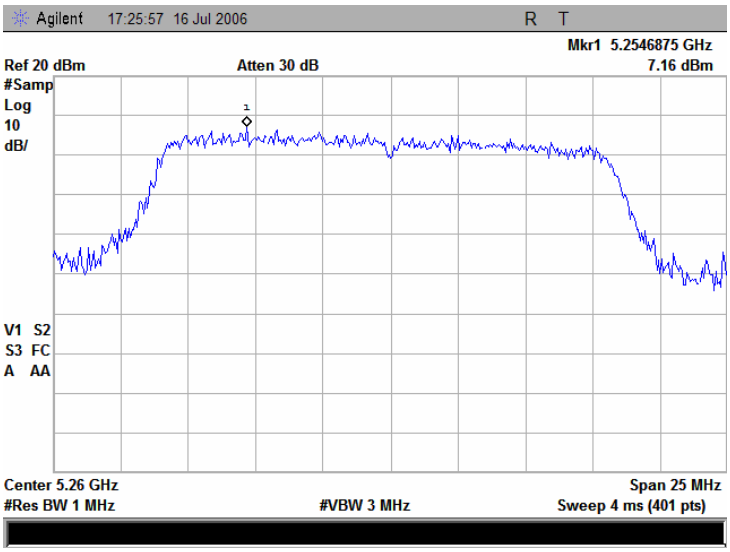


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.7.7 Peak spectral power density at 5.180 GHz, 54 Mbps

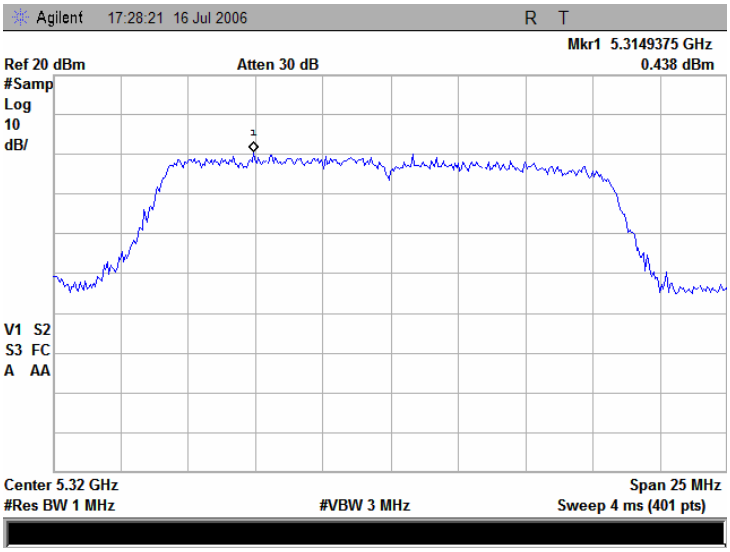


Plot 7.7.8 Peak spectral power density at 5.260 GHz, 54 Mbps

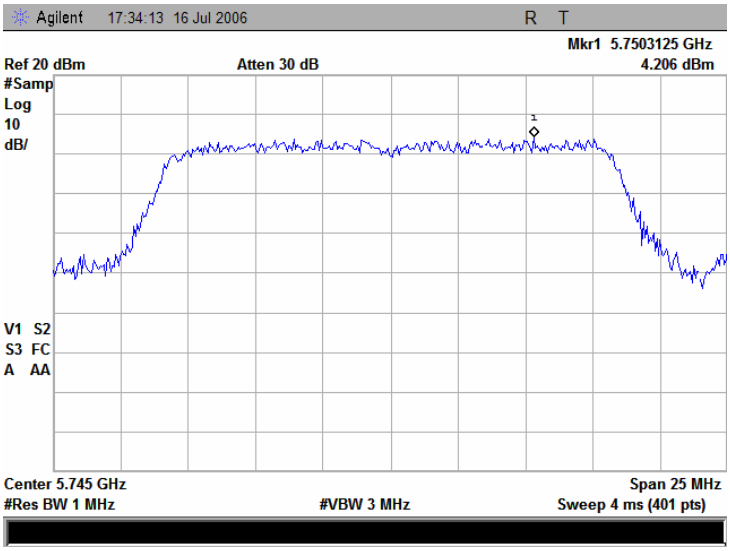


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.7.9 Peak spectral power density at 5.320 GHz, 54 Mbps

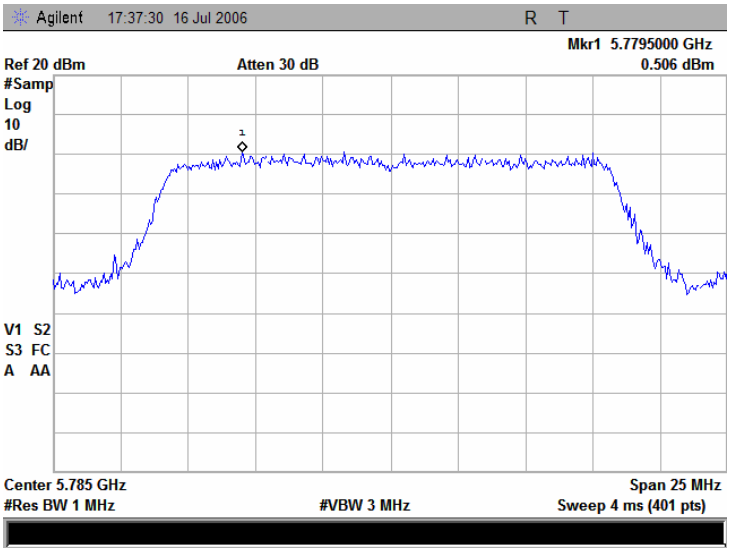


Plot 7.7.10 Peak spectral power density at 5.745 GHz, 54 Mbps

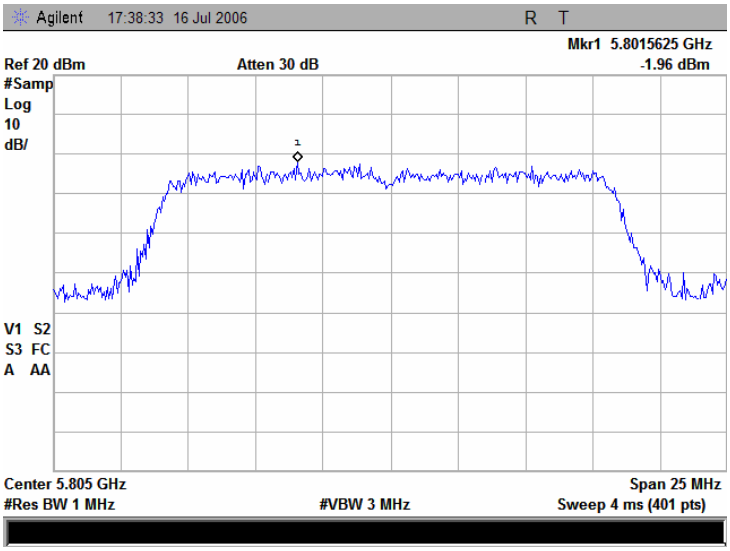


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.7.11 Peak spectral power density at 5.785 GHz, 54 Mbps



Plot 7.7.12 Peak spectral power density at 5.805 GHz, 54 Mbps



Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

7.8 Peak spectral power density, 802.11 a and 802.11 b/g

7.8.1 General

This test was performed to measure the peak spectral power density at the transmitter RF antenna connector. Specification test limits are given in Table 7.8.1.

Table 7.8.1 Peak spectral power density limits

Assigned frequency range, MHz	Measurement bandwidth, MHz	Peak spectral power density, dBm
5150 - 5250	1.0	4.0
5250 - 5350		11.0
5725 - 5825		17.0

* Note 1: @7 dBi antenna gain the limits of peak power spectral density shall be reduced 1 dB.

7.8.2 Test procedure

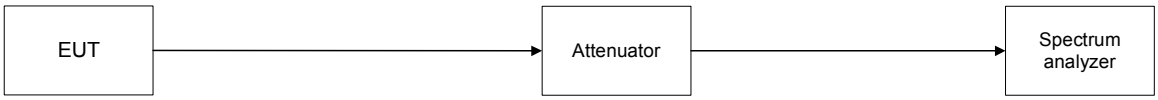
7.8.2.1 The EUT was set up as shown in Figure 7.8.1, energized and its proper operation was checked.

7.8.2.2 The EUT was adjusted to produce maximum available to end user RF output power.

7.8.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the frequency range.

7.8.2.4 The peak of emission was zoomed with span set just wide enough to capture the emission peak area and sweep time was set equal to span width divided by resolution bandwidth. Spectrum analyzer was set in peak hold mode, sufficient number of sweeps was allowed for trace stabilization and peak spectral power density was measured as provided in Table 7.8.2 and associated plots.

Figure 7.8.1 Peak spectral power density test setup



Test specification:	**Section 15. 407(a)(1-3), Peak power spectral density**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Table 7.8.2 Peak spectral power density test results

OPERATING FREQUENCY RANGE: 5150 - 5825 MHz
DETECTOR USED: Peak hold
RESOLUTION BANDWIDTH: 1 MHz
VIDEO BANDWIDTH: 3 MHz
MODULATION SIGNAL: Digital

Carrier frequency, MHz	Measured peak power spectral density, dBm/MHz	Calculated limit*, dBm/MHz	Margin**, dB	Verdict
Data rate 6 Mbps				
5180	0.67	3.0	-2.33	Pass
5260	8.58	10.0	-1.42	Pass
5320	-0.14	10.0	-10.14	Pass
5745	4.05	16.0	-11.95	Pass
5785	2.70	16.0	-13.30	Pass
5805	-2.62	16.0	-18.62	Pass
Data rate 54 Mbps				
5180	1.23	3.0	-1.77	Pass
5260	6.23	10.0	-3.77	Pass
5320	-0.75	10.0	-10.75	Pass
5745	3.35	16.0	-12.65	Pass
5785	0.59	16.0	-15.41	Pass
5805	-2.41	16.0	-18.41	Pass

* @7 dBi antenna gain the limits of peak power spectral density were reduced 1 dB;
** Margin = Peak power density – calculated limit.

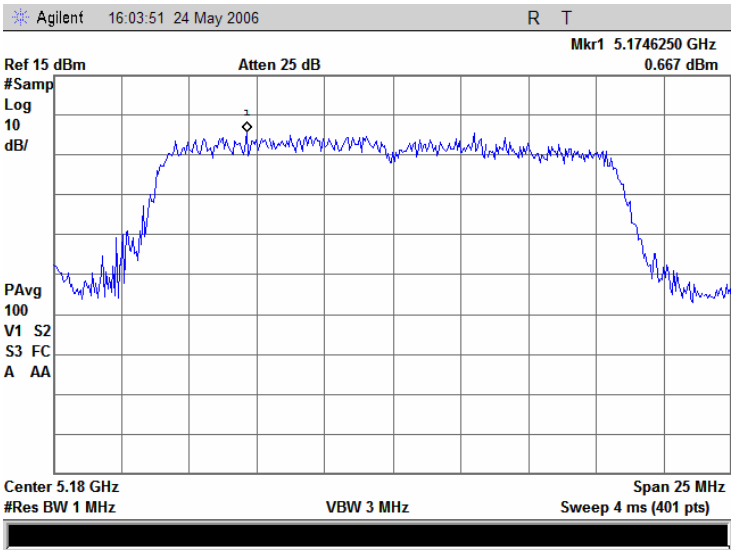
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2867					

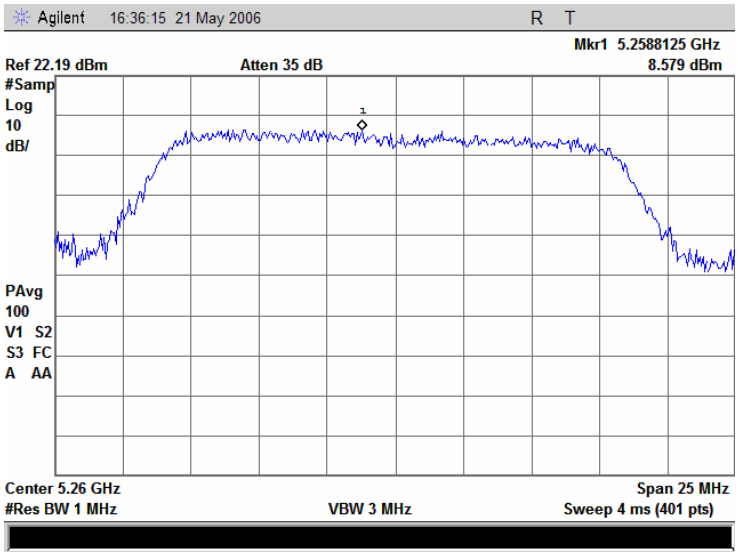
Full description is given in Appendix A.

Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.8.1 Peak spectral power density at 5.180 GHz, 6 Mbps

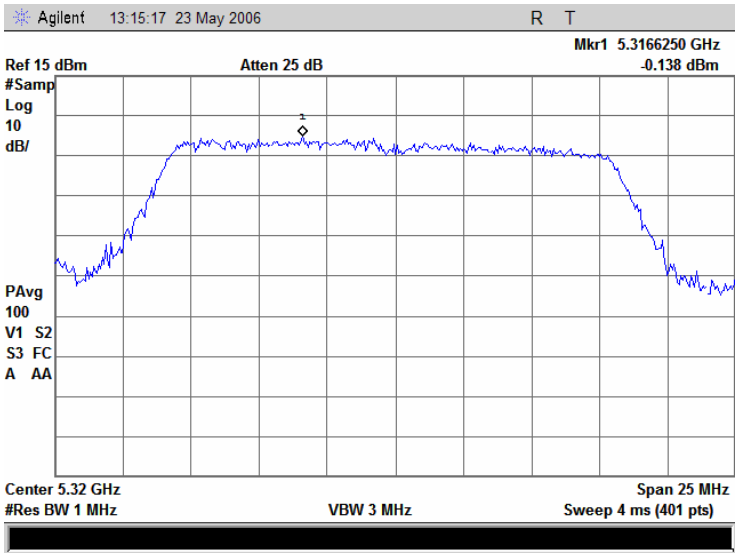


Plot 7.8.2 Peak spectral power density at 5.260 GHz, 6 Mbps

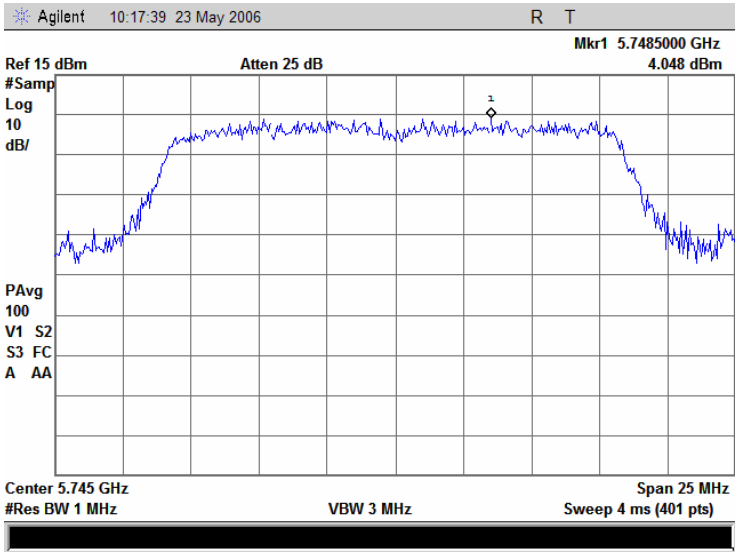


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.8.3 Peak spectral power density at 5.320 GHz, 6 Mbps

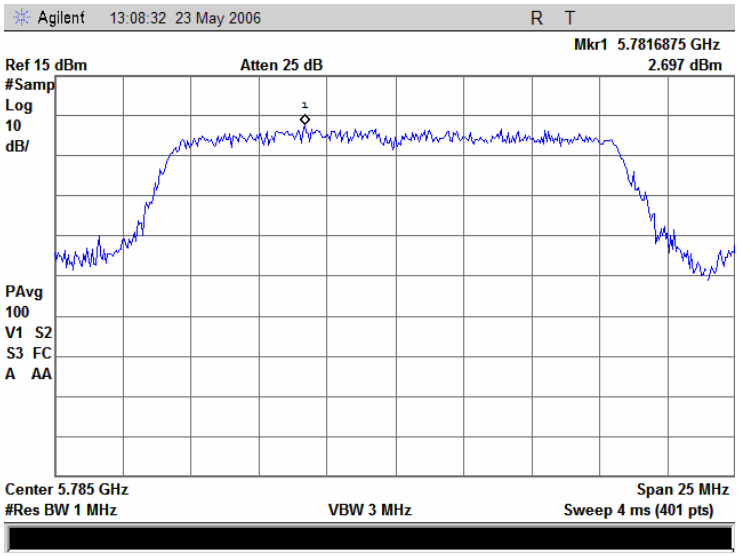


Plot 7.8.4 Peak spectral power density at 5.745 GHz, 6 Mbps

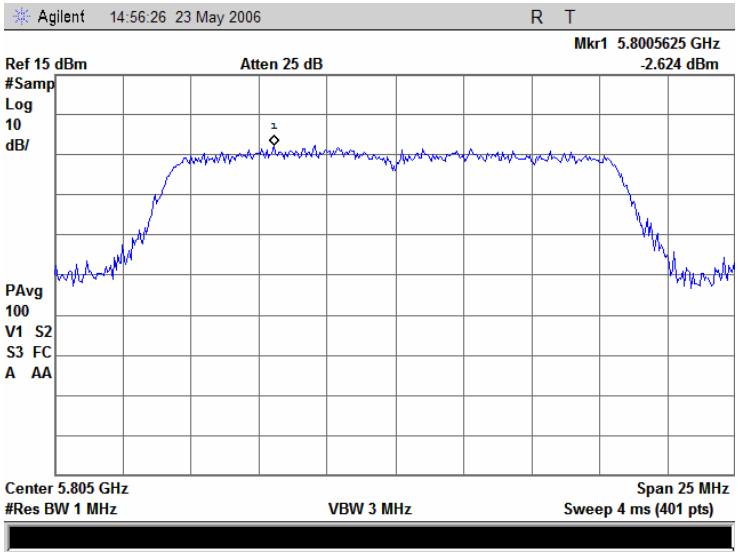


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.8.5 Peak spectral power density at 5.785 GHz, 6 Mbps

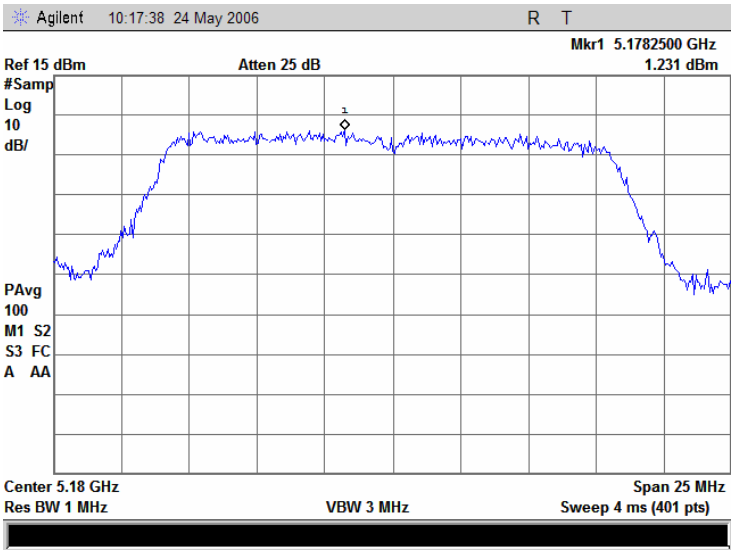


Plot 7.8.6 Peak spectral power density at 5.805 GHz, 6 Mbps

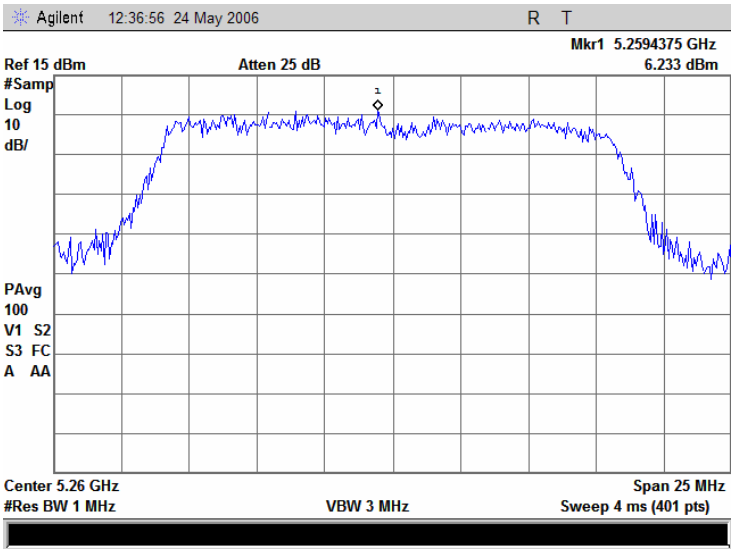


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.8.7 Peak spectral power density at 5.180 GHz, 54 Mbps

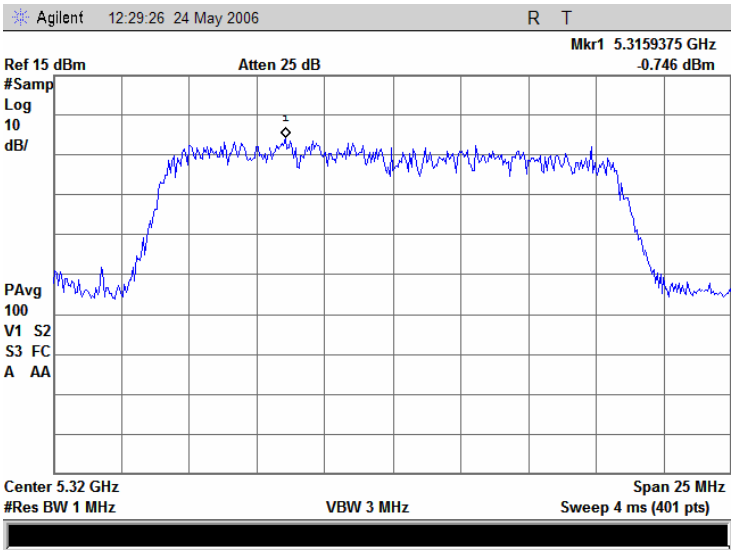


Plot 7.8.8 Peak spectral power density at 5.260 GHz, 54 Mbps

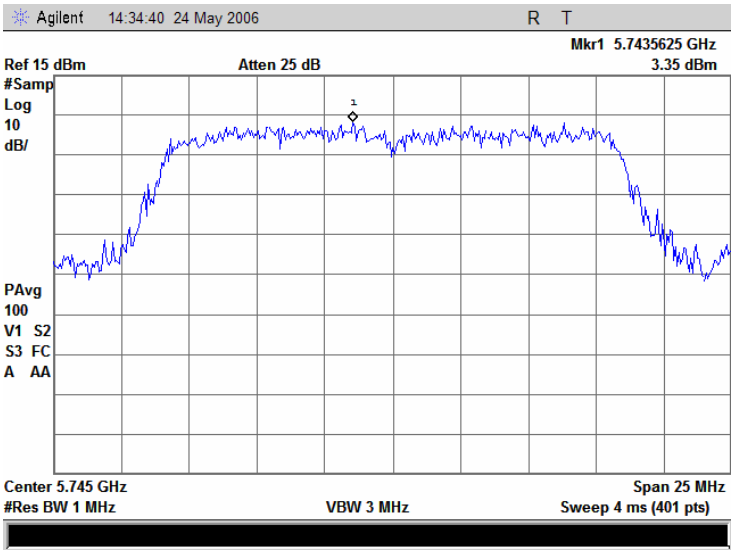


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.8.9 Peak spectral power density at 5.320 GHz, 54 Mbps

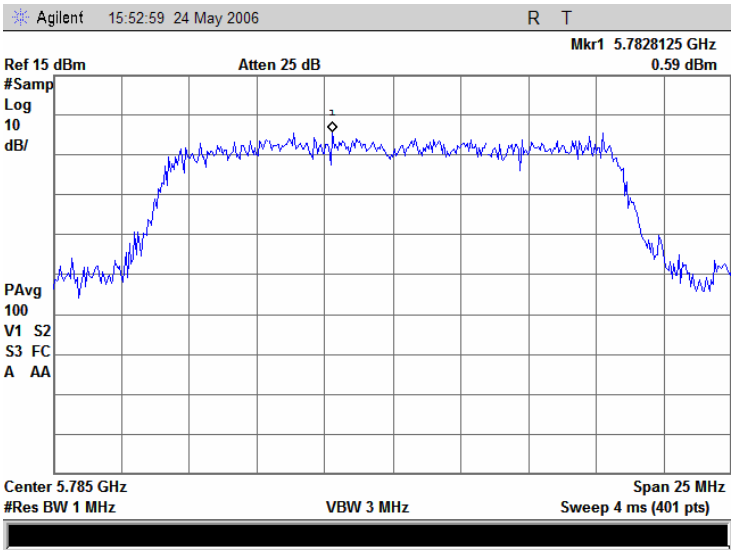


Plot 7.8.10 Peak spectral power density at 5.745 GHz, 54 Mbps

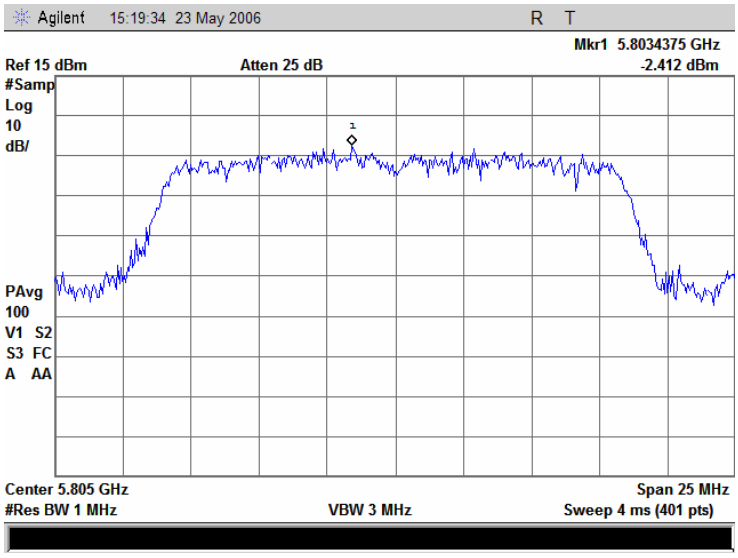


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.8.11 Peak spectral power density at 5.785 GHz, 54 Mbps



Plot 7.8.12 Peak spectral power density at 5.805 GHz, 54 Mbps



Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

7.9 Peak spectral power density, 802.11 a, 802.11 b/g and CELL/PCS

7.9.1 General

This test was performed to measure the peak spectral power density at the transmitter RF antenna connector. Specification test limits are given in Table 7.9.1.

Table 7.9.1 Peak spectral power density limits

Assigned frequency range, MHz	Measurement bandwidth, MHz	Peak spectral power density, dBm
5150 - 5250	1.0	4.0
5250 - 5350		11.0
5725 - 5825		17.0

* Note 1: @7 dBi antenna gain the limits of peak power spectral density shall be reduced 1 dB.

7.9.2 Test procedure

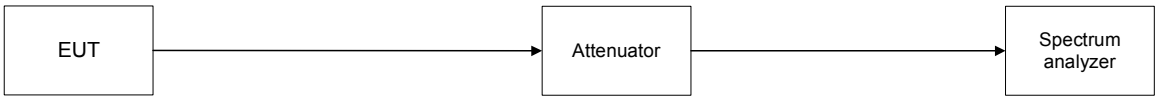
7.9.2.1 The EUT was set up as shown in Figure 7.9.1, energized and its proper operation was checked.

7.9.2.2 The EUT was adjusted to produce maximum available to end user RF output power.

7.9.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the frequency range.

7.9.2.4 The peak of emission was zoomed with span set just wide enough to capture the emission peak area and sweep time was set equal to span width divided by resolution bandwidth. Spectrum analyzer was set in peak hold mode, sufficient number of sweeps was allowed for trace stabilization and peak spectral power density was measured as provided in Table 7.9.2 and associated plots.

Figure 7.9.1 Peak spectral power density test setup



Test specification:	**Section 15. 407(a)(1-3), Peak power spectral density**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Table 7.9.2 Peak spectral power density test results

OPERATING FREQUENCY RANGE: 5150 - 5825 MHz
DETECTOR USED: Peak hold
RESOLUTION BANDWIDTH: 1 MHz
VIDEO BANDWIDTH: 3 MHz
MODULATION SIGNAL: Digital

Carrier frequency, MHz	Measured peak power spectral density, dBm/MHz	Calculated limit*, dBm/MHz	Margin**, dB	Verdict
Data rate 6 Mbps				
5180	0.55	3.0	-2.45	Pass
5260	9.15	10.0	-0.85	Pass
5320	-0.78	10.0	-10.78	Pass
5745	3.41	16.0	-12.59	Pass
5785	2.77	16.0	-13.23	Pass
5805	-3.43	16.0	-19.43	Pass
Data rate 54 Mbps				
5180	0.06	3.0	-2.94	Pass
5260	5.35	10.0	-4.65	Pass
5320	-0.53	10.0	-10.53	Pass
5745	4.18	16.0	-11.82	Pass
5785	1.36	16.0	-14.64	Pass
5805	-1.71	16.0	-17.71	Pass

* @7 dBi antenna gain the limits of peak power spectral density were reduced 1 dB;
** Margin = Peak power density – calculated limit.

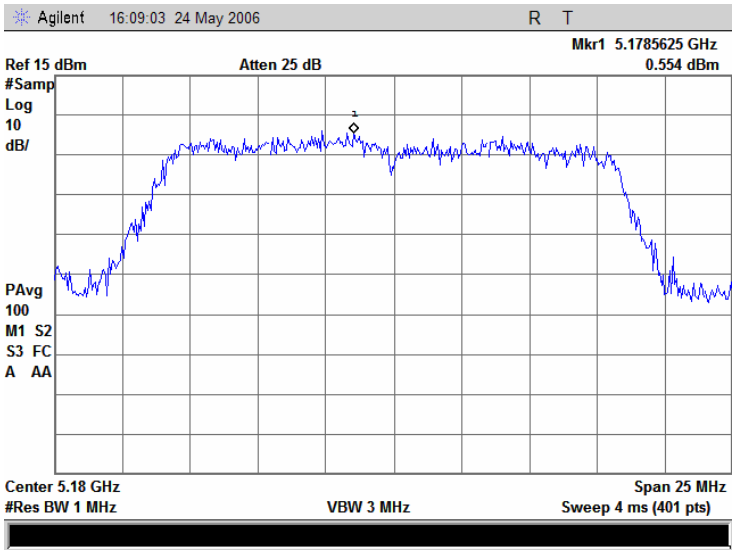
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2867					

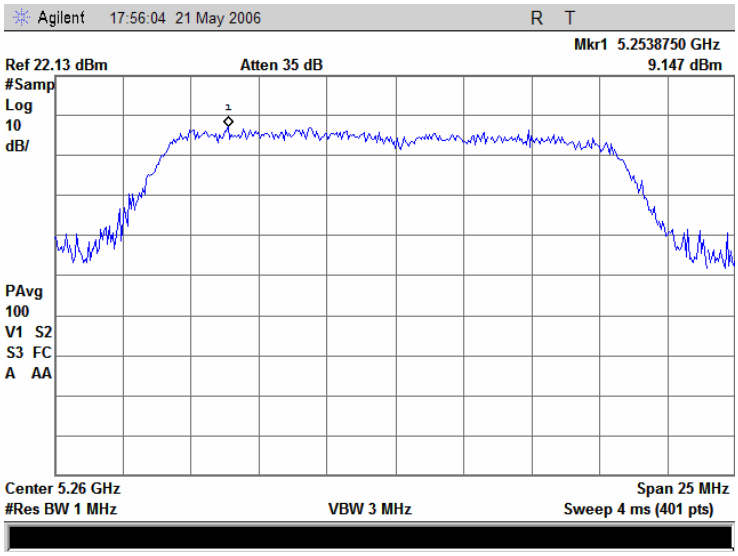
Full description is given in Appendix A.

Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.9.1 Peak spectral power density at 5.180 GHz, 6 Mbps

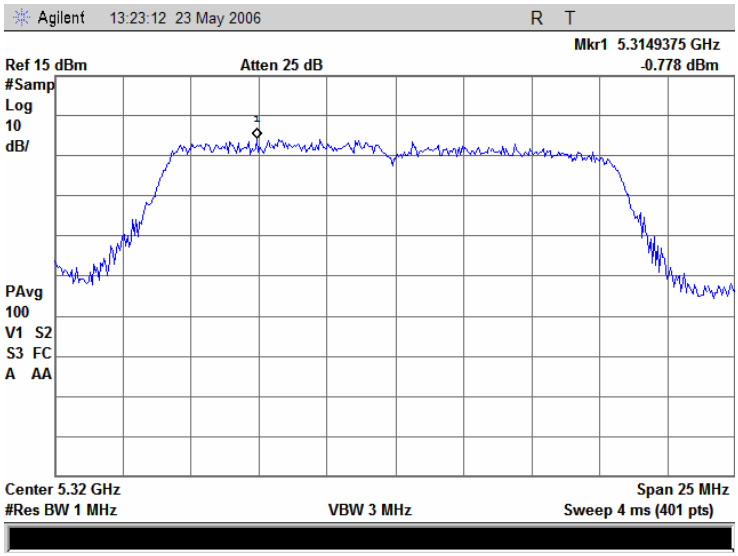


Plot 7.9.2 Peak spectral power density at 5.260 GHz, 6 Mbps

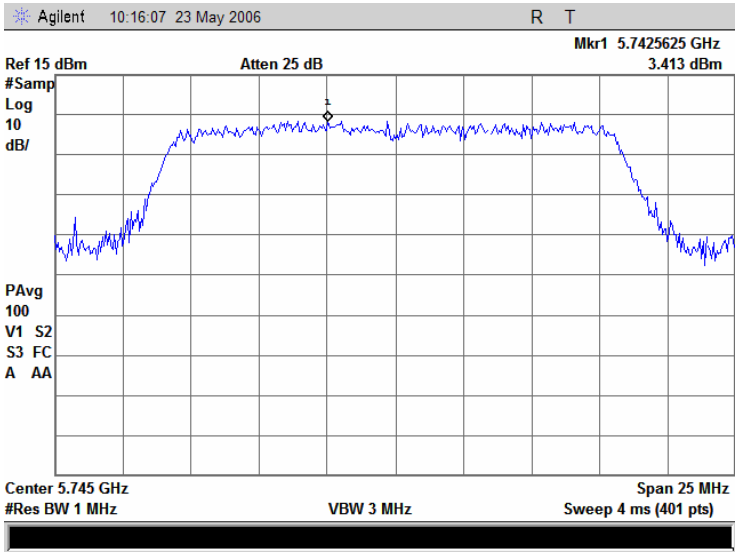


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.9.3 Peak spectral power density at 5.320 GHz, 6 Mbps

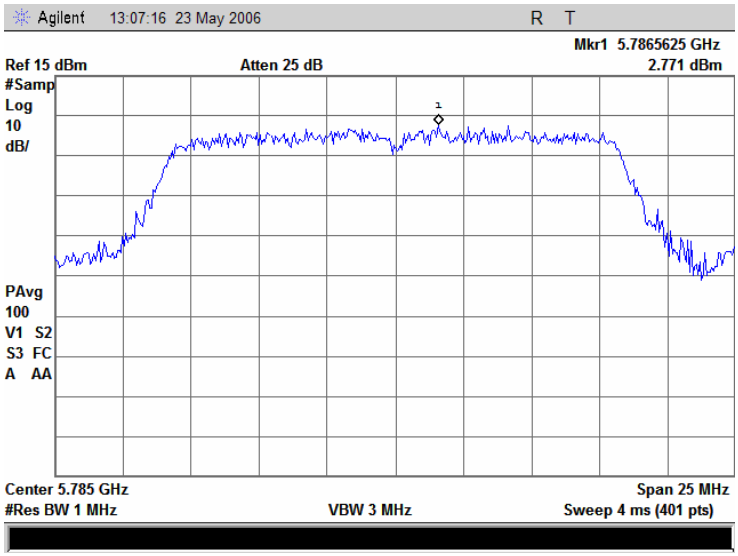


Plot 7.9.4 Peak spectral power density at 5.745 GHz, 6 Mbps

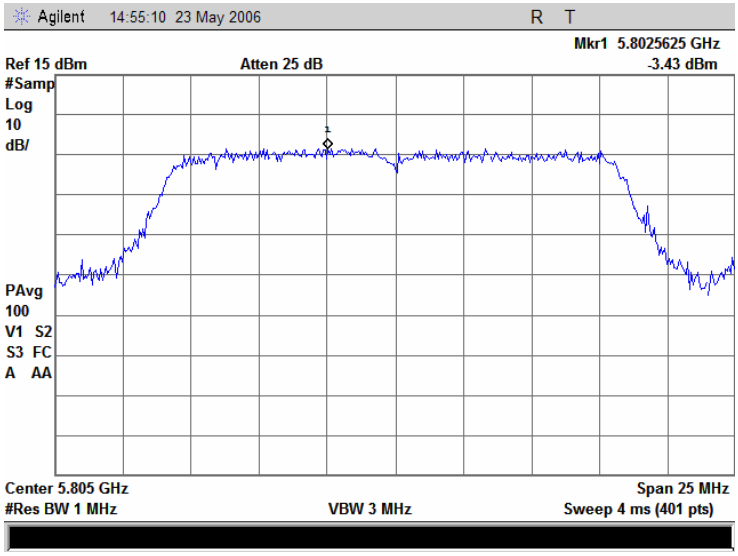


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.9.5 Peak spectral power density at 5.785 GHz, 6 Mbps

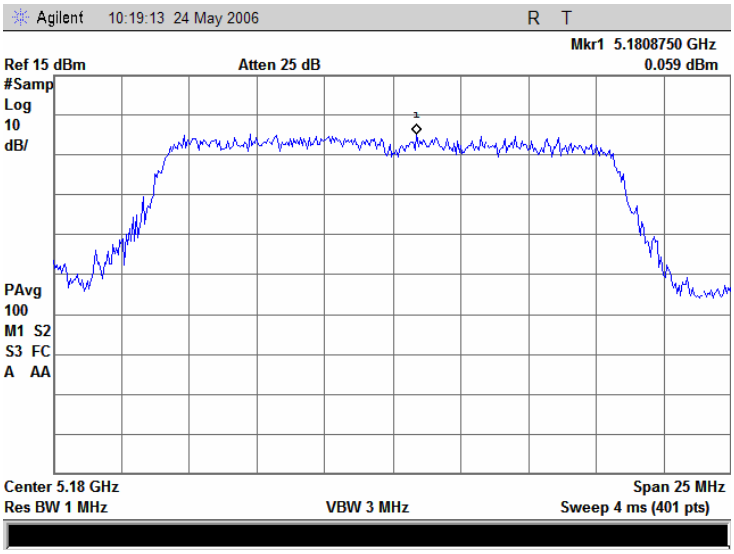


Plot 7.9.6 Peak spectral power density at 5.805 GHz, 6 Mbps

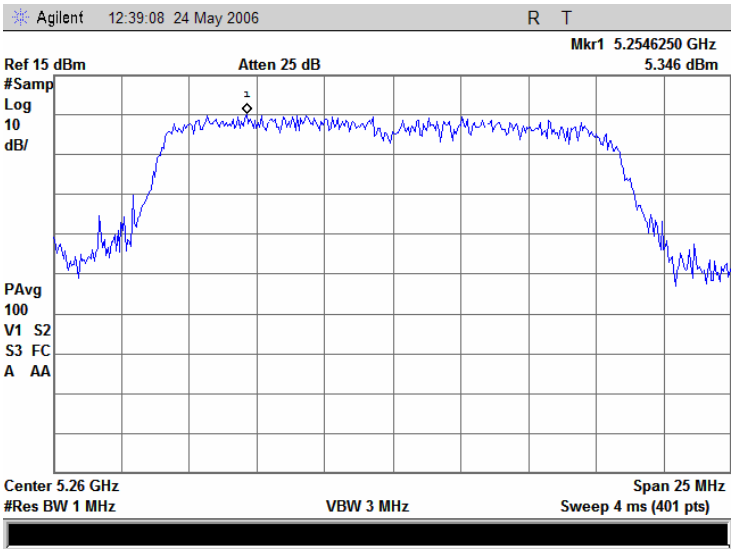


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.9.7 Peak spectral power density at 5.180 GHz, 54 Mbps

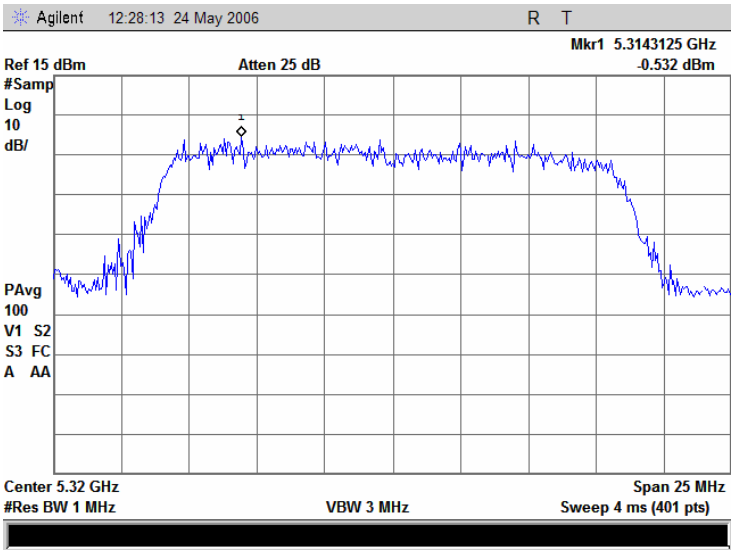


Plot 7.9.8 Peak spectral power density at 5.260 GHz, 54 Mbps

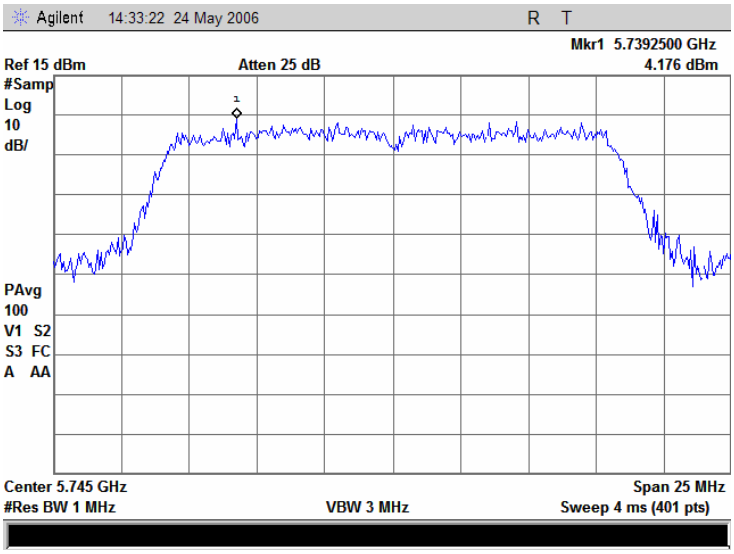


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.9.9 Peak spectral power density at 5.320 GHz, 54 Mbps

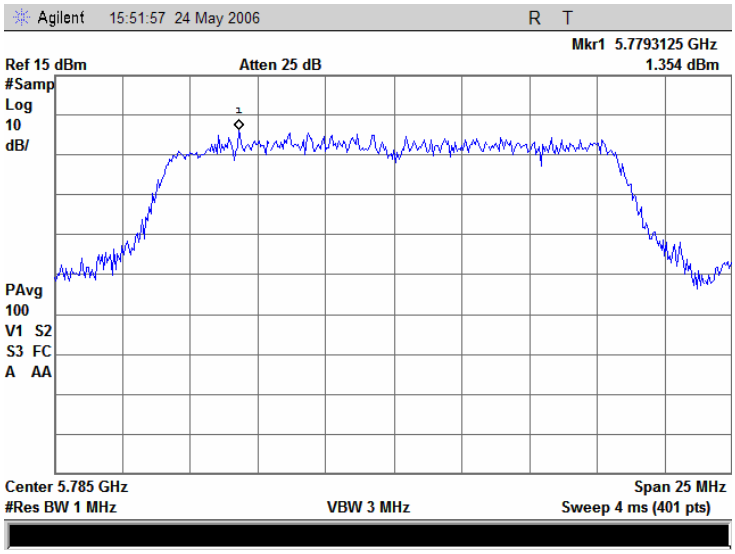


Plot 7.9.10 Peak spectral power density at 5.745 GHz, 54 Mbps

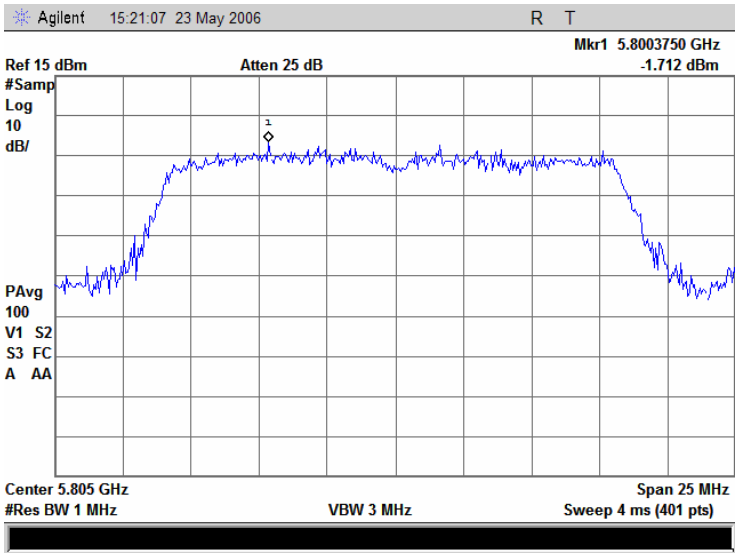


Test specification:	Section 15. 407(a)(1-3), Peak power spectral density		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.9.11 Peak spectral power density at 5.785 GHz, 54 Mbps



Plot 7.9.12 Peak spectral power density at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

7.10 Ratio of the peak excursion of the modulation envelope to the peak transmit power, 802.11 a

7.10.1 General

This test was performed to measure the ratio of the peak excursion of the modulation envelope to the peak transmit power at RF antenna connector. Specification test limits are given in Table 7.10.1.

Table 7.10.1 Peak excursion limits

Assigned frequency, MHz	Maximum peak excursion, dB/MHz
5150 - 5250	13.0
5250 – 5350	
5725 – 5825	

7.10.2 Test procedure

7.10.2.1 The EUT was set up as shown in Figure 7.10.1, energized and its proper operation was checked.

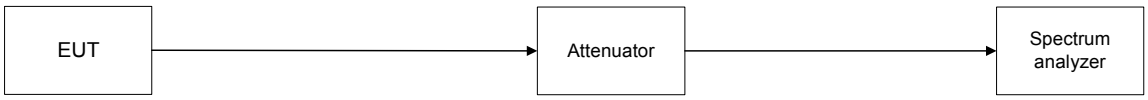
7.10.2.2 The EUT was adjusted to produce maximum available to end user RF output power.

7.10.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the frequency range.

7.10.2.4 The maximum peak excursion of modulation envelope was measured as a difference between 2 traces:
trace 1: RBW = 1 MHz, VBW = 3 MHz
trace 2: RBW = 1 MHz, VBW = 10 kHz, where
RBW – resolution bandwidth,
VBW - video bandwidth.

7.10.2.5 The test results were recorded in Table 7.10.2 and shown in the associated plots.

Figure 7.10.1 Band edge emission test setup



Test specification:	**Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Table 7.10.2 Peak excursion test results

ASSIGNED FREQUENCY RANGE: 5150 – 5250 MHz, 5250 – 5350 MHz, 5725 – 5825 MHz
DETECTOR USED: Peak
MODULATION TECHNIQUE:: Digital
TRANSMITTER OUTPUT POWER SETTINGS: Maximum
RESOLUTION BANDWIDTH: 1 MHz

Carrier frequency, MHz	Measured maximum peak excursion, dB	Limit, dB/MHz	Margin, dB	Verdict
Data rate 6 Mbps				
5180	9.90	13.0	-3.10	Pass
5260	8.64	13.0	-4.36	Pass
5320	9.12	13.0	-3.88	Pass
5745	9.51	13.0	-3.49	Pass
5785	10.30	13.0	-2.70	Pass
5805	8.29	13.0	-4.71	Pass
Data rate 54 Mbps				
5180	9.00	13.0	-4.00	Pass
5260	8.66	13.0	-4.34	Pass
5320	9.83	13.0	-3.17	Pass
5745	8.04	13.0	-4.96	Pass
5785	9.16	13.0	-3.84	Pass
5805	8.81	13.0	-4.19	Pass

*****- Margin = Attenuation below carrier – specification limit.

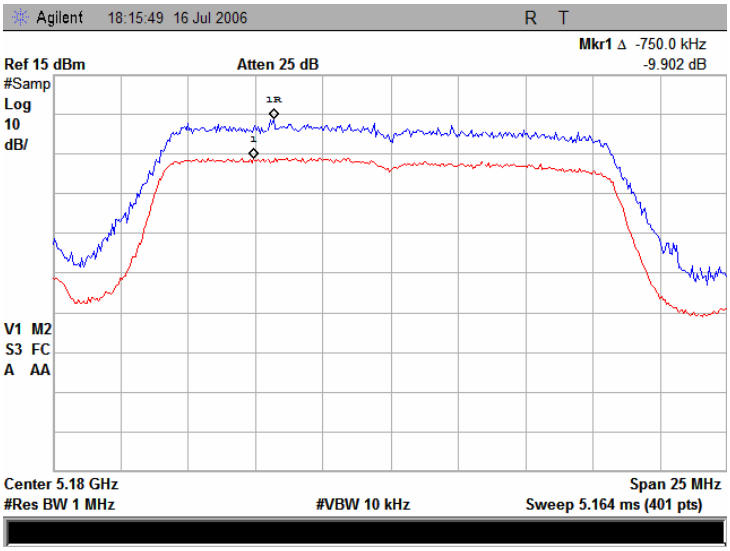
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2869					

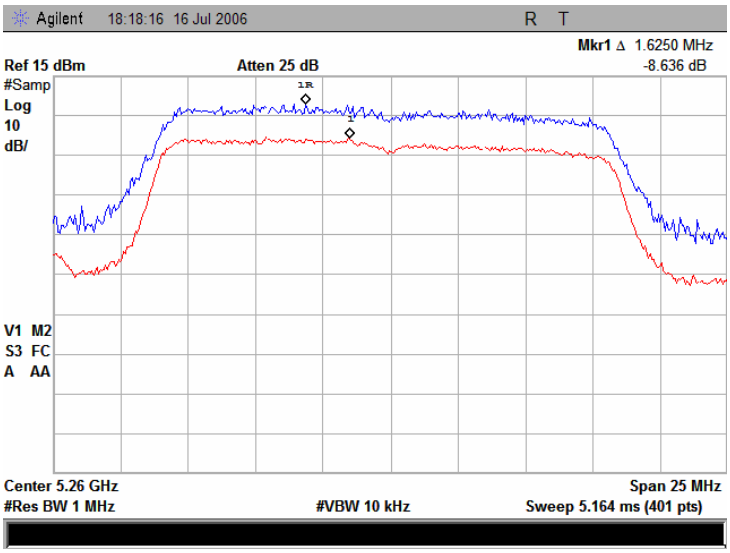
Full description is given in Appendix A.

Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Plot 7.10.1 Peak excursion measurements at 5.180 GHz, 6 Mbps

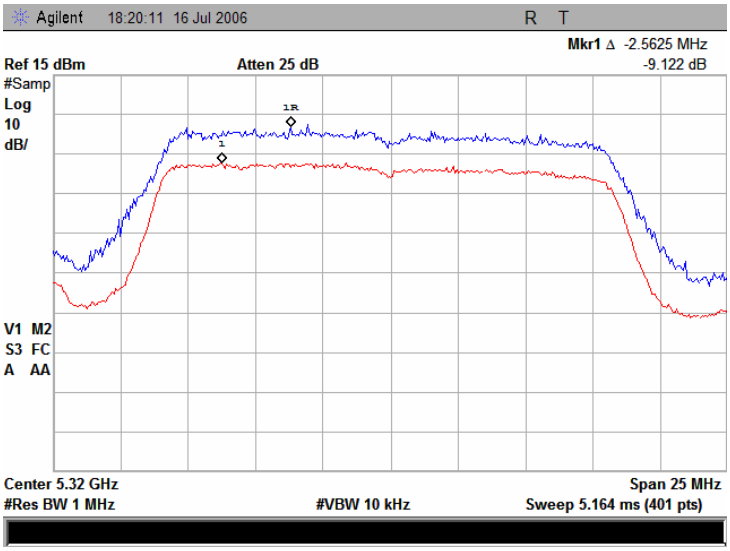


Plot 7.10.2 Peak excursion measurements at 5.260 GHz, 6 Mbps

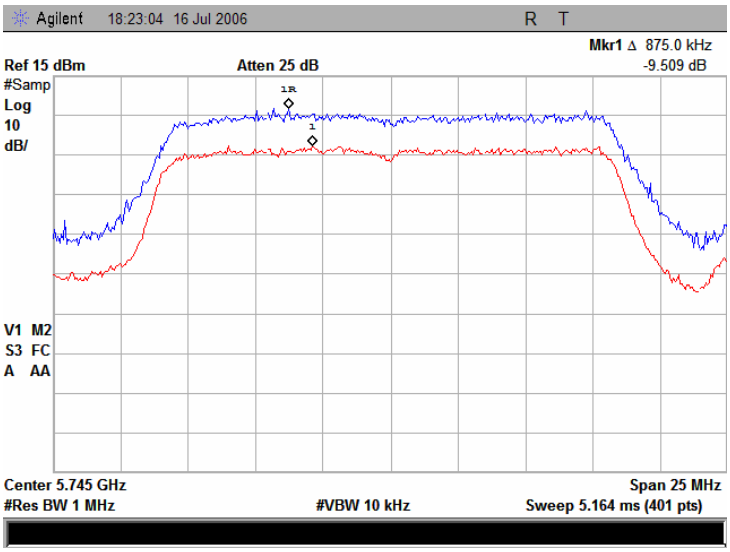


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.10.3 Peak excursion measurements at 5.320 GHz, 6 Mbps

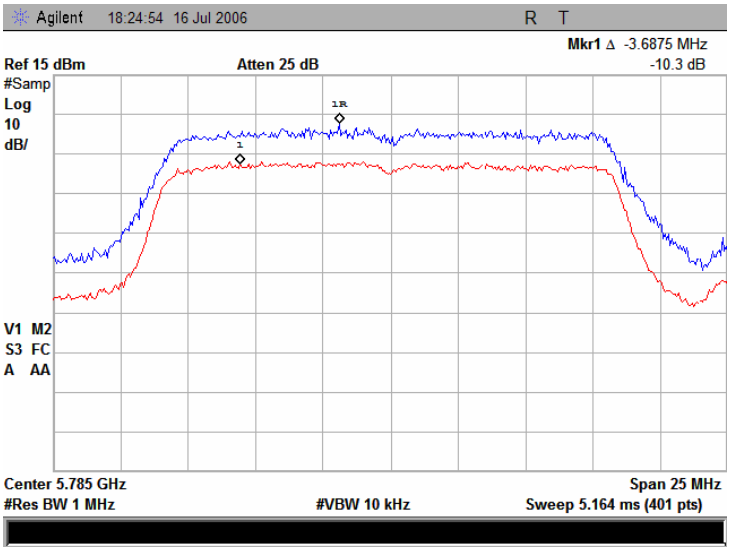


Plot 7.10.4 Peak excursion measurements at 5.745 GHz, 6 Mbps

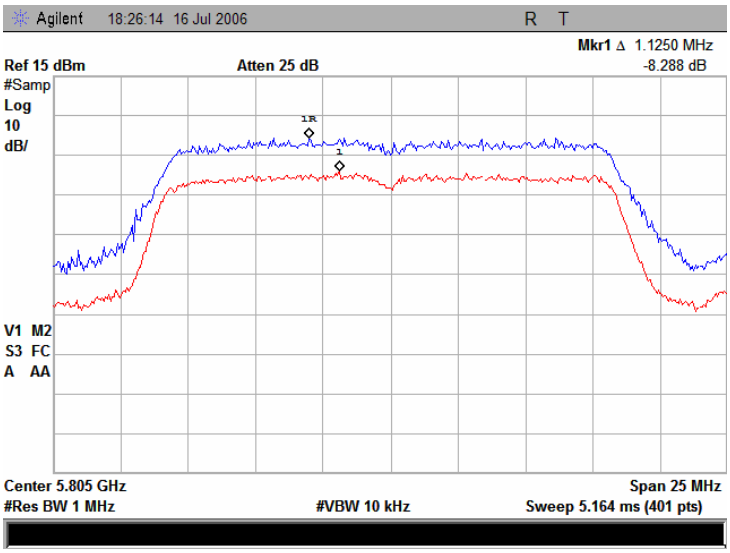


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Plot 7.10.5 Peak excursion measurements at 5.785 GHz, 6 Mbps

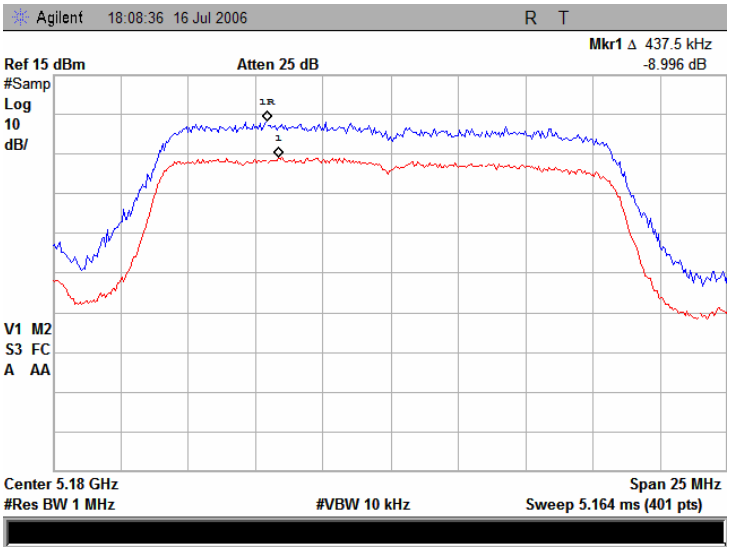


Plot 7.10.6 Peak excursion measurements at 5.805 GHz, 6 Mbps

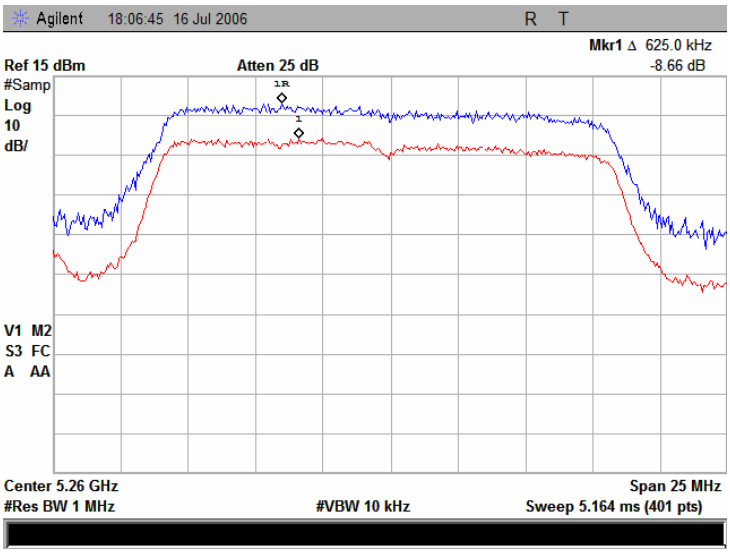


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Plot 7.10.7 Peak excursion measurements at 5.180 GHz, 54 Mbps

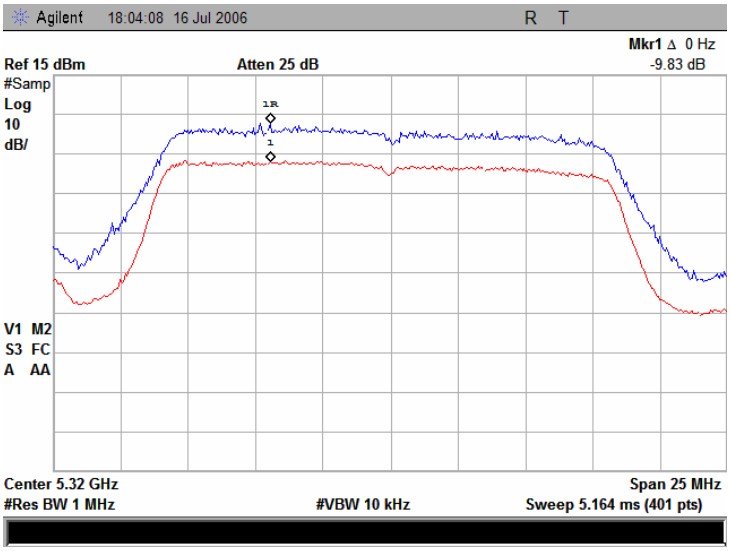


Plot 7.10.8 Peak excursion measurements at 5.260 GHz, 54 Mbps

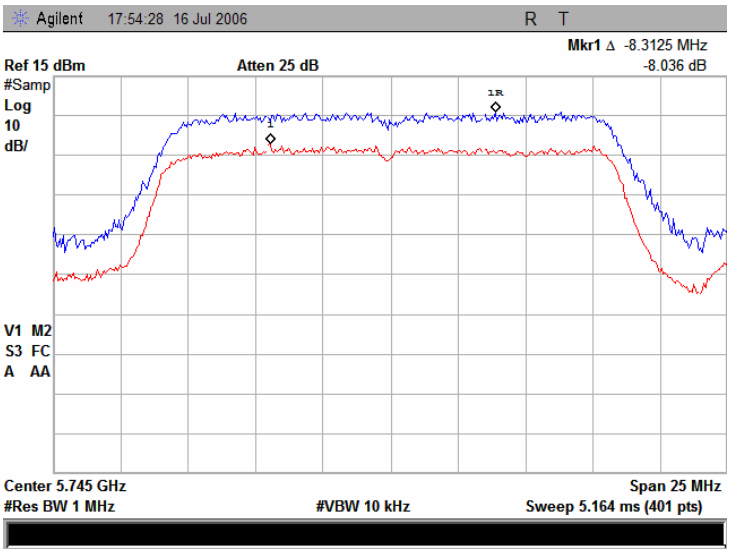


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Plot 7.10.9 Peak excursion measurements at 5.320 GHz, 54 Mbps

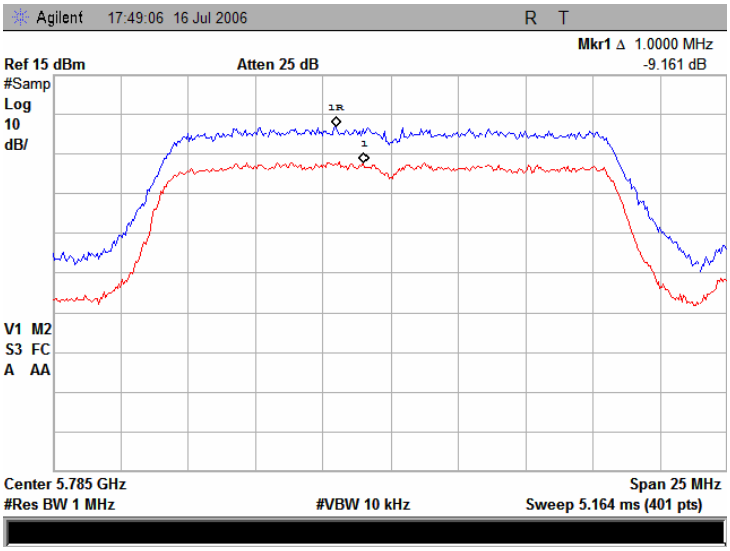


Plot 7.10.10 Peak excursion measurements at 5.745 GHz, 54 Mbps

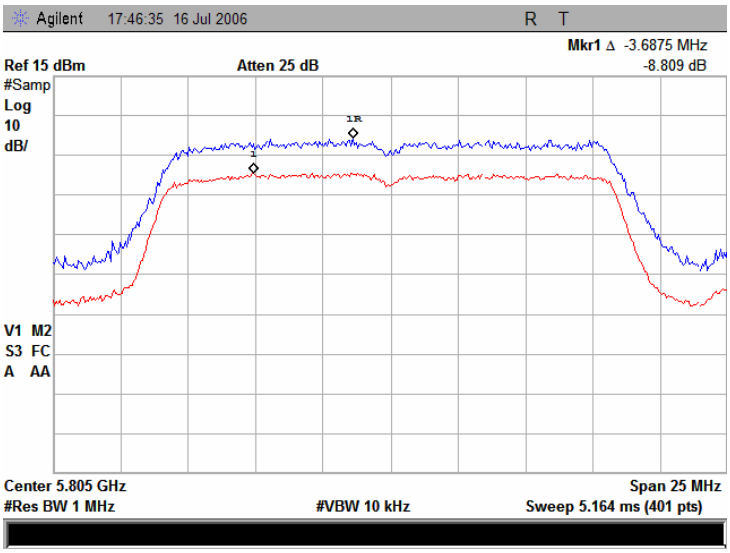


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.10.11 Peak excursion measurements at 5.785 GHz, 54 Mbps



Plot 7.10.12 Peak excursion measurements at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a and 802.11 b/g			

7.11 Ratio of the peak excursion of the modulation envelope to the peak transmit power, 802.11 a and 802.11 b/g

7.11.1 General

This test was performed to measure the ratio of the peak excursion of the modulation envelope to the peak transmit power at RF antenna connector. Specification test limits are given in Table 7.11.1.

Table 7.11.1 Peak excursion limits

Assigned frequency, MHz	Maximum peak excursion, dB/MHz
5150 - 5250	13.0
5250 – 5350	
5725 – 5825	

7.11.2 Test procedure

7.11.2.1 The EUT was set up as shown in Figure 7.11.1, energized and its proper operation was checked.

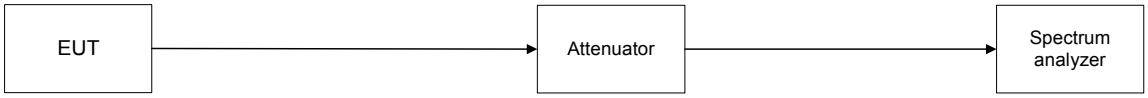
7.11.2.2 The EUT was adjusted to produce maximum available to end user RF output power.

7.11.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the frequency range.

7.11.2.4 The maximum peak excursion of modulation envelope was measured as a difference between 2 traces:
trace 1: RBW = 1 MHz, VBW = 3 MHz
trace 2: for 6 Mbps RBW = 1 MHz, VBW = 1 kHz
for 54 Mbps RBW = 1 MHz, VBW = 10 kHz, where
RBW – resolution bandwidth,
VBW - video bandwidth.

7.11.2.5 The test results were recorded in Table 7.11.1 and shown in the associated plots.

Figure 7.11.1 Band edge emission test setup



Test specification:	**Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Table 7.11.2 Peak excursion test results

ASSIGNED FREQUENCY RANGE: 5150 – 5250 MHz, 5250 – 5350 MHz, 5725 – 5825 MHz
DETECTOR USED: Peak
MODULATION TECHNIQUE:: Digital
TRANSMITTER OUTPUT POWER SETTINGS: Maximum
RESOLUTION BANDWIDTH: 1 MHz

Carrier frequency, MHz	Measured maximum peak excursion, dB	Limit, dB/MHz	Margin, dB	Verdict
Data rate 6 Mbps				
5180	10.26	13.0	-2.74	Pass
5260	10.31	13.0	-2.69	Pass
5320	9.91	13.0	-3.09	Pass
5745	9.23	13.0	-3.77	Pass
5785	9.46	13.0	-3.54	Pass
5805	10.13	13.0	-2.87	Pass
Data rate 54 Mbps				
5180	8.24	13.0	-4.76	Pass
5260	9.28	13.0	-3.72	Pass
5320	8.70	13.0	-4.30	Pass
5745	8.47	13.0	-4.53	Pass
5785	10.61	13.0	-2.39	Pass
5805	7.84	13.0	-5.17	Pass

*****- Margin = Attenuation below carrier – specification limit.

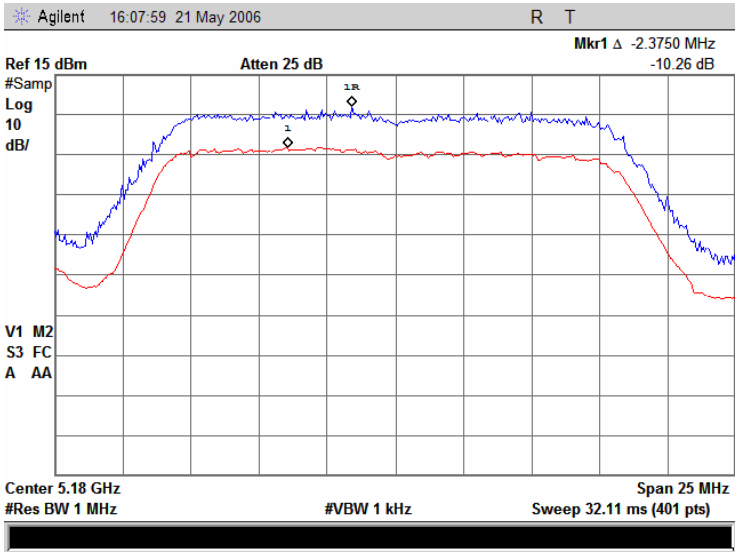
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2867					

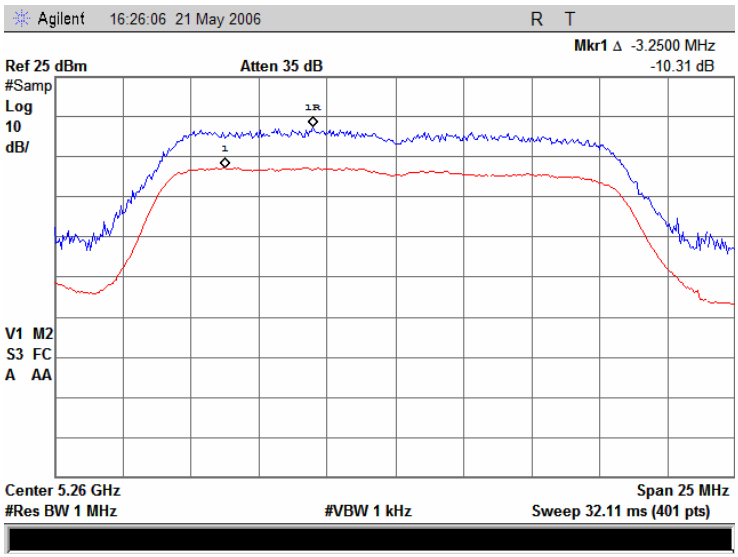
Full description is given in Appendix A.

Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.11.1 Peak excursion measurements at 5.180 GHz, 6 Mbps

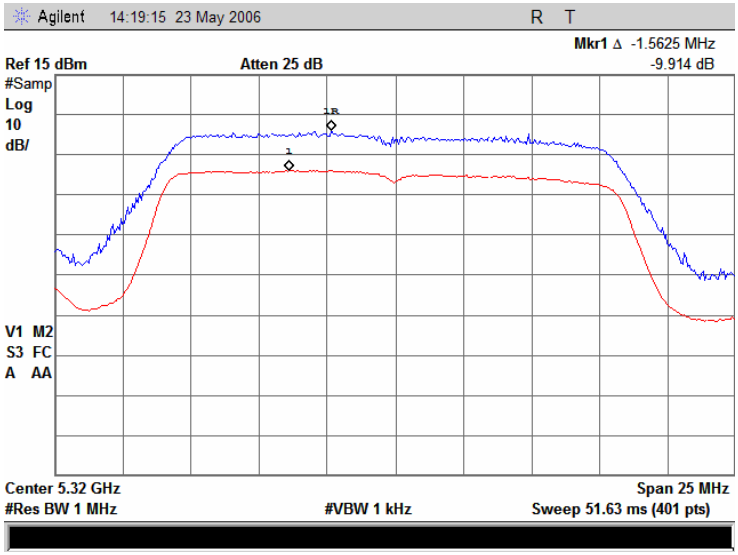


Plot 7.11.2 Peak excursion measurements at 5.260 GHz, 6 Mbps

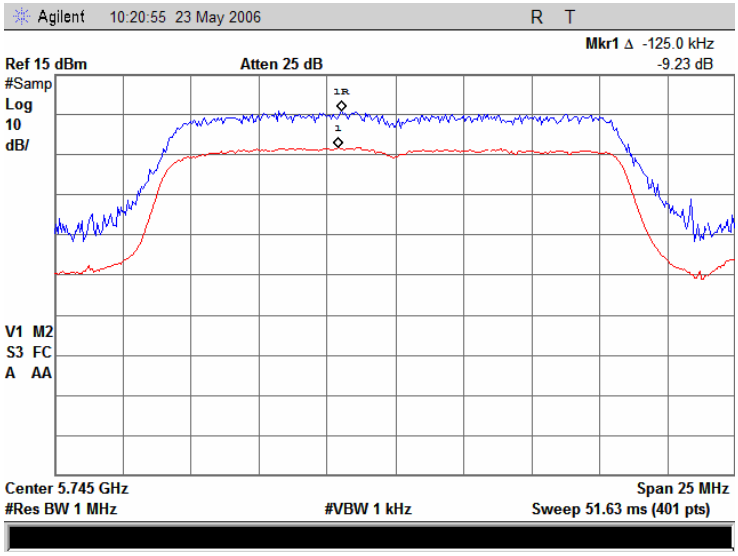


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.11.3 Peak excursion measurements at 5.320 GHz, 6 Mbps

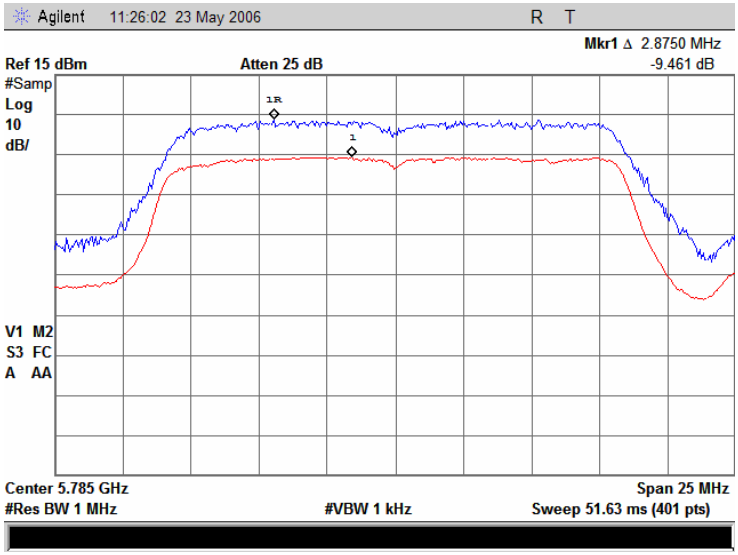


Plot 7.11.4 Peak excursion measurements at 5.745 GHz, 6 Mbps

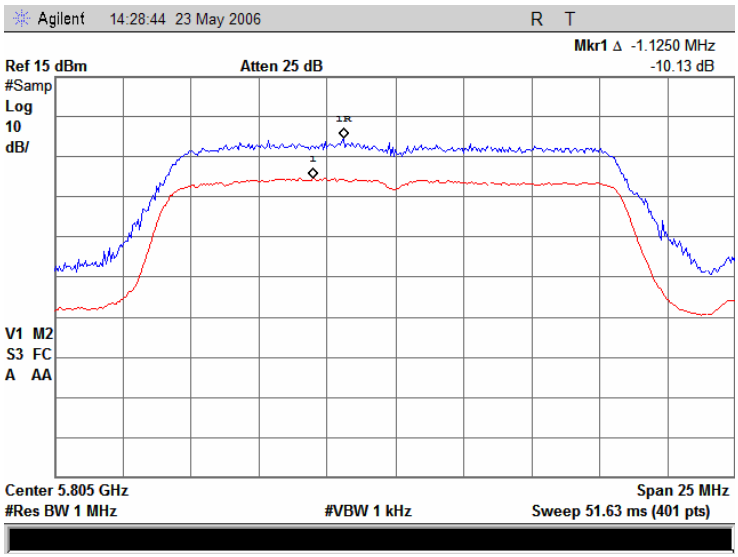


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.11.5 Peak excursion measurements at 5.785 GHz, 6 Mbps

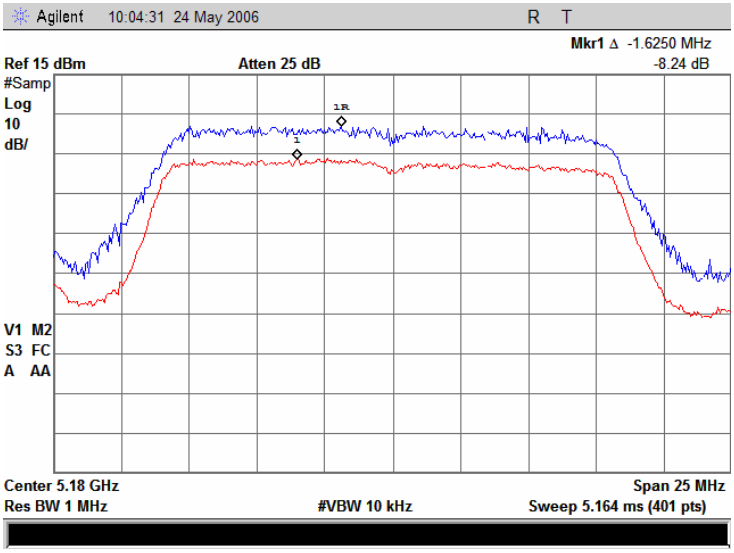


Plot 7.11.6 Peak excursion measurements at 5.805 GHz, 6 Mbps

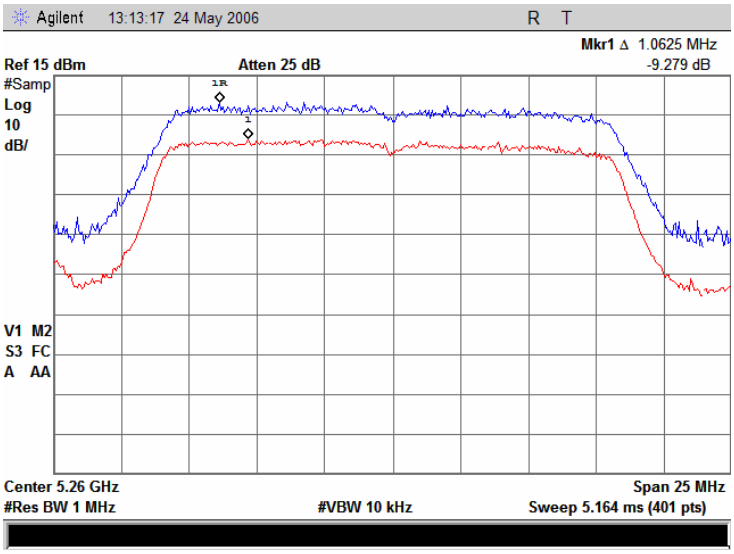


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.11.7 Peak excursion measurements at 5.180 GHz, 54 Mbps

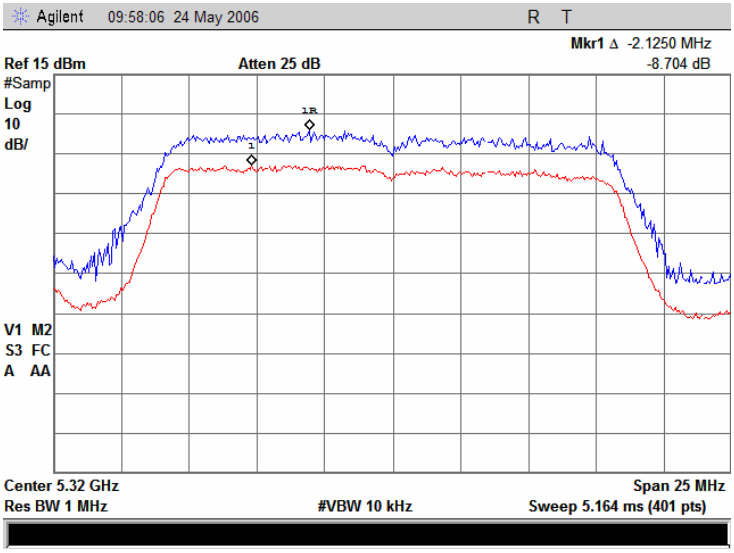


Plot 7.11.8 Peak excursion measurements at 5.260 GHz, 54 Mbps

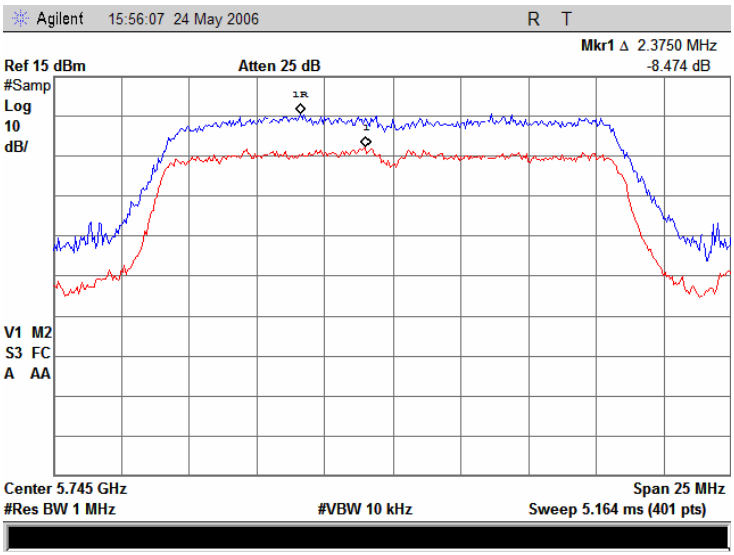


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.11.9 Peak excursion measurements at 5.320 GHz, 54 Mbps

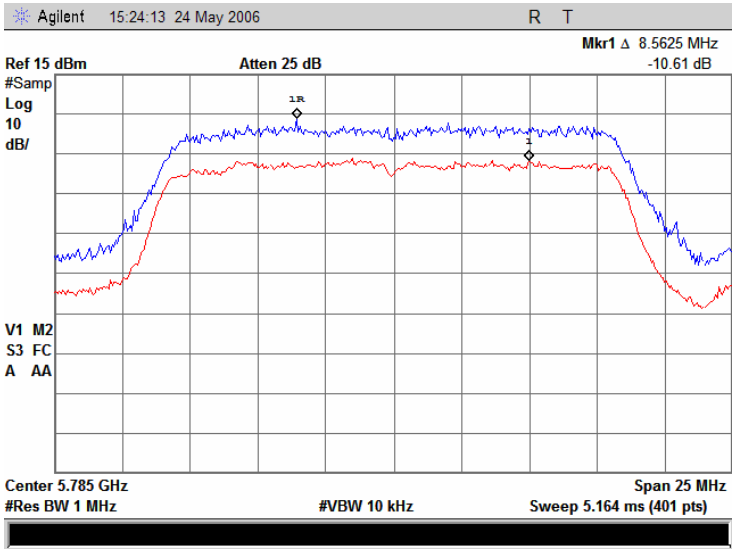


Plot 7.11.10 Peak excursion measurements at 5.745 GHz, 54 Mbps

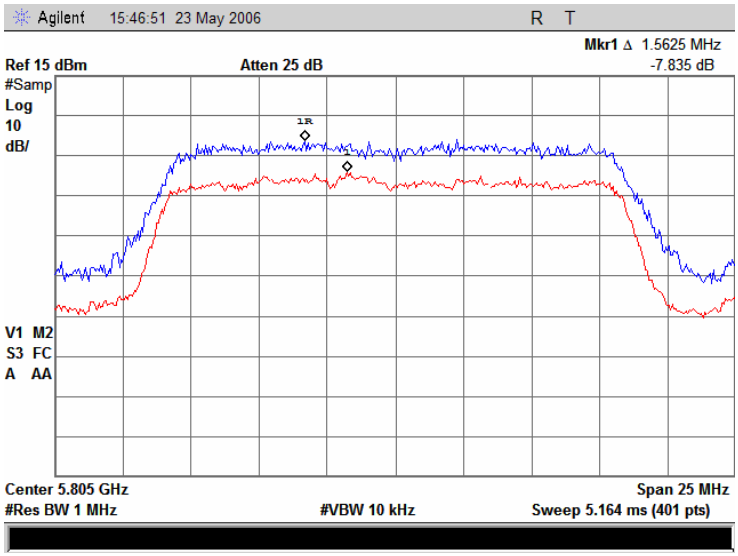


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a and 802.11 b/g			

Plot 7.11.11 Peak excursion measurements at 5.785 GHz, 54 Mbps



Plot 7.11.12 Peak excursion measurements at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

7.12 Ratio of the peak excursion of the modulation envelope to the peak transmit power, 802.11 a, 802.11 b/g and CELL/PCS

7.12.1 General

This test was performed to measure the ratio of the peak excursion of the modulation envelope to the peak transmit power at RF antenna connector. Specification test limits are given in Table 7.12.1.

Table 7.12.1 Peak excursion limits

Assigned frequency, MHz	Maximum peak excursion, dB/MHz
5150 - 5250	13.0
5250 – 5350	
5725 – 5825	

7.12.2 Test procedure

7.12.2.1 The EUT was set up as shown in Figure 7.10.1, energized and its proper operation was checked.

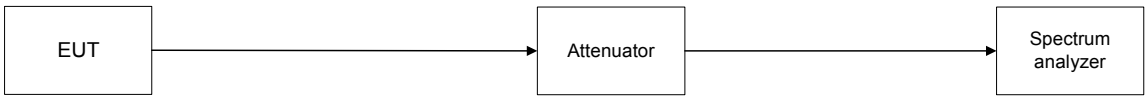
7.12.2.2 The EUT was adjusted to produce maximum available to end user RF output power.

7.12.2.3 The measurements were performed in continuous transmission mode of operation for carrier (channel) frequency at low and high edges and at the middle of the frequency range.

7.12.2.4 The maximum peak excursion of modulation envelope was measured as a difference between 2 traces:
trace 1: RBW = 1 MHz, VBW = 3 MHz
trace 2: for 6 Mbps RBW = 1 MHz, VBW = 1 kHz
for 54 Mbps RBW = 1 MHz, VBW = 10 kHz, where
RBW – resolution bandwidth,
VBW - video bandwidth.

7.12.2.5 The test results were recorded in Table 7.12. 1 and shown in the associated plots.

Figure 7.12.1 Band edge emission test setup



Test specification:	**Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power**		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/05/2006		
Temperature: 23 ºC	**Air Pressure:** 1007 hPa	**Relative Humidity:** 48%	**Power Supply:** 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Table 7.12.2 Peak excursion test results

ASSIGNED FREQUENCY RANGE: 5150 – 5250 MHz, 5250 – 5350 MHz, 5725 – 5825 MHz
DETECTOR USED: Peak
MODULATION TECHNIQUE:: Digital
TRANSMITTER OUTPUT POWER SETTINGS: Maximum
RESOLUTION BANDWIDTH: 1 MHz

Carrier frequency, MHz	Measured maximum peak excursion, dB	Limit, dB/MHz	Margin, dB	Verdict
Data rate 6 Mbps				
5180	9.85	13.0	-3.15	Pass
5260	9.59	13.0	-3.41	Pass
5320	9.53	13.0	-3.48	Pass
5745	9.46	13.0	-3.55	Pass
5785	10.50	13.0	-2.50	Pass
5805	9.17	13.0	-3.83	Pass
Data rate 54 Mbps				
5180	8.30	13.0	-4.70	Pass
5260	8.86	13.0	-4.14	Pass
5320	9.11	13.0	-3.89	Pass
5745	8.49	13.0	-4.51	Pass
5785	8.39	13.0	-4.61	Pass
5805	7.69	13.0	-5.31	Pass

*****- Margin = Attenuation below carrier – specification limit.

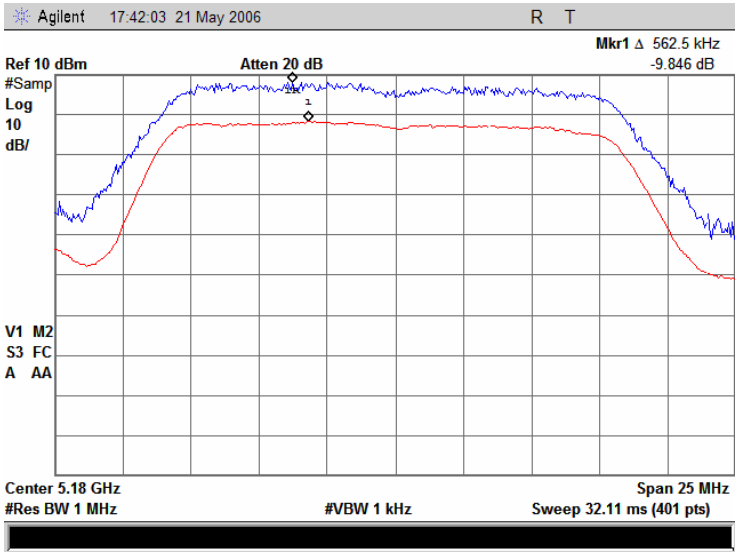
Reference numbers of test equipment used

HL 1650	HL 2780	HL 2867					

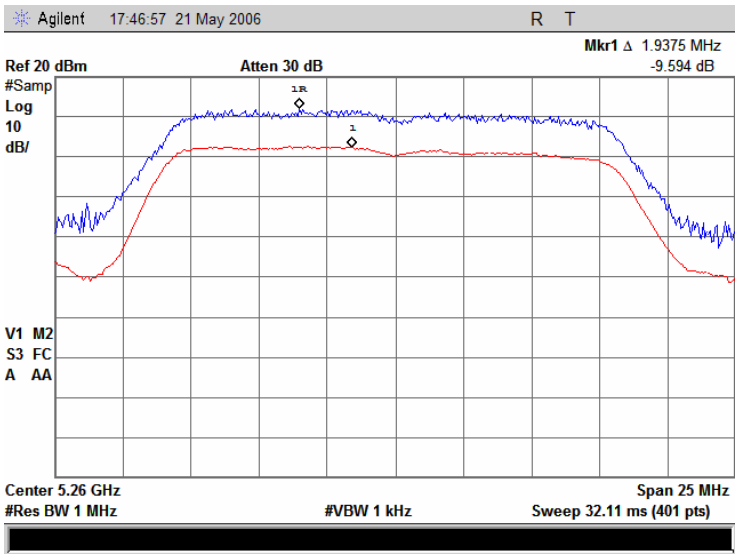
Full description is given in Appendix A.

Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.12.1 Peak excursion measurements at 5.180 GHz, 6 Mbps

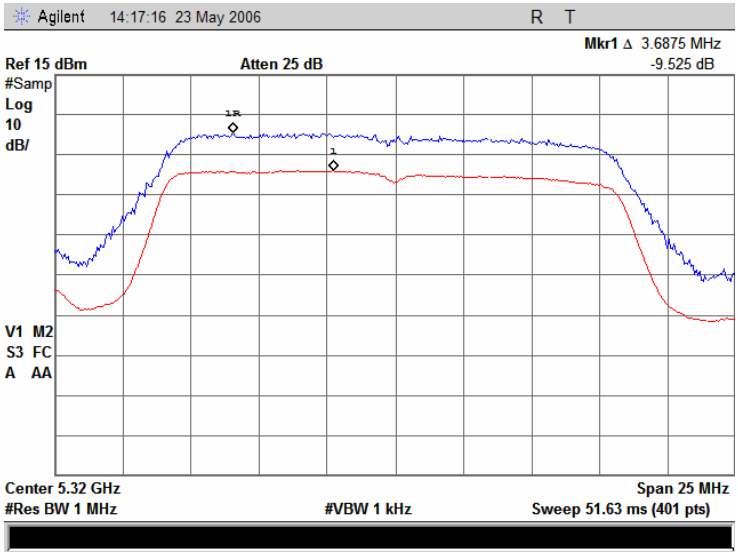


Plot 7.12.2 Peak excursion measurements at 5.260 GHz, 6 Mbps

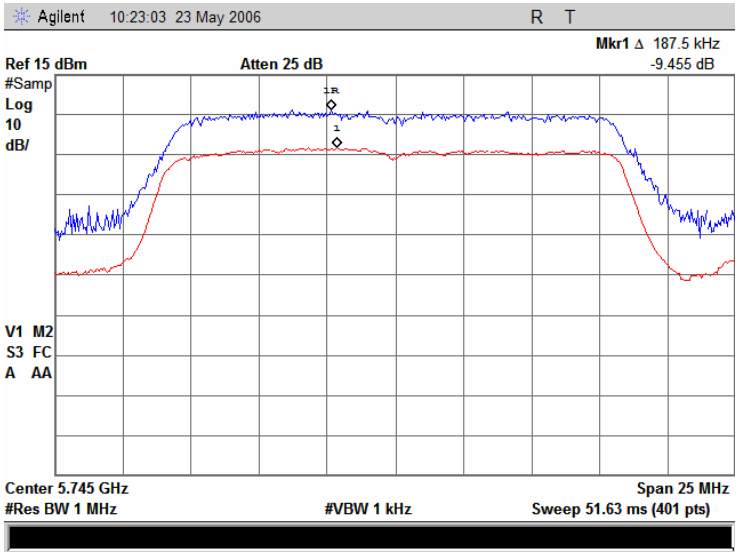


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.12.3 Peak excursion measurements at 5.320 GHz, 6 Mbps

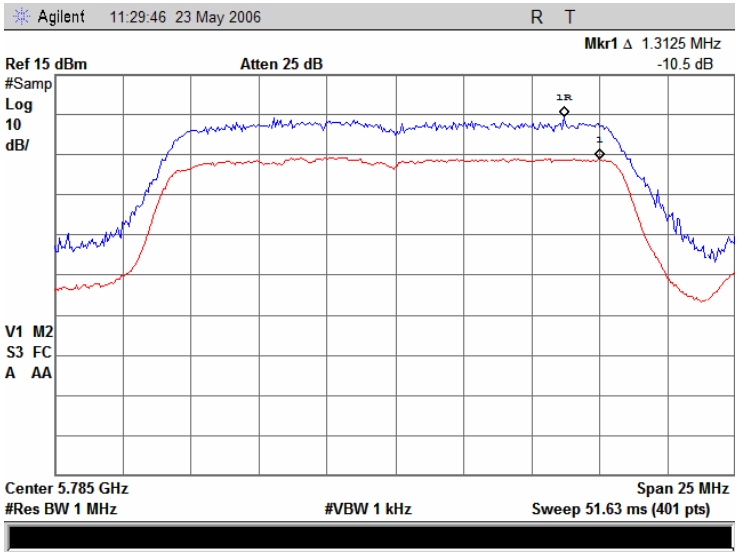


Plot 7.12.4 Peak excursion measurements at 5.745 GHz, 6 Mbps

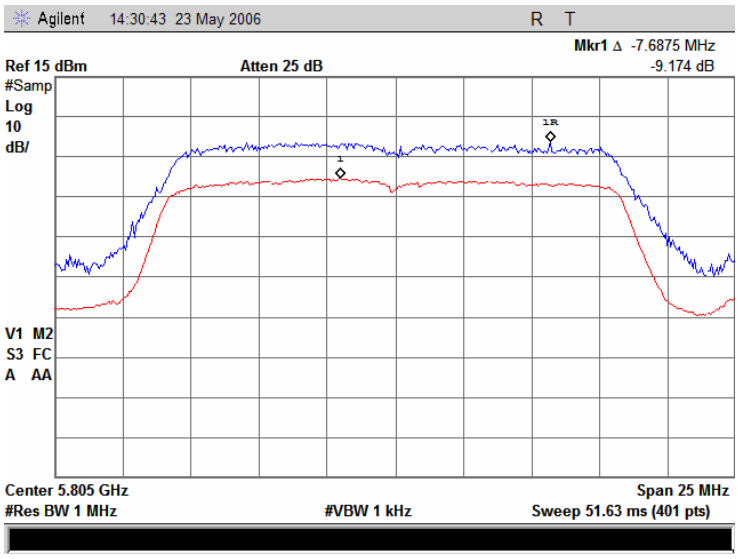


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.12.5 Peak excursion measurements at 5.785 GHz, 6 Mbps

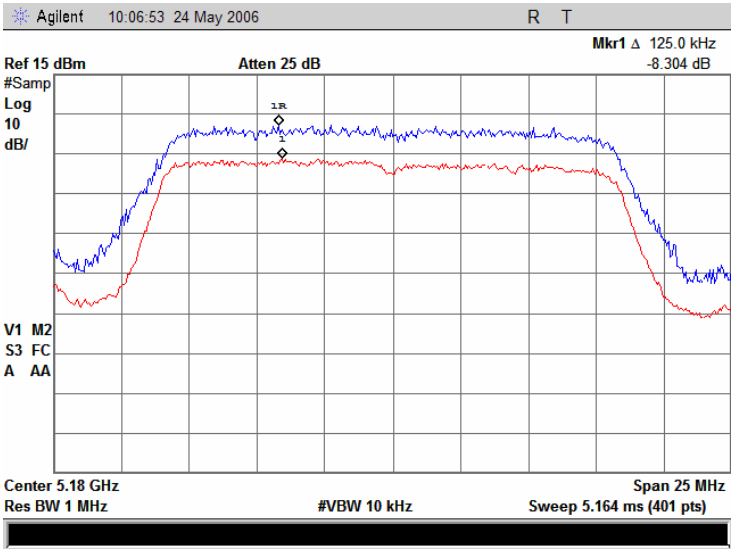


Plot 7.12.6 Peak excursion measurements at 5.805 GHz, 6 Mbps

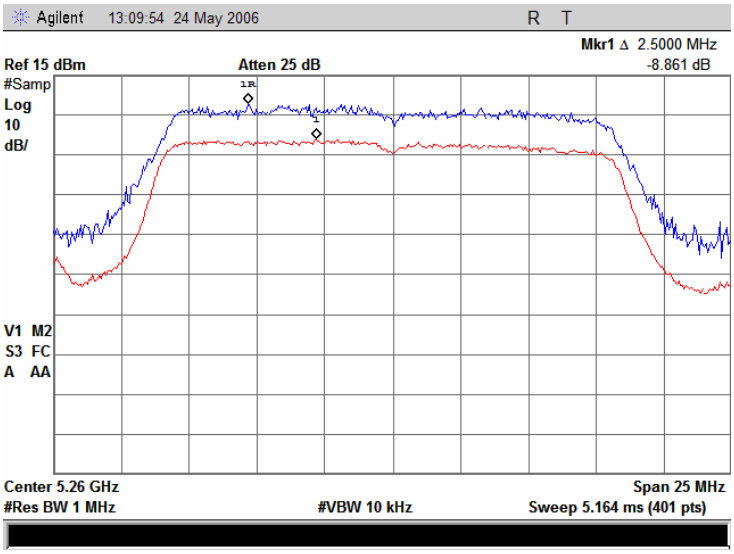


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.12.7 Peak excursion measurements at 5.180 GHz, 54 Mbps

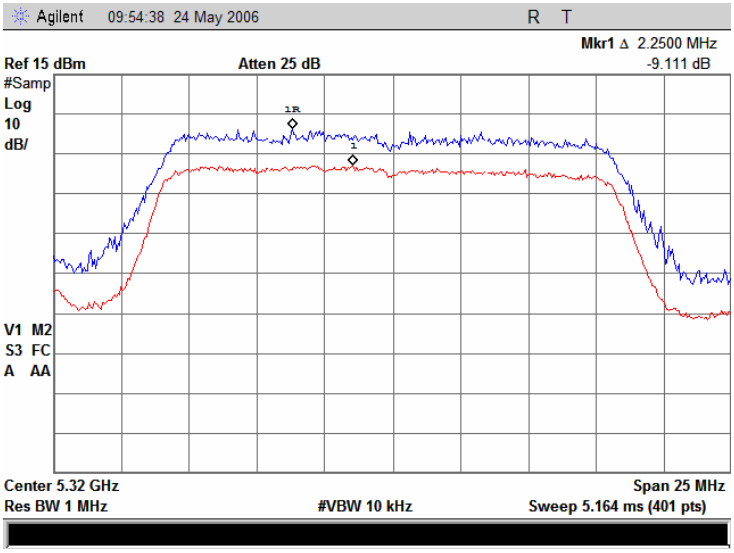


Plot 7.12.8 Peak excursion measurements at 5.260 GHz, 54 Mbps

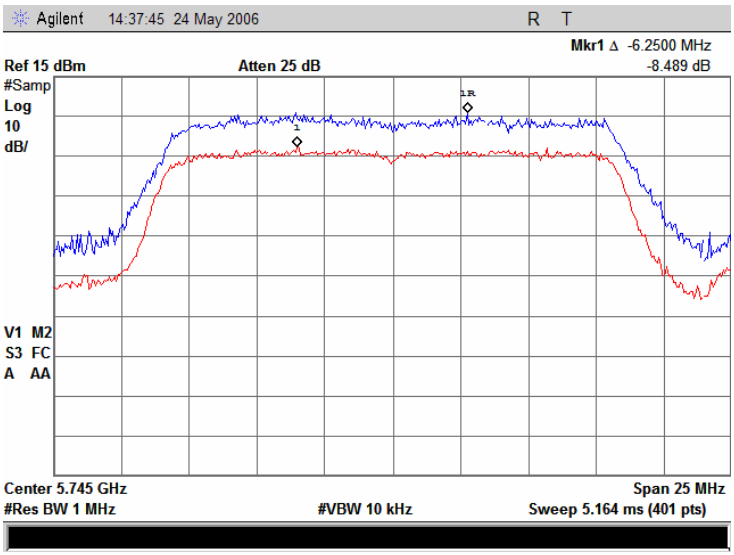


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.12.9 Peak excursion measurements at 5.320 GHz, 54 Mbps

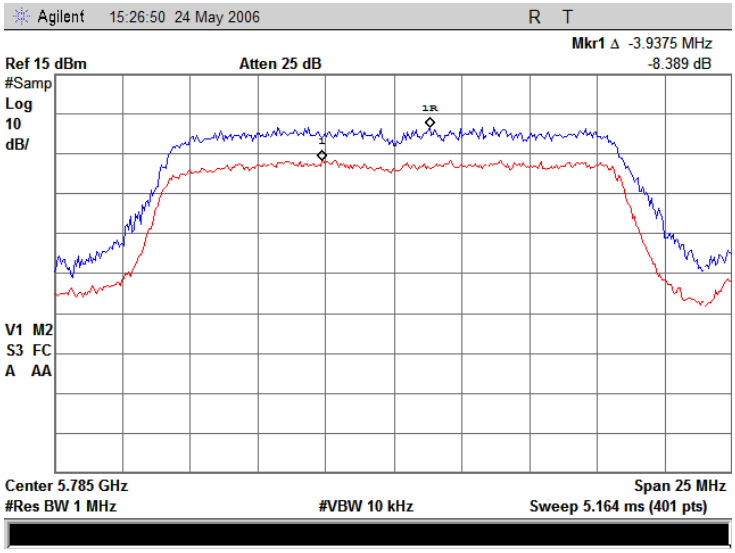


Plot 7.12.10 Peak excursion measurements at 5.745 GHz, 54 Mbps

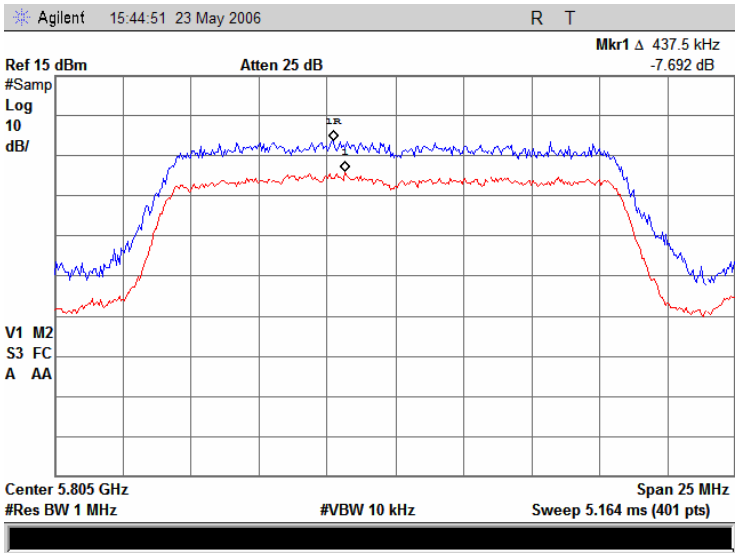


Test specification:	Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power		
Test procedure:	FCC Public Notice DA 02-2138, Appendix A		
Test mode:	Compliance	Verdict:	PASS
Date:	07/05/2006		
Temperature: 23 ºC	Air Pressure: 1007 hPa	Relative Humidity: 48%	Power Supply: 48 VDC
Remarks: 802.11 a, 802.11 b/g and CELL/PCS			

Plot 7.12.11 Peak excursion measurements at 5.785 GHz, 54 Mbps



Plot 7.12.12 Peak excursion measurements at 5.805 GHz, 54 Mbps



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

7.13 Field strength of spurious emissions, 802.11 a only

7.13.1 General

This test was performed to measure field strength of spurious emissions from the EUT. Specification test limits are given in Table 7.13.1.

Table 7.13.1 Radiated spurious emissions limits below 1 GHz and within restricted bands above 1 GHz

Frequency, MHz	Field strength at 3 m, dB(µV/m)***		
	Peak	Quasi Peak	Average
0.009 – 0.490*	NA	128.5 – 93.8**	NA
0.490 – 1.705*		73.8 – 63.0**	
1.705 – 30.0*		69.5**	
30 – 88		40.0	
88 – 216		43.5	
216 – 960		46.0	
960 - 1000		54.0	
Above 1000	74.0	NA	54.0

*- The limit for 3 m test distance was calculated using the inverse square distance extrapolation factor as follows:

LimS2 = LimS1 + 40 log (S1/S2),

where S1 and S2 – standard defined and test distance respectively in meters.

**- The limit decreases linearly with the logarithm of frequency.

*** - The field strength limits applied from the lowest radio frequency generated in the device, without going below 9 kHz up to the tenth harmonic of the highest fundamental frequency.

Table 7.13.2 EIRP of undesirable emissions limits outside restricted bands (above 1 GHz)

Frequency band, GHz	Out of band EIRP, dBm/MHz	Field strength at 3 m, dB(µV/m)
5.15 – 5.25	-27	68.23
5.25 – 5.35		
5.47 – 5.725		
5.725 – 5.825	-27 (below 5.715 and above 5.835 GHz)	68.23
	-17 (in 5.715 – 5.725 GHz and 5.825 – 5.835 GHz)	78.23

7.13.2 Test procedure for spurious emission field strength measurements in 9 kHz to 30 MHz band

7.13.2.1 The EUT was set up as shown in Figure 7.13.1, energized and the performance check was conducted.

7.13.2.2 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360^0 and the measuring antenna was rotated around its vertical axis.

7.13.2.3 The worst test results (the lowest margins) were recorded and shown in the associated plots.

7.13.3 Test procedure for spurious emission field strength measurements above 30 MHz

7.13.3.1 The EUT was set up as shown in Figure 7.13.2, energized and the performance check was conducted.

7.13.3.2 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360^0, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal.

7.13.3.3 The worst test results (the lowest margins) were recorded and shown in the associated plots.

Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Figure 7.13.1 Setup for spurious emission field strength measurements below 30 MHz

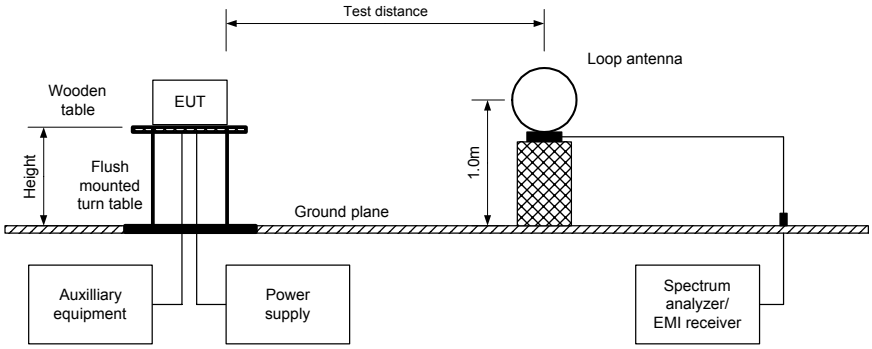
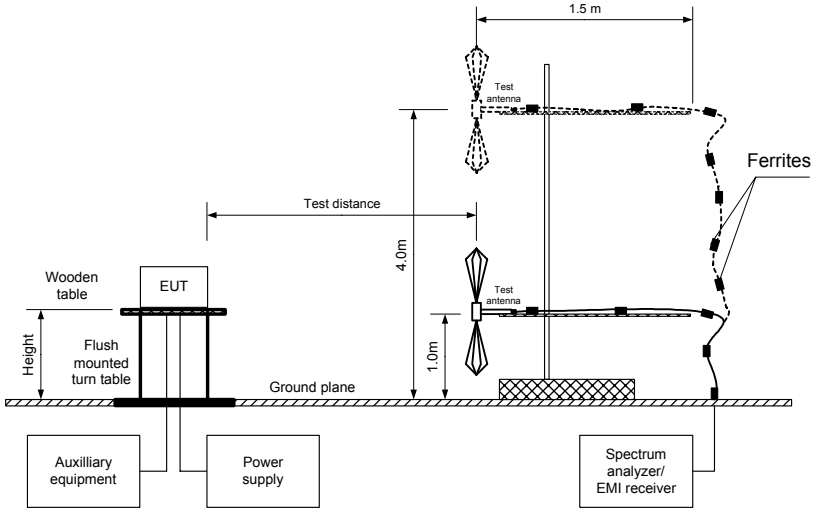


Figure 7.13.2 Setup for spurious emission field strength measurements above 30 MHz



Test specification:	**Section 15.407(b), Unwanted radiated emissions**		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/04/2006		
Temperature: 23 ºC	**Air Pressure:** 1010 hPa	**Relative Humidity:** 45%	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Table 7.13.3 Field strength of spurious emissions within restricted bands

ASSIGNED FREQUENCY:	5.12-5.35GHz, 5.725-5.825GHz
INVESTIGATED FREQUENCY RANGE:	1000 - 40000 MHz
TEST DISTANCE:	3 m
MODULATION:	OFDM
MODULATING SIGNAL:	CCK and BPSK
MODULATING SIGNAL:	PRBS
BIT RATE:	1 Mbps
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
DETECTOR USED:	Peak
RESOLUTION BANDWIDTH:	1000 kHz
TEST ANTENNA TYPE:	Double ridged guide

Frequency, MHz	Antenna		Azimuth, degrees*	Peak field strength(VBW=3 MHz)			Average field strength (VBW=1KHz)			Verdict
	Polarization	Height, m		Measured, dB(μV/m)	Limit, dB(μV/m)	Margin, dB**	Measured, dB(μV/m)	Limit, dB(μV/m)	Margin, dB***	
5.32 GHz carrier frequency										
10639.25	Vertical	1.0	99	58.67	74.00	-15.33	42.83	54.00	-11.17	**Pass**
5.745 GHz carrier frequency										
11489.42	Vertical	1.0	167	64.17	74.00	-9.83	49.00	54.00	-5.00	**Pass**
5.785 GHz carrier frequency										
11570.67	Vertical	1.1	200	63.33	74.00	-10.67	47.17	54.00	-6.83	**Pass**
5.805 GHz carrier frequency										
11608.92	Vertical	1.0	100	62.50	74.00	-11.50	48.50	54.00	-5.50	**Pass**

*****- Margin = Measured emission – specification limit.
******- EUT front panel refers to 0 degrees position of turntable.

Table 7.13.4 Restricted bands

MHz	MHz	MHz	MHz	MHz	GHz
0.09 - 0.11	8.37625 - 8.38675	73 - 74.6	399.9 - 410	2690 - 2900	10.6 - 12.7
0.495 - 0.505	8.41425 - 8.41475	74.8 - 75.2	608 - 614	3260 - 3267	13.25 - 13.4
2.1735 - 2.1905	12.29 - 12.293	108 - 121.94	960 - 1240	3332 - 3339	14.47 - 14.5
4.125 - 4.128	12.51975 - 12.52025	123 - 138	1300 - 1427	3345.8 - 3358	15.35 - 16.2
4.17725 - 4.17775	12.57675 - 12.57725	149.9 - 150.05	1435 - 1626.5	3600 - 4400	17.7 - 21.4
4.20725 - 4.20775	13.36 - 13.41	156.52475 - 156.52525	1645.5 - 1646.5	4500 - 5150	22.01 - 23.12
6.215 - 6.218	16.42 - 16.423	156.7 - 156.9	1660 - 1710	5350 – 5460	23.6 - 24
6.26775 - 6.26825	16.69475 - 16.69525	162.0125 - 167.17	1718.8 - 1722.2	7250 - 7750	31.2 - 31.8
6.31175 - 6.31225	16.80425 - 16.80475	167.72 - 173.2	2200 - 2300	8025 – 8500	36.43 - 36.5
8.291 - 8.294	25.5 - 25.67	240 - 285	2310 - 2390	9000 - 9200	Above 38.6
8.362 - 8.366	37.5 - 38.25	322 - 335.4	2483.5 - 2500	9300 - 9500	

Test specification:	**Section 15.407(b), Unwanted radiated emissions**		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	**Verdict:**	PASS
Date:	07/04/2006		
Temperature: 23 ºC	**Air Pressure:** 1010 hPa	**Relative Humidity:** 45%	**Power Supply:** 48 VDC
Remarks: 802.11 a only			

Table 7.13.5 Field strength of emissions outside restricted bands

ASSIGNED FREQUENCY:	5.12-5.35GHz, 5.725-5.825GHz
INVESTIGATED FREQUENCY RANGE:	0.009 - 40GHz
TEST DISTANCE:	3 m
MODULATION:	OFDM
MODULATING SIGNAL:	CCK and BPSK
BIT RATE:	1 Mbps
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
DETECTOR: USED:	Peak
RESOLUTION BANDWIDTH:	1000 kHz
VIDEO BANDWIDTH:	1 kHz
TEST ANTENNA TYPE:	Active loop (9 kHz – 30 MHz) Biconilog (30 MHz – 1000 MHz) Double ridged guide (above 1000 MHz)

Frequency, MHz	Antenna polarization	Antenna height, m	Azimuth, degrees*	Field strength of spurious, dB(µV/m)	Limit, dBµV/m	Margin, dB**	Verdict
5.18 GHz carrier frequency							
10359.42	Vertical	1.0	127	45.00	68.23	-23.23	Pass
5.26 GHz carrier frequency							
10516.33	Vertical	1.0	120	43.67	68.23	-24.56	Pass

*****- EUT front panel refers to 0 degrees position of turntable.
******- Margin = Attenuation below carrier – specification limit.

Table 7.13.6 Field strength of spurious emissions below 1 GHz within restricted bands

ASSIGNED FREQUENCY:	5.12-5.35GHz, 5.725-5.825GHz
INVESTIGATED FREQUENCY RANGE:	0.009 – 1000 MHz
TEST DISTANCE:	3 m
MODULATION:	OFDM
MODULATING SIGNAL:	PRBS
BIT RATE:	1 Mbps
TRANSMITTER OUTPUT POWER SETTINGS:	Maximum
RESOLUTION BANDWIDTH:	0.2 kHz (9 kHz – 150 kHz) 9.0 kHz (150 kHz – 30 MHz) 120 kHz (30 MHz – 1000 MHz)
VIDEO BANDWIDTH:	> Resolution bandwidth
TEST ANTENNA TYPE:	Active loop (9 kHz – 30 MHz) Biconilog (30 MHz – 1000 MHz)

Frequency, MHz	Peak emission, dB(µV/m)	Quasi-peak			Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
		Measured emission, dB(µV/m)	Limit, dB(µV/m)	Margin, dB*				
All carrier frequency								
168.8250	45.60	41.98	43.50	-1.52	Vertical	1.0	122	Pass
170.7322	45.79	43.27	43.50	-0.23	Vertical	1.0	317	
172.0866	43.59	39.48	43.50	-4.02	Vertical	1.1	318	

*****- Margin = Measured emission - specification limit.
******- EUT front panel refer to 0 degrees position of turntable.

Reference numbers of test equipment used

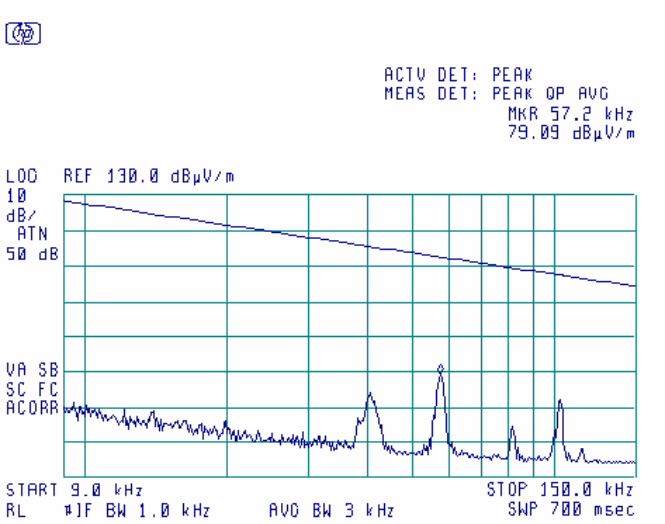
HL 0446	HL 0521	HL 0589	HL 0604	HL 1984	HL 1947	HL 2009	

Full description is given in Appendix A.

Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

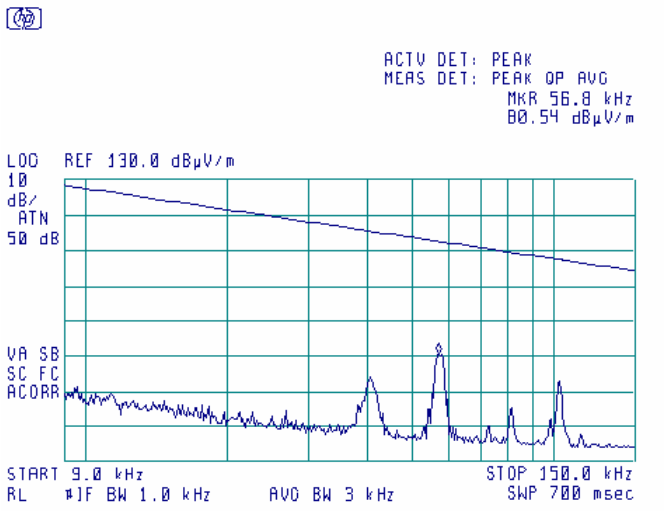
Plot 7.13.1 Radiated emission measurements from 9 to 150 kHz at the 5.18GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.2 Radiated emission measurements from 9 to 150 kHz at the 5.26GHz carrier frequency

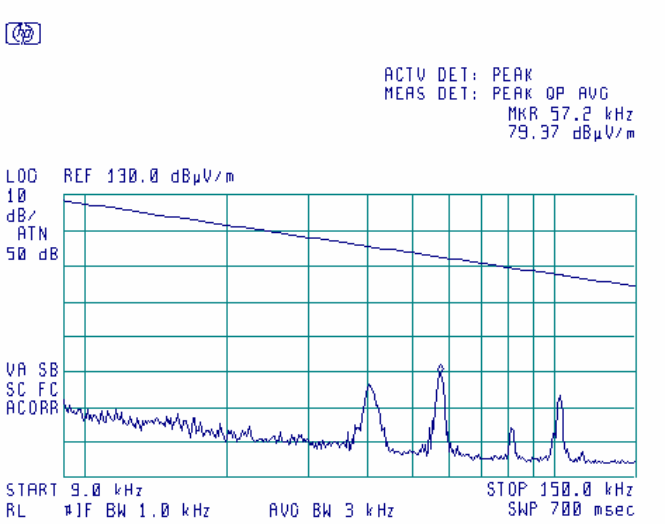
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

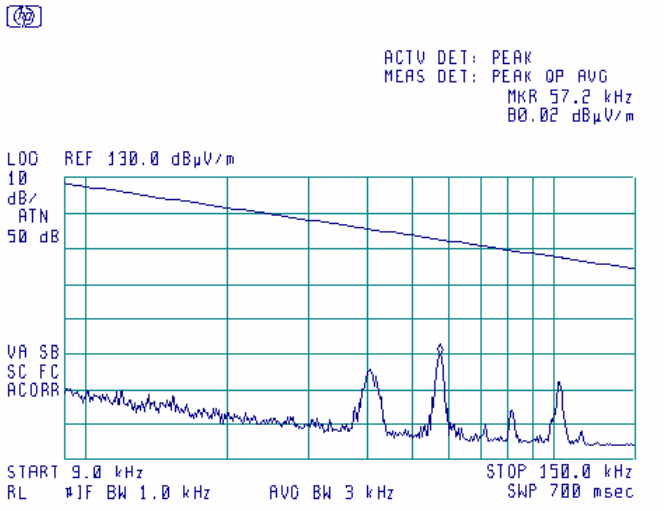
Plot 7.13.3 Radiated emission measurements from 9 to 150 kHz at the 5.32GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.4 Radiated emission measurements from 9 to 150 kHz at the 5.745GHz carrier frequency

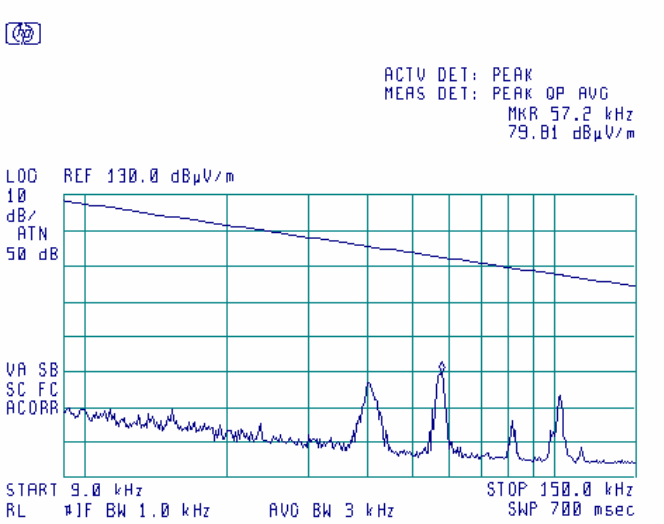
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

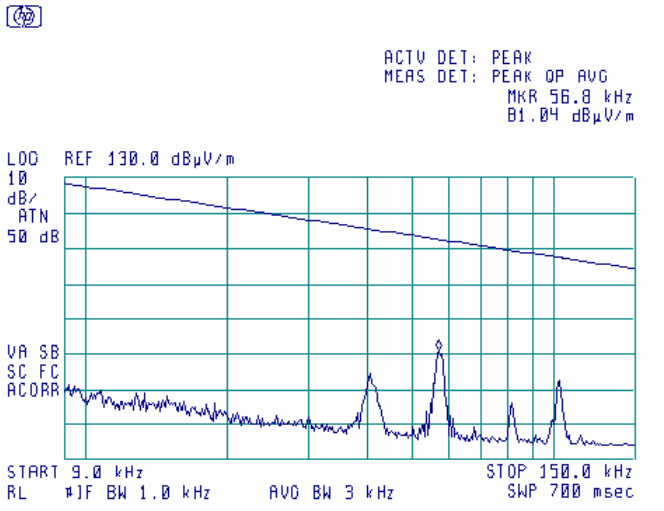
Plot 7.13.5 Radiated emission measurements from 9 to 150 kHz at the 5.785GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.6 Radiated emission measurements from 9 to 150 kHz at the 5.805GHz carrier frequency

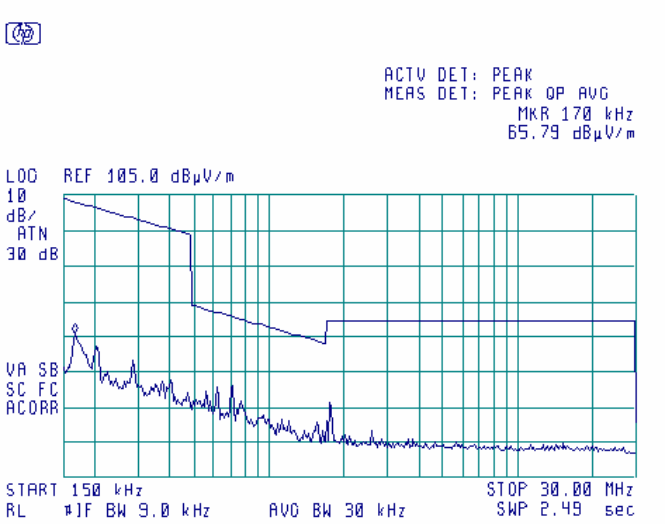
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

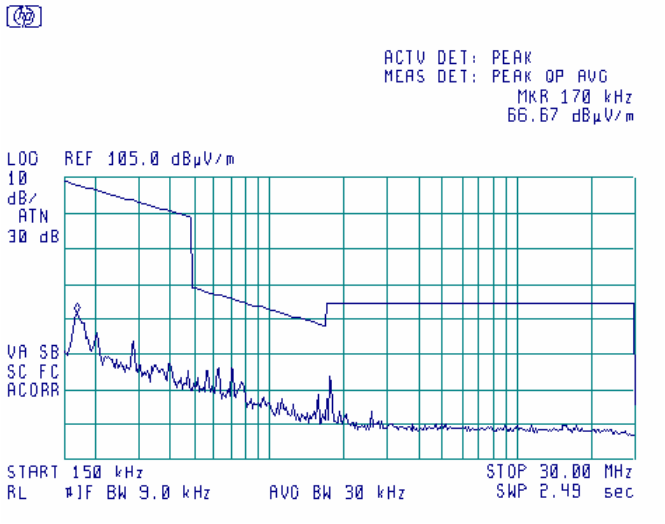
Plot 7.13.7 Radiated emission measurements from 0.15 to 30 MHz at the 5.18GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.8 Radiated emission measurements from 0.15 to 30 MHz at the 5.26GHz carrier frequency

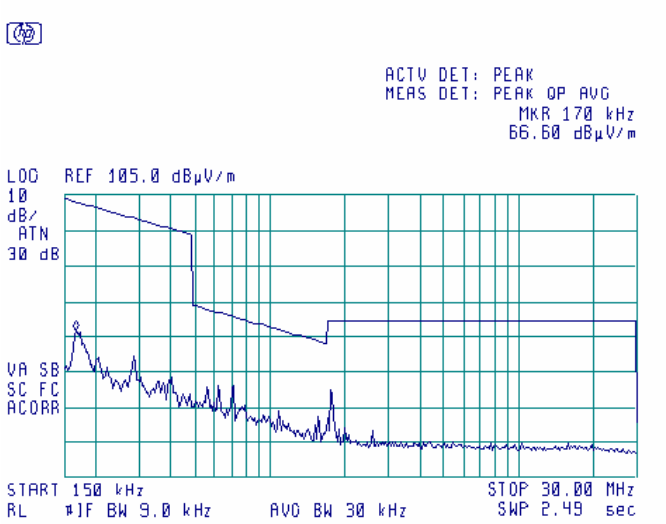
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

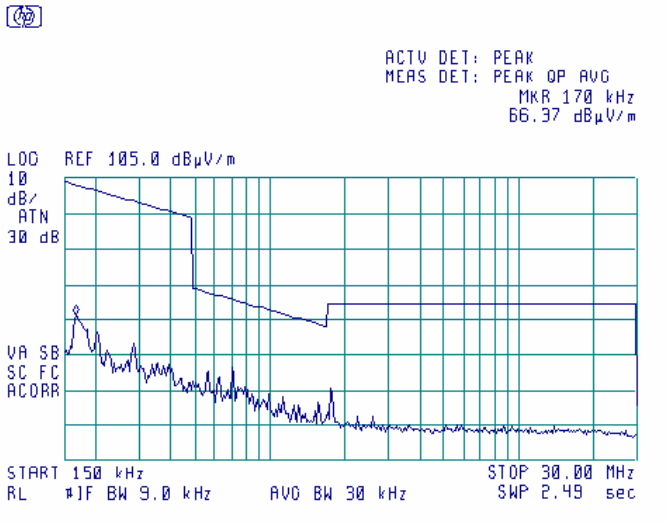
Plot 7.13.9 Radiated emission measurements from 0.15 to 30 MHz at the 5.32GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.10 Radiated emission measurements from 0.15 to 30 MHz at the 5.745GHz carrier frequency

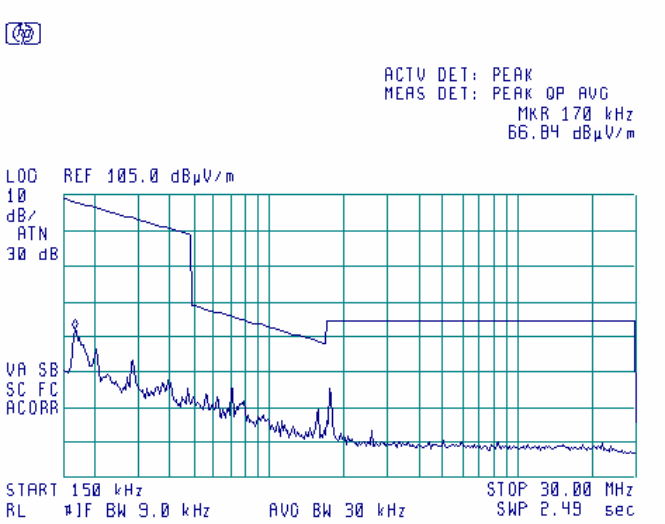
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

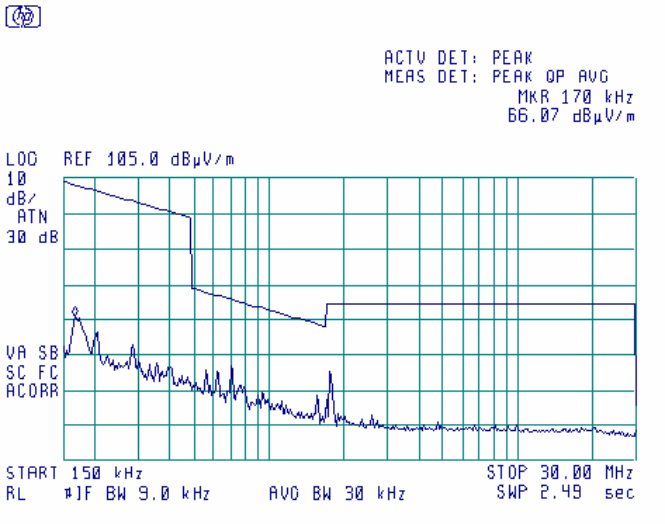
Plot 7.13.11 Radiated emission measurements from 0.15 to 30 MHz at the 5.785GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.12 Radiated emission measurements from 0.15 to 30 MHz at the 5.805GHz carrier frequency

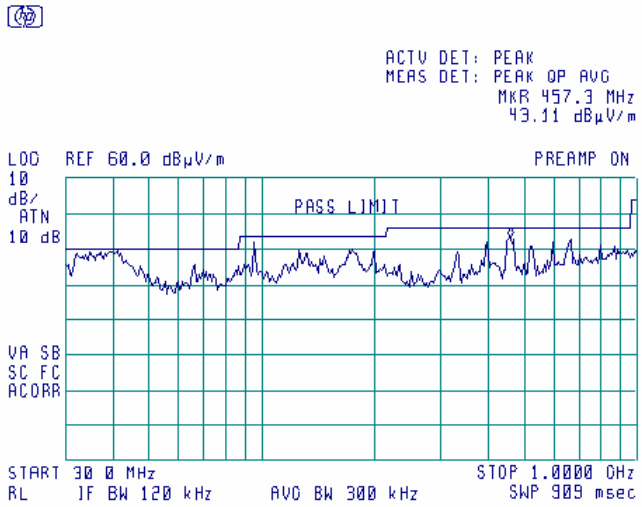
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.13 Radiated emission measurements from 30 to 1000 MHz at the 5.18GHz carrier frequency

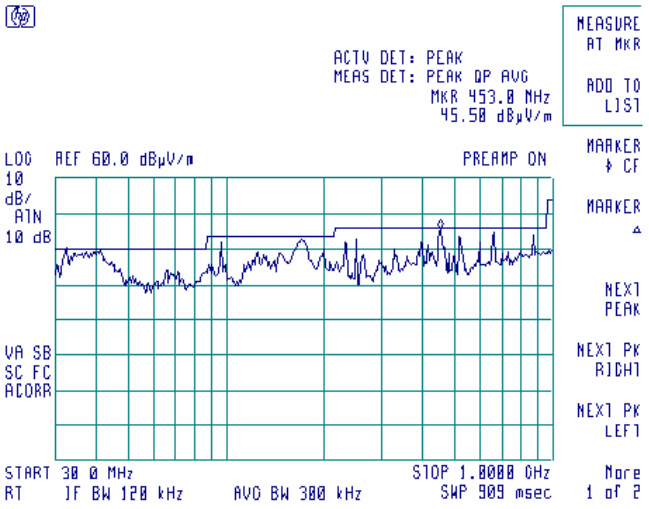
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Outside restricted bands: 39.72 MHz, 96 MHz, 398.8 MHz 457.3 MHz, 516.8 MHz, 595.5 MHz, 663.4 MHz

Plot 7.13.14 Radiated emission measurements from 30 to 1000 MHz at the 5.26GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal

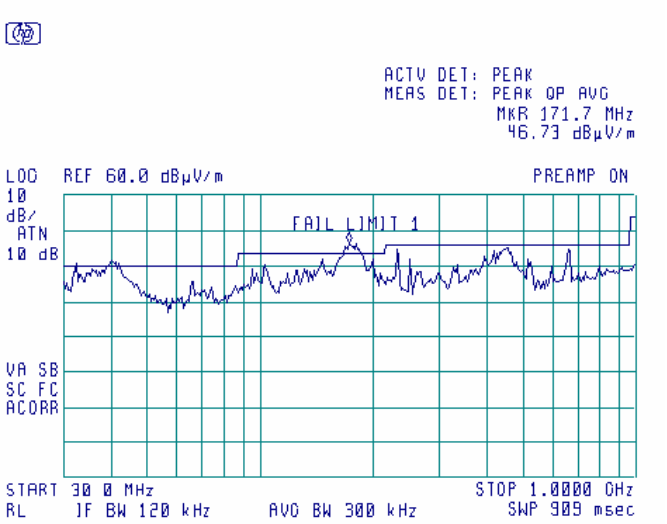


Outside restricted band emissions: 32.8 MHz, 97.0 MHz, 199.5 MHz, 453.0 MHz, 516.8 MHz, 663.4 MHz

Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.15 Radiated emission measurements from 30 to 1000 MHz at the 5.32GHz carrier frequency

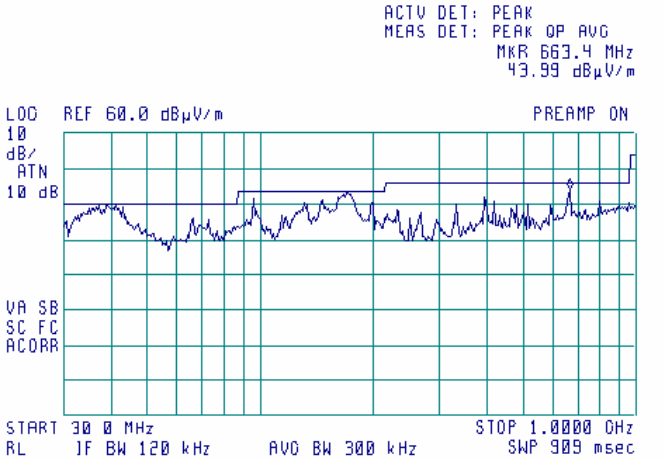
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal 171.7MHz



Outside restricted bands: 40.5 MHz, 102.7 MHz, 180.4 MHz, 231.0 MHz, 448.7 MHz, 657.0 MHz

Plot 7.13.16 Radiated emission measurements from 30 to 1000 MHz at the 5.745GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal

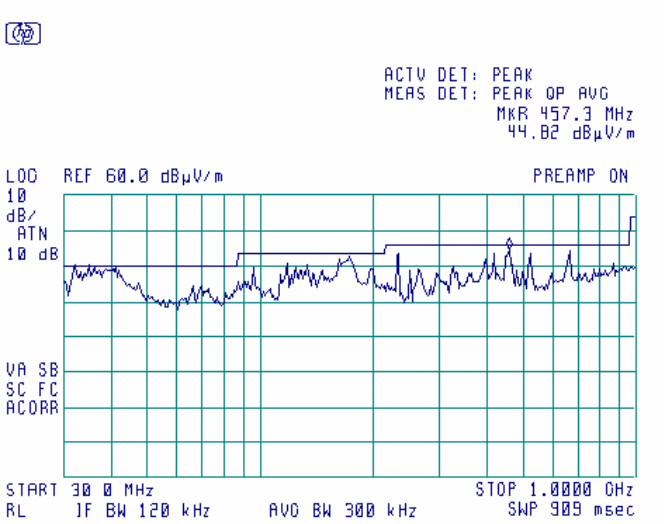


Outside restricted bands: 41.3 MHz, 97.0 MHz, 395.3 MHz, 414.4 MHz, 663.4 MHz

Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.17 Radiated emission measurements from 30 to 1000 MHz at the 5.785GHz carrier frequency

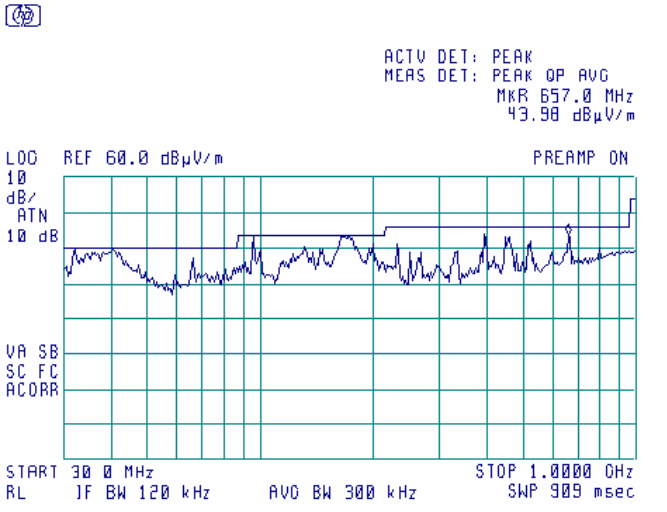
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Outside restricted bands: 35.4 MHz, 97.0 MHz, 414.4 MHz, 457.3 MHz, 663.4 MHz,

Plot 7.13.18 Radiated emission measurements from 30 to 1000 MHz at the 5.805GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal

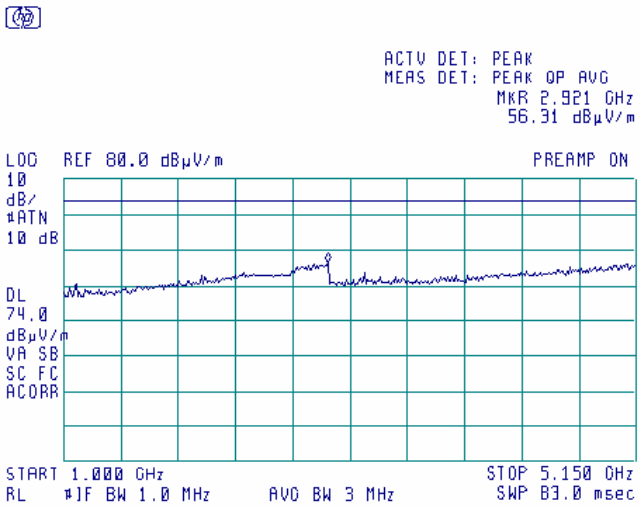


Outside restricted bands: 32.5 MHz, 97.0 MHz, 395.3 MHz, 457.3 MHz, 657.0 MHz

Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

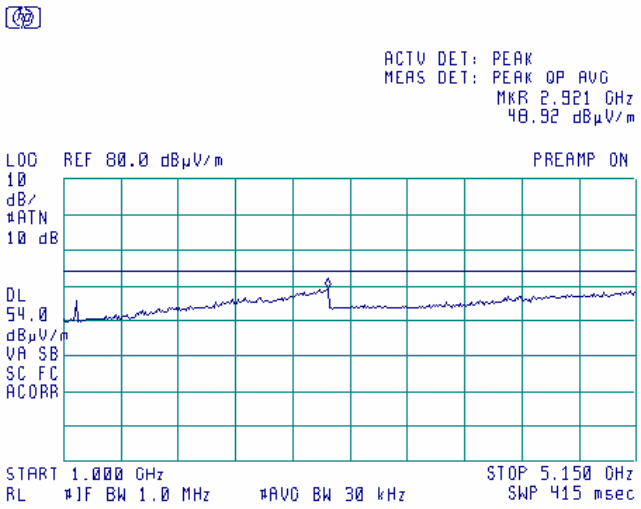
Plot 7.13.19 Radiated emission measurements from 1.0 to 5.15 GHz at the 5.18GHz carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.20 Radiated emission measurements from 1.0 to 5.15 GHz at the 5.18 GHz carrier frequency

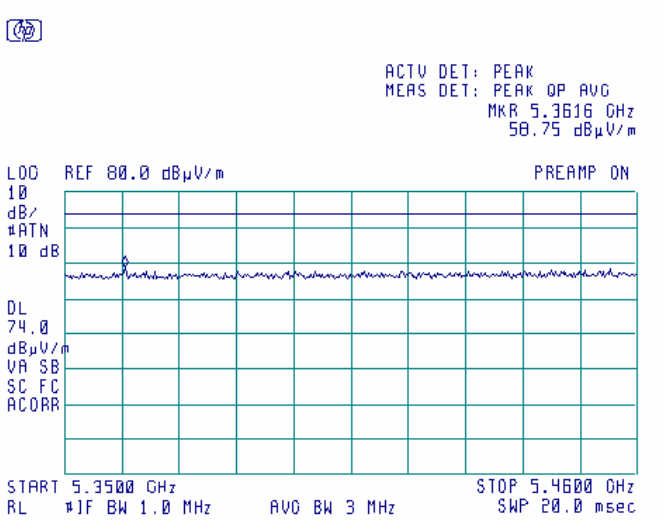
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



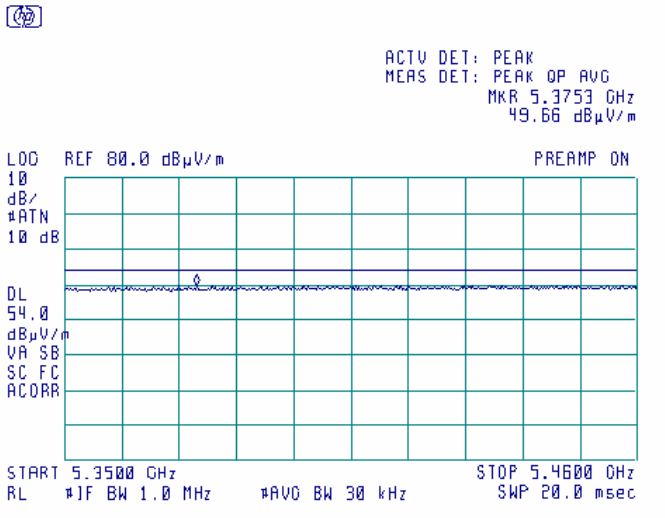
Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.21 Radiated emission measurements from 5.35 to 5.46 GHz at the 5.18GHz carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



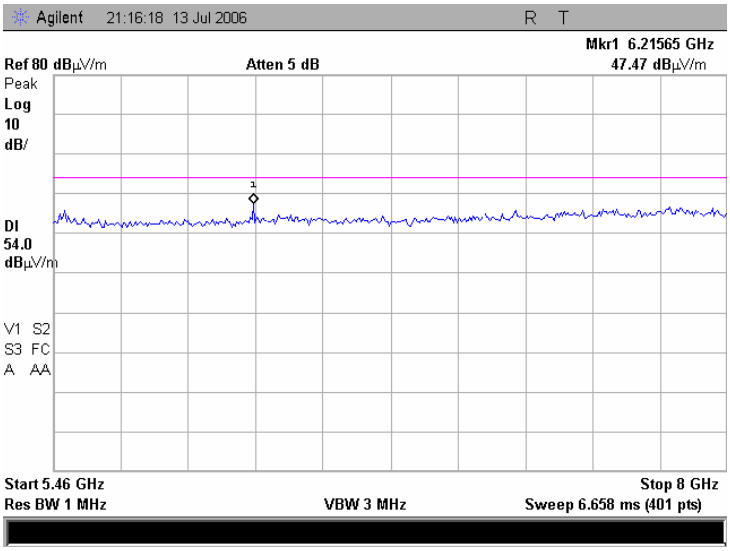
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

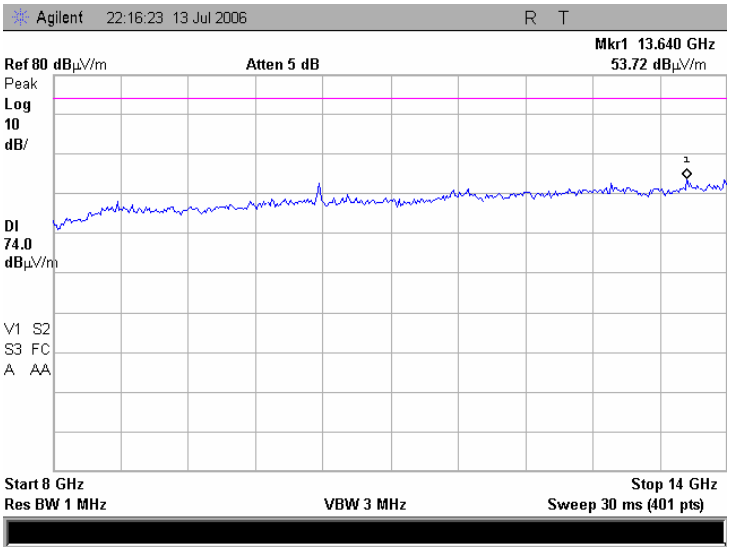
Plot 7.13.22 Radiated emission measurements from 5.46 to 8.0 GHz at the 5.18GHz carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.23 Radiated emission measurements from 8.0 to 14.0 GHz at the 5.18GHz carrier frequency

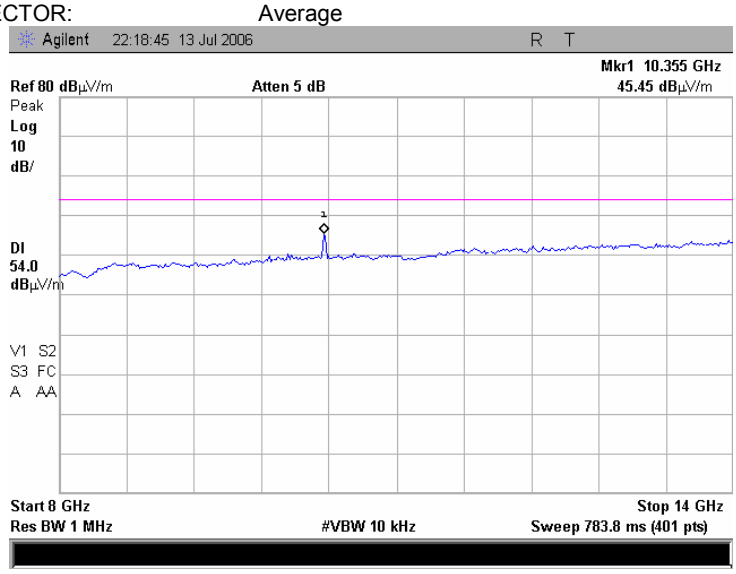
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

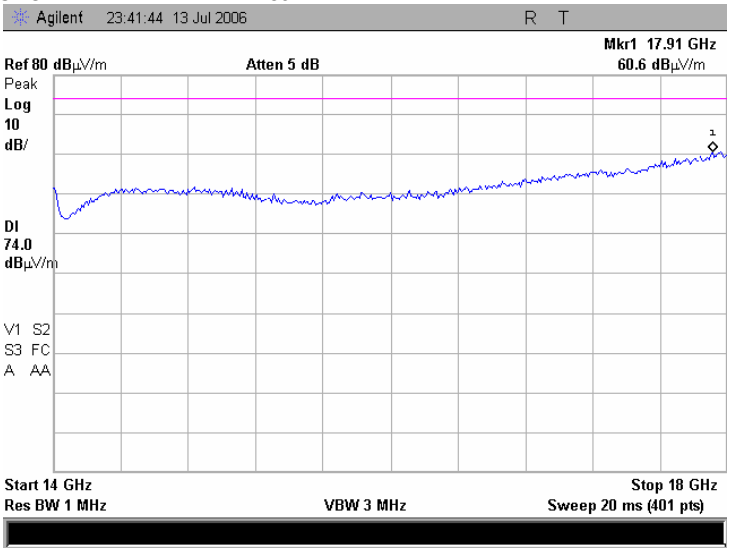
Plot 7.13.24 Radiated emission measurements from 8.0 to 14.0 GHz at the 5.18GHz carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.25 Radiated emission measurements from 14 to 18 GHz at the 5.18GHz carrier frequency

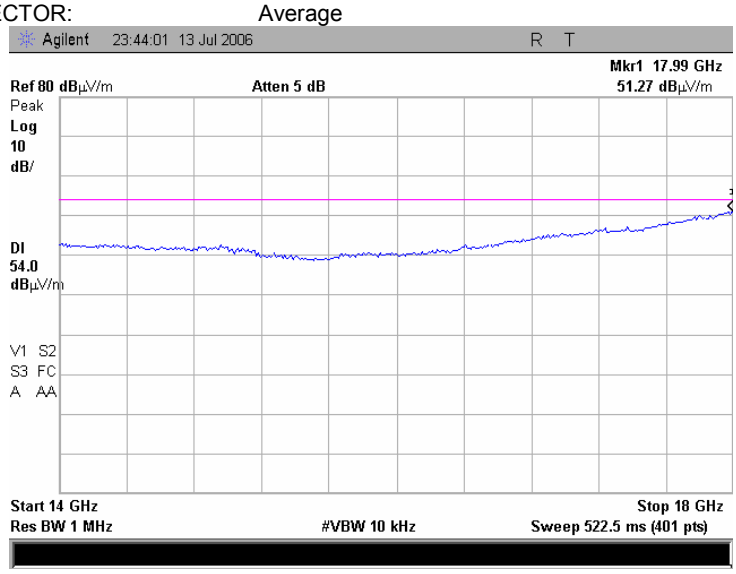
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

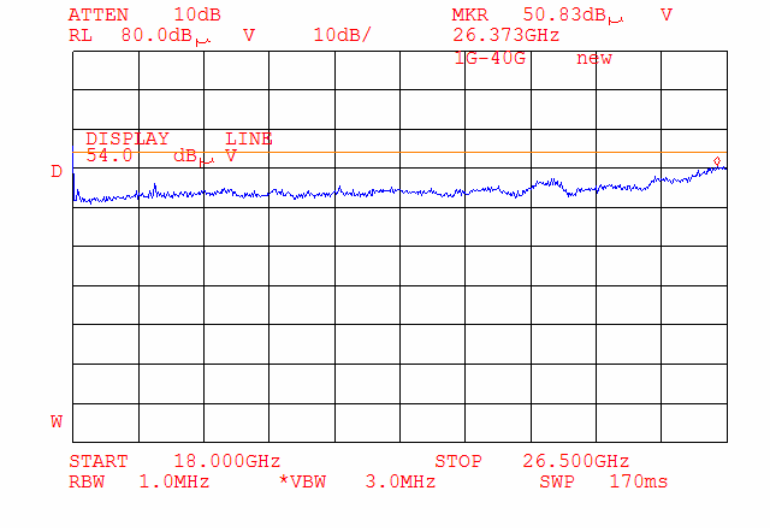
Plot 7.13.26 Radiated emission measurements from 14 to 18 GHz at the 5.18GHz carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.27 Radiated emission measurements from 18 to 26.5 GHz at the 5.18GHz carrier frequency

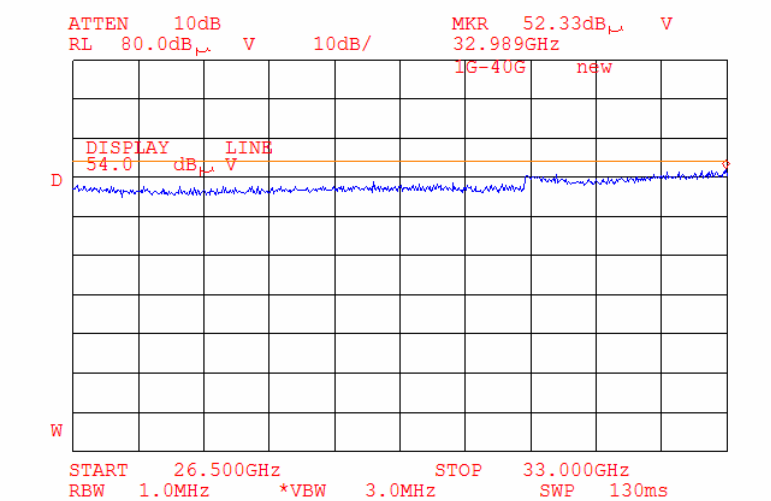
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

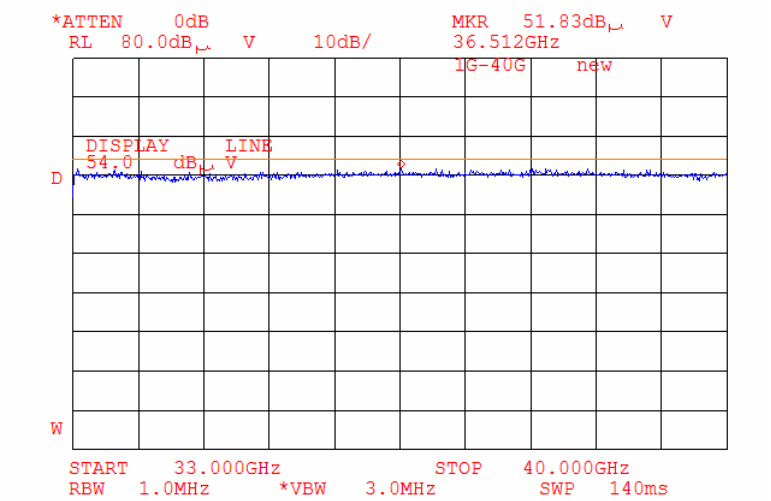
Plot 7.13.28 Radiated emission measurements from 26.5 to 33 GHz at the 5.18GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.29 Radiated emission measurements from 33 to 40 GHz at the 5.18GHz carrier frequency

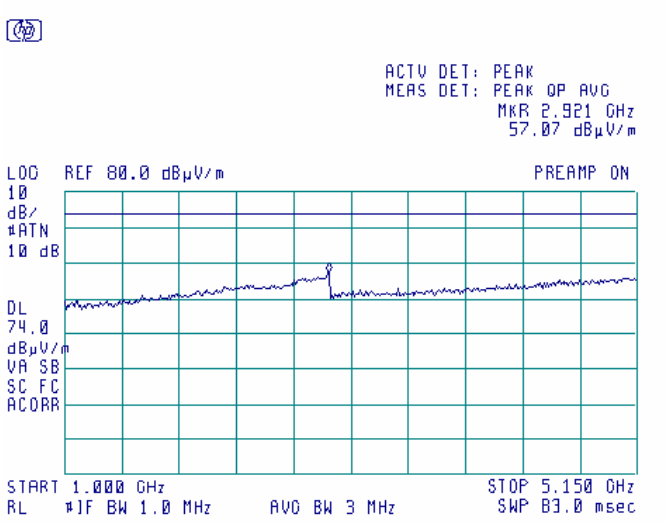
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

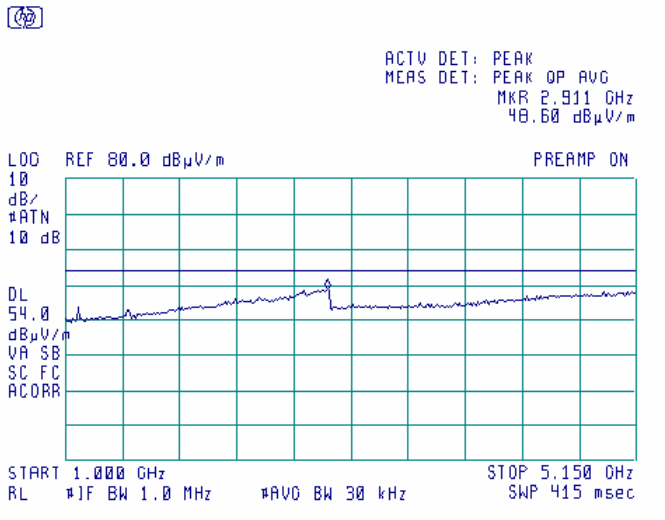
Plot 7.13.30 Radiated emission measurements from 1.0 to 5.15 GHz at the 5.26 GHz carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.31 Radiated emission measurements from 1.0 to 5.15 GHz at the 5.26 GHz carrier frequency

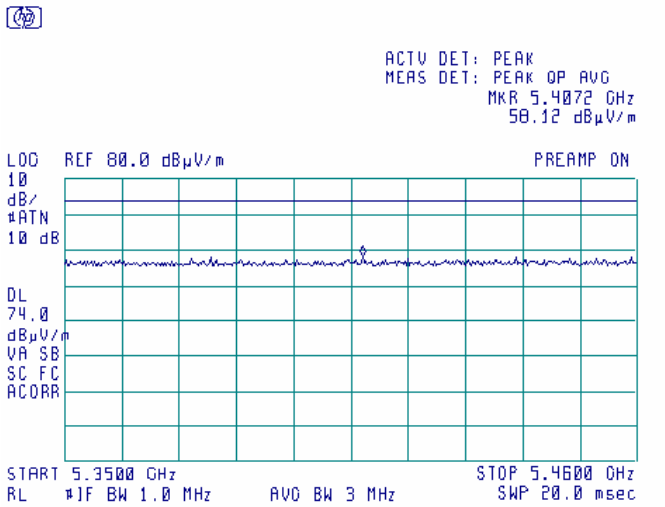
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

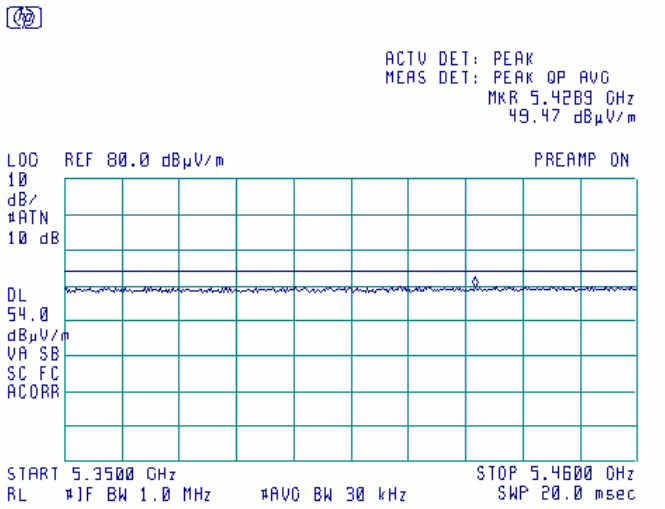
Plot 7.13.32 Radiated emission measurements from 5.35 to 5.46 GHz at the 5.26GHz carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.33 Radiated emission measurements from 5.35 to 5.46 GHz at the 5.26GHz carrier frequency

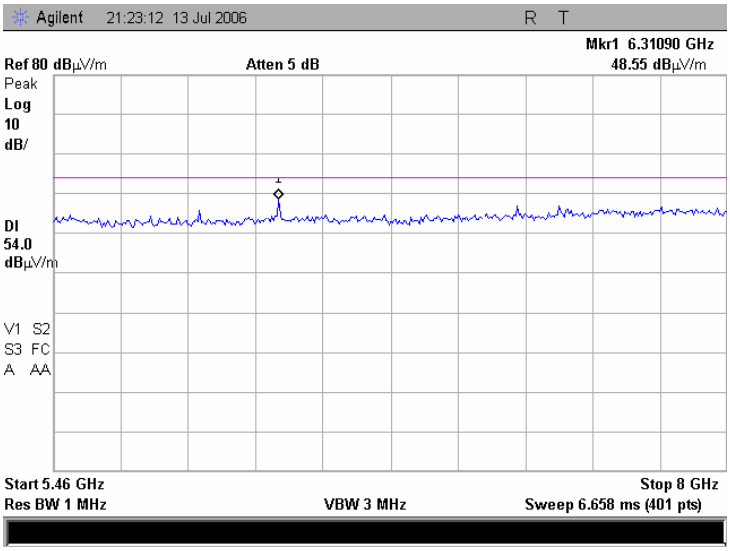
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

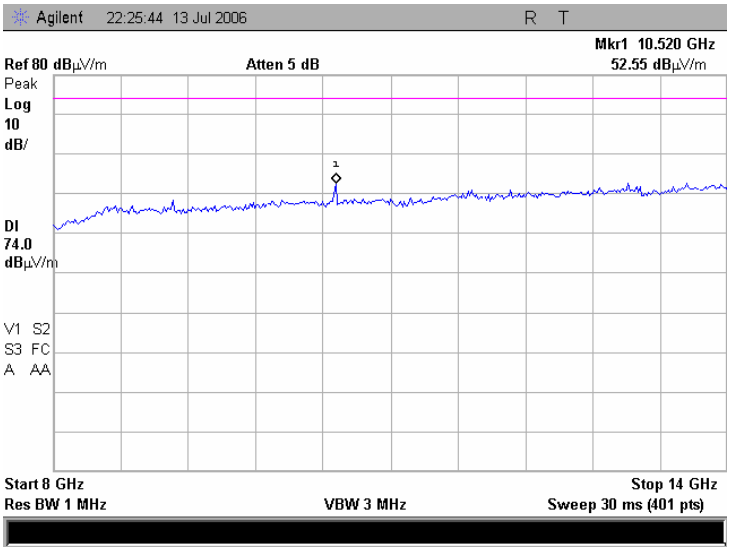
Plot 7.13.34 Radiated emission measurements from 5.46 to 8.0 GHz at the 5.26 GHz carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.35 Radiated emission measurements from 8 to 14 GHz at the 5.26 GHz carrier frequency

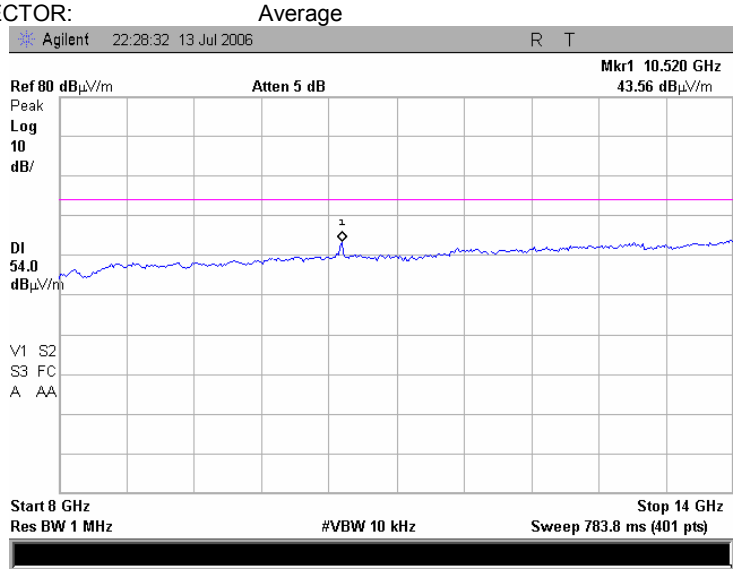
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

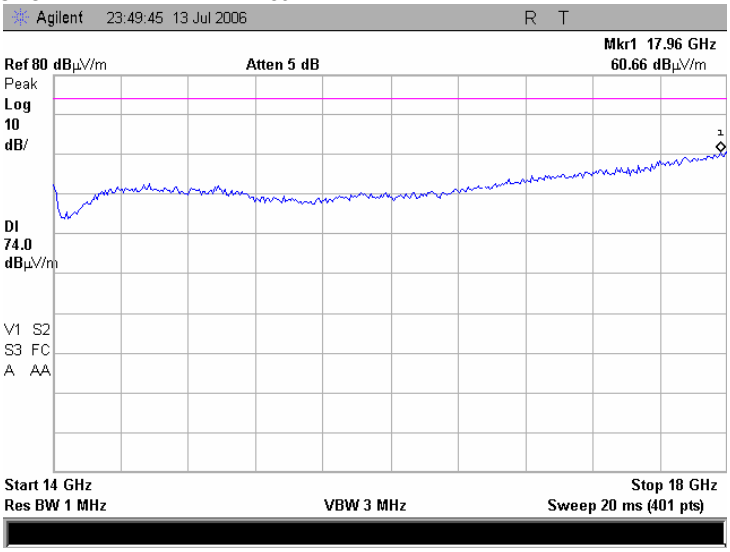
Plot 7.13.36 Radiated emission measurements from 8 to 14 GHz at the 5.26 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.37 Radiated emission measurements from 14 to 18 GHz at the 5.26GHz carrier frequency

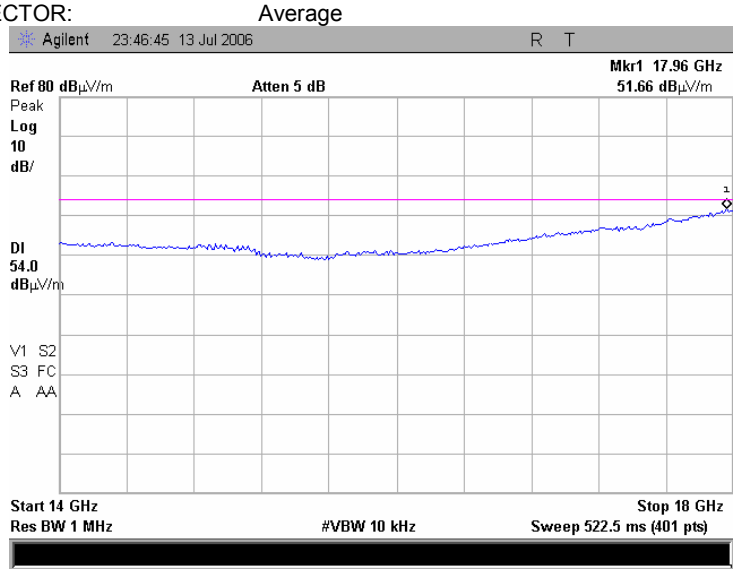
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

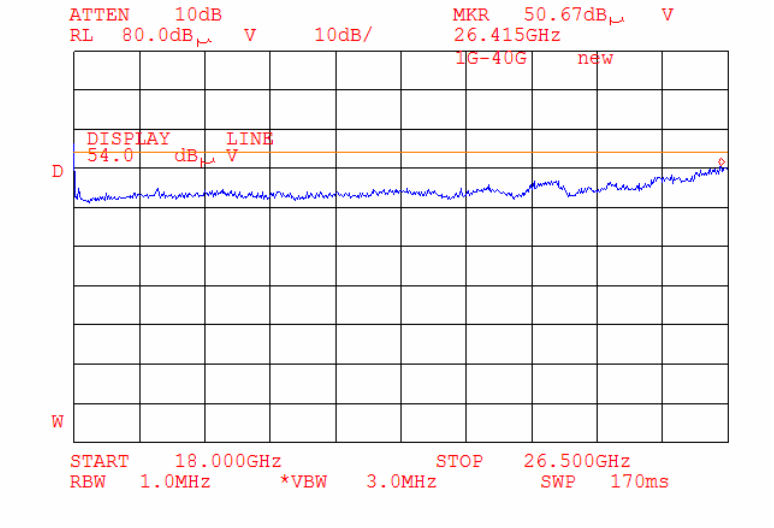
Plot 7.13.38 Radiated emission measurements from 14 to 18 GHz at the 5.26GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.39 Radiated emission measurements from 18 to 26.5 GHz at the 5.26GHz carrier frequency

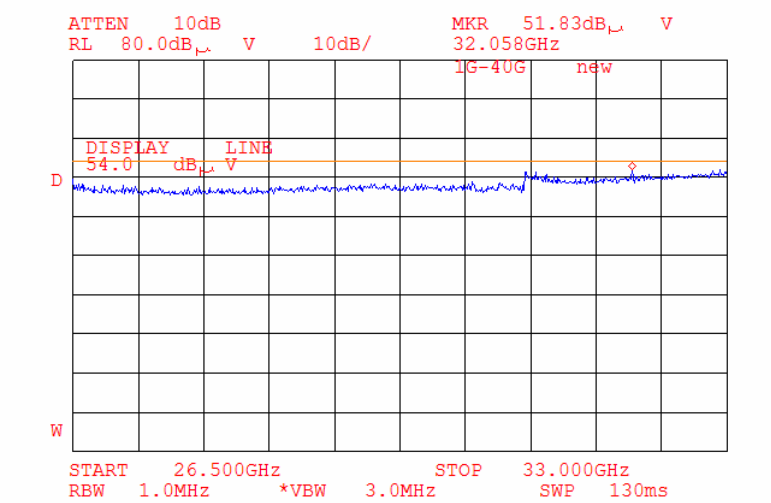
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

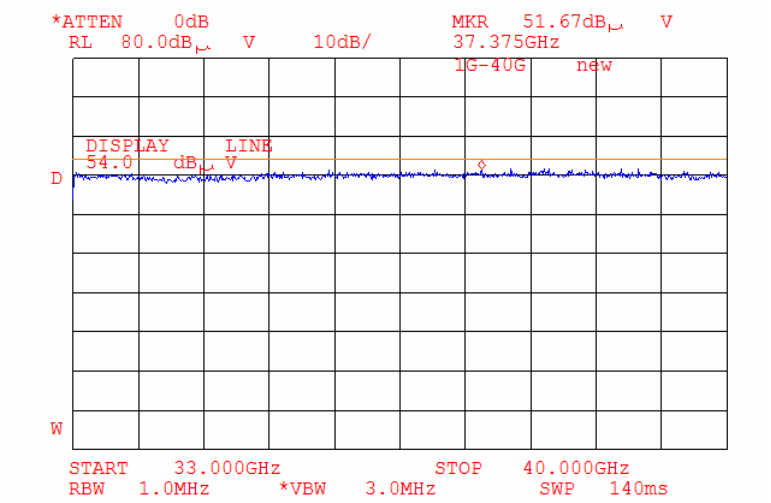
Plot 7.13.40 Radiated emission measurements from 26.5 to 33 GHz at the 5.26GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.41 Radiated emission measurements from 33 to 40 GHz at the 5.26GHz carrier frequency

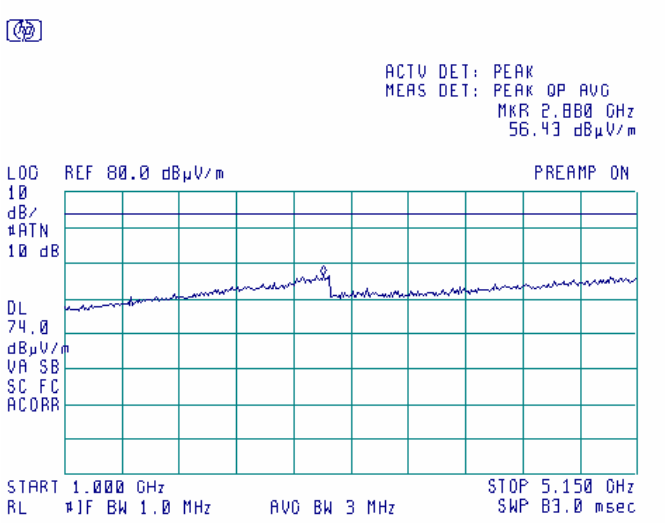
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

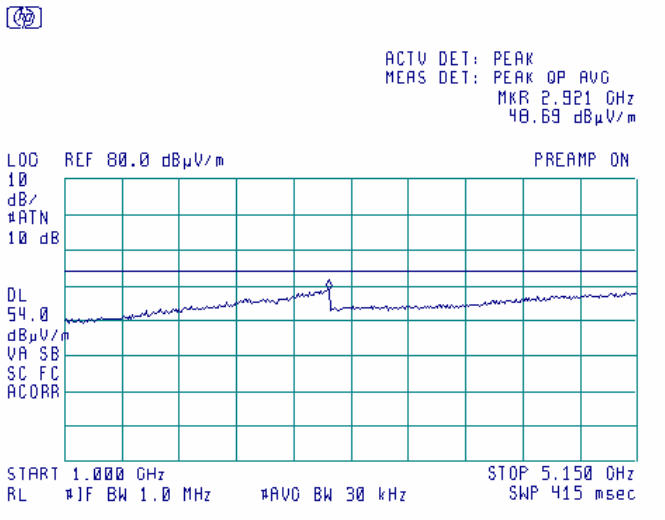
Plot 7.13.42 Radiated emission measurements from 1.0 to 5.15 GHz at the 5.32 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.43 Radiated emission measurements from 1.0 to 5.15 GHz at the 5.32 GHz carrier frequency

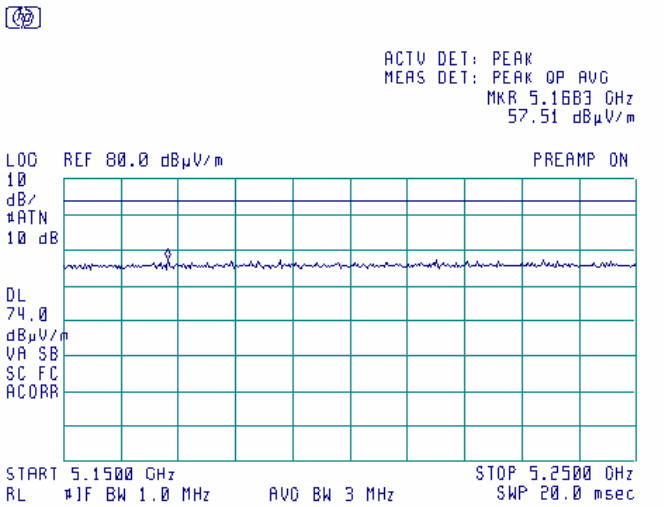
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

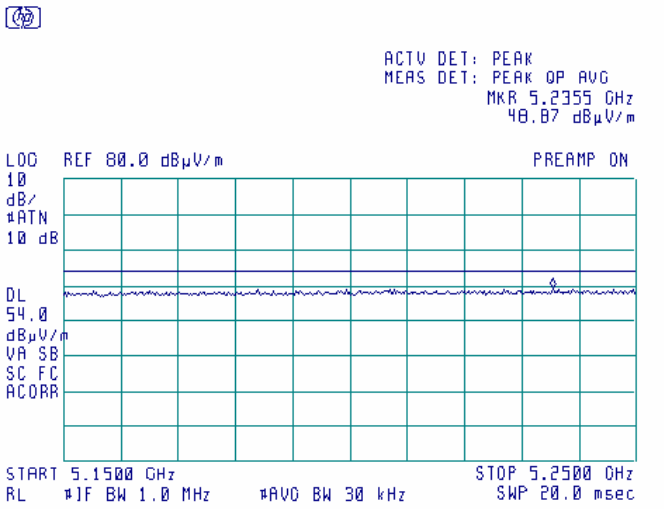
Plot 7.13.44 Radiated emission measurements from 5.15 to 5.25 GHz at the 5.32 GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.45 Radiated emission measurements from 5.15 to 5.25 GHz at the 5.32 GHz carrier frequency

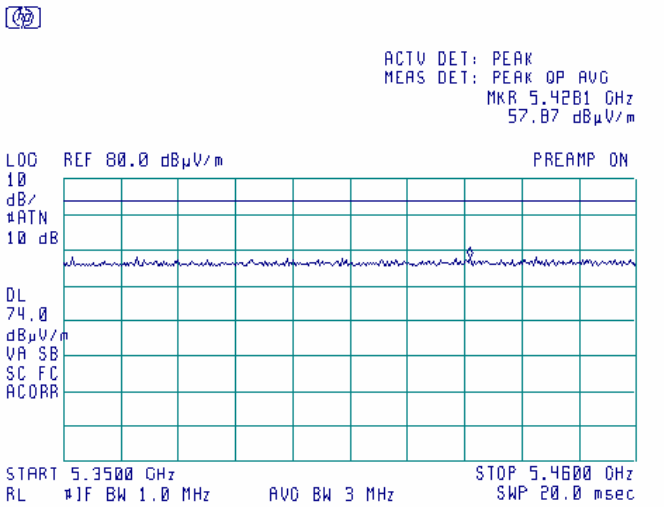
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

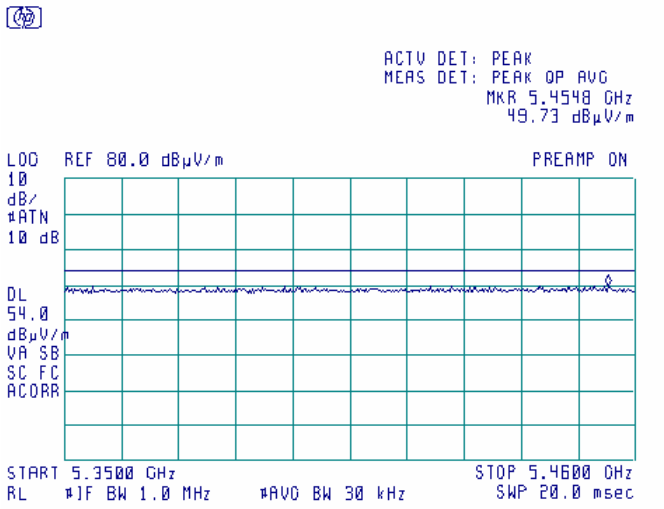
Plot 7.13.46 Radiated emission measurements from 5.35 to 5.46 GHz at the 5.32 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.47 Radiated emission measurements from 5.35 to 5.46 GHz at the 5.32 GHz carrier frequency

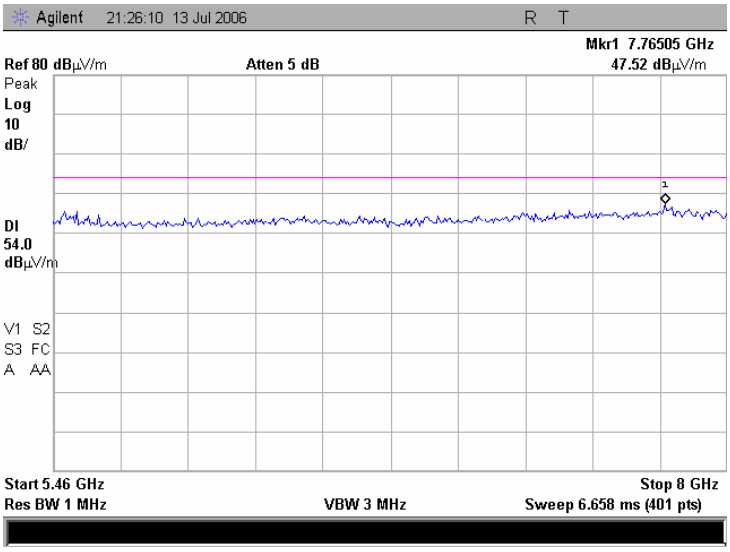
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

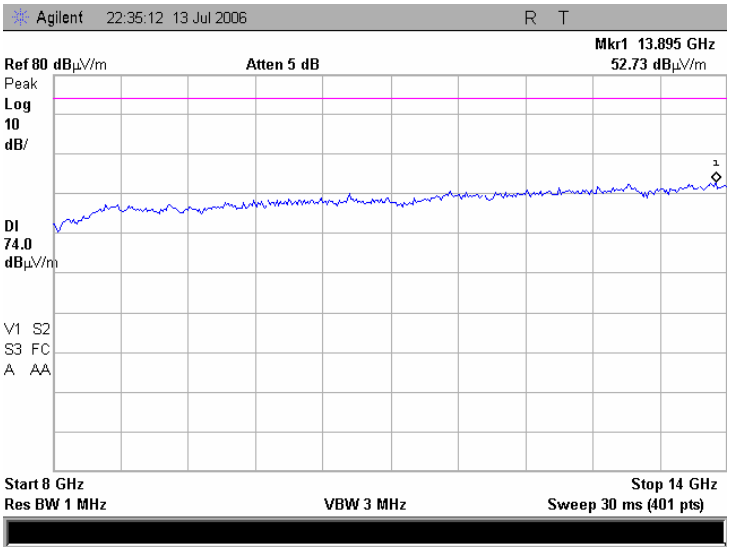
Plot 7.13.48 Radiated emission measurements from 5.46 to 8.0 GHz at the 5.32 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.49 Radiated emission measurements from 8 to 14 GHz at the 5.32 GHz carrier frequency

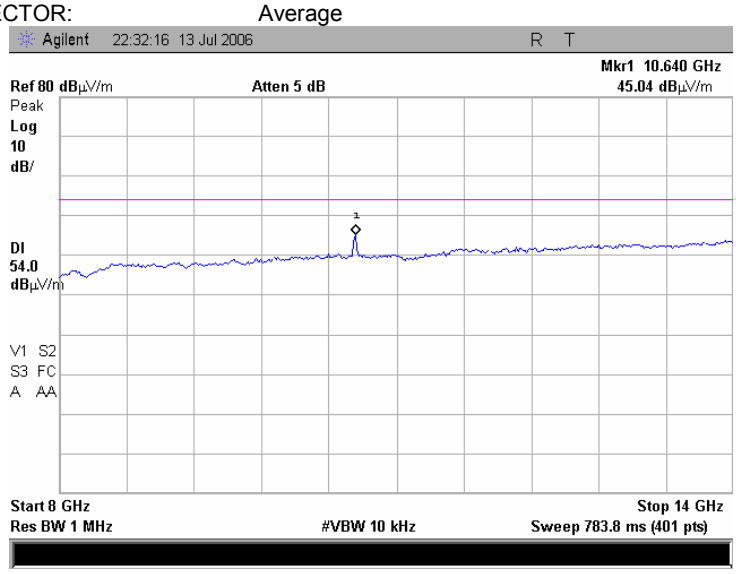
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

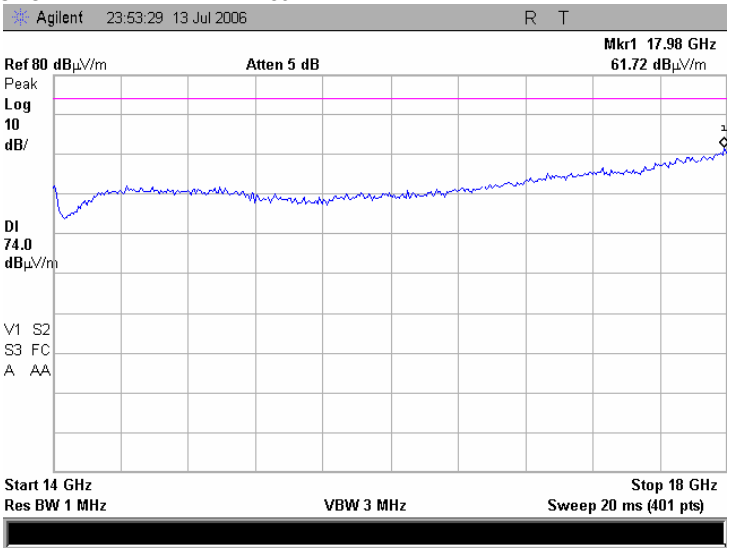
Plot 7.13.50 Radiated emission measurements from 8 to 14 GHz at the 5.32 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.51 Radiated emission measurements from 14 to 18 GHz at the 5.32 GHz carrier frequency

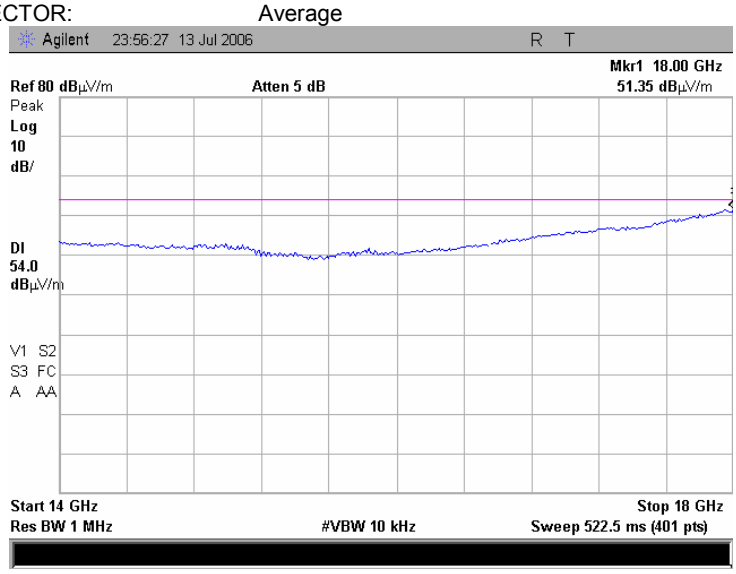
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

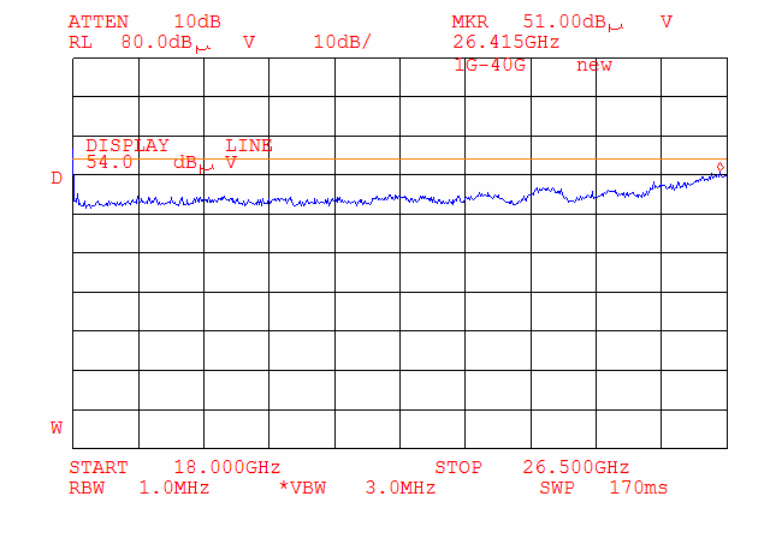
Plot 7.13.52 Radiated emission measurements from 14 to 18 GHz at the 5.32 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.53 Radiated emission measurements from 18 to 26.5 GHz at the 5.32GHz carrier frequency

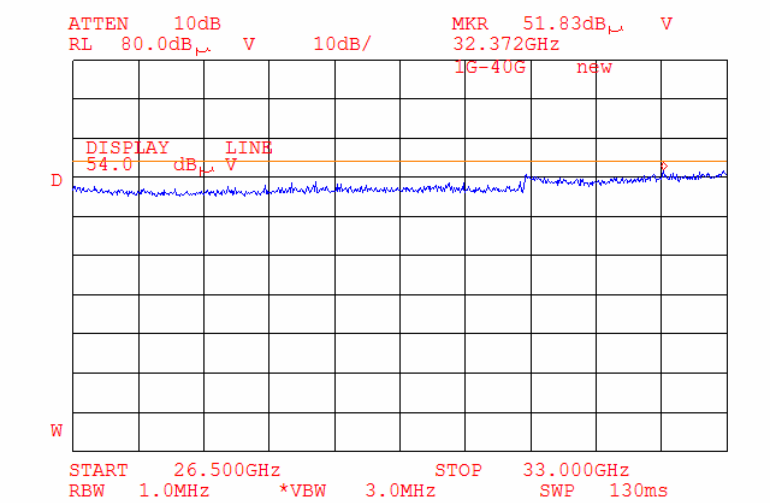
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

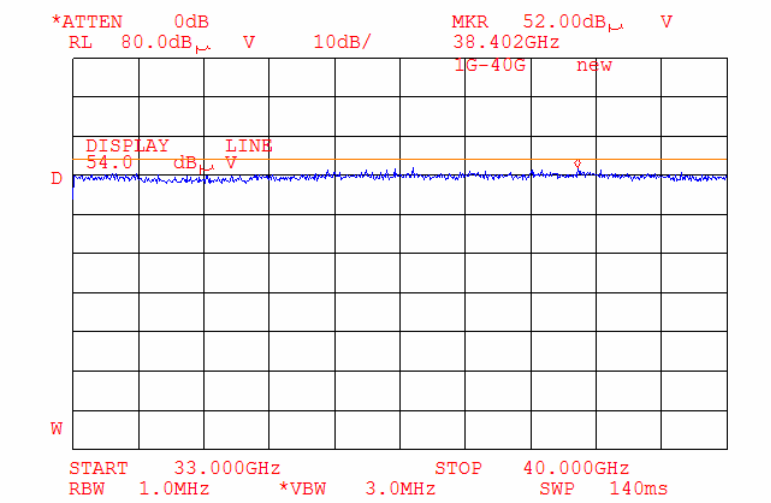
Plot 7.13.54 Radiated emission measurements from 26.5 to 33 GHz at the 5.32GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.55 Radiated emission measurements from 33 to 40 GHz at the 5.32GHz carrier frequency

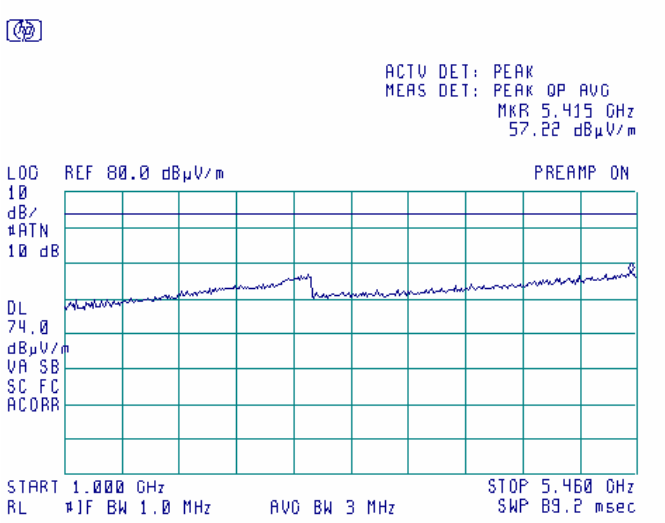
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

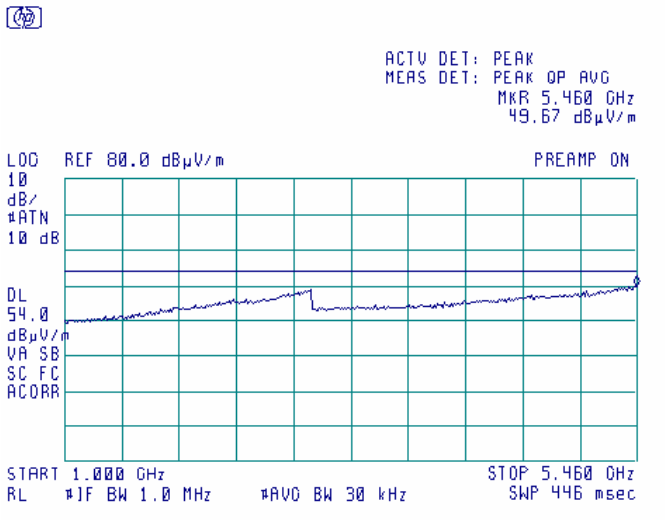
Plot 7.13.56 Radiated emission measurements from 1.0 to 5.46 GHz at the 5.745 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.57 Radiated emission measurements from 1.0 to 5.46 GHz at the 5.745 GHz carrier frequency

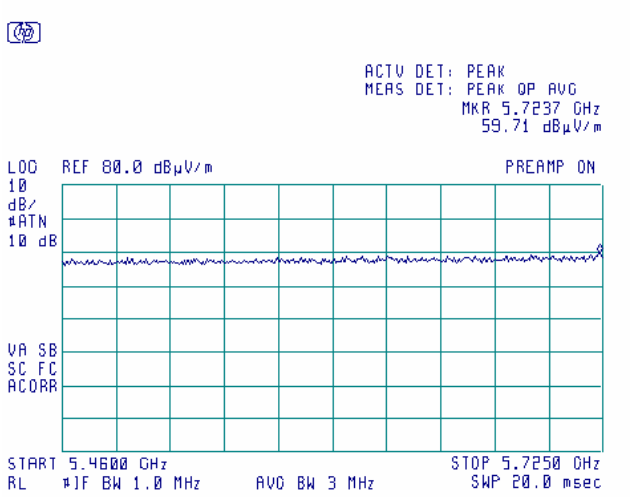
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

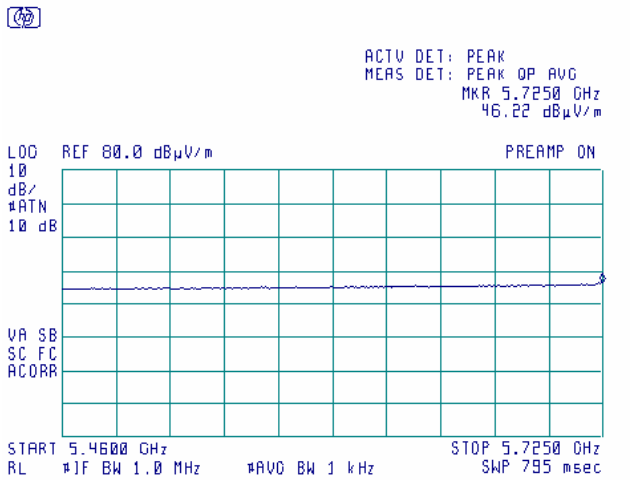
Plot 7.13.58 Radiated emission measurements from 5.46 to 5.725 GHz at the 5.745 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.59 Radiated emission measurements from 5.46 to 5.725 GHz at the 5.745 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak

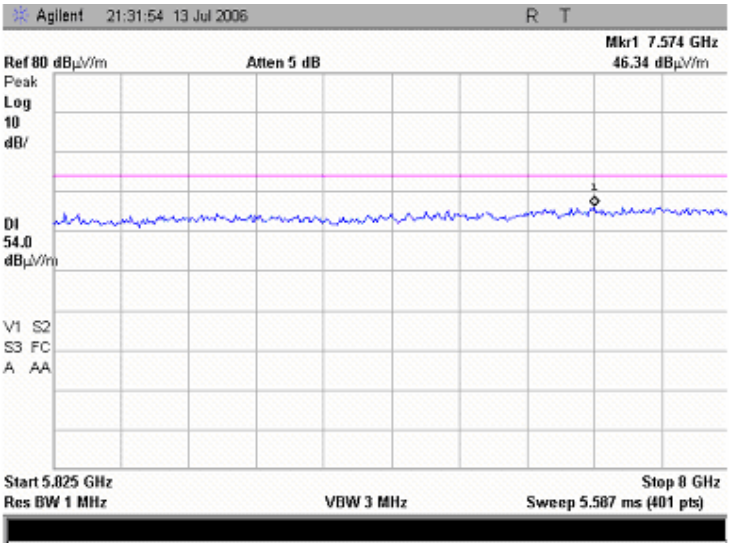


Note: Outside restricted band range (between 5460 MHz and 7250 MHz), the limit is 78.23 dBµV/m between 5.715 GHz and 5.725 GHz; 68.23 dBµV/m below 5.715 GHz

Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

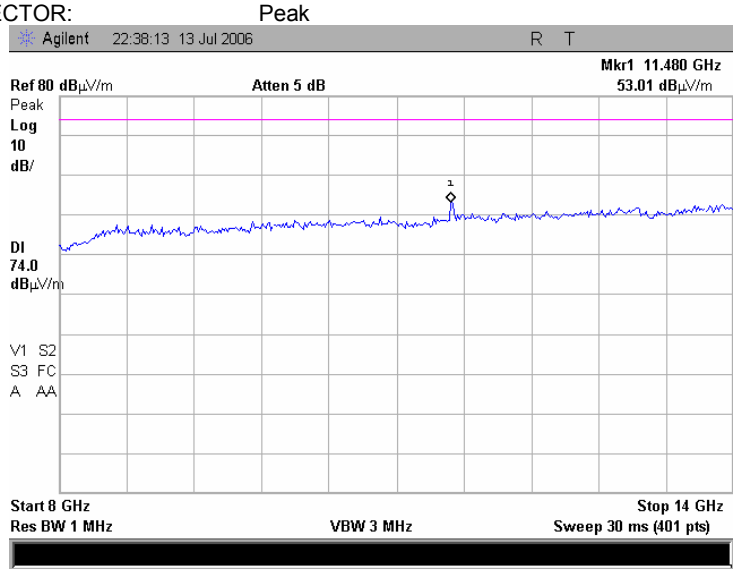
Plot 7.13.60 Radiated emission measurements from 5.825 to 8.0 GHz at the 5.745 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.61 Radiated emission measurements from 8 to 14 GHz at the 5.745 GHz carrier frequency

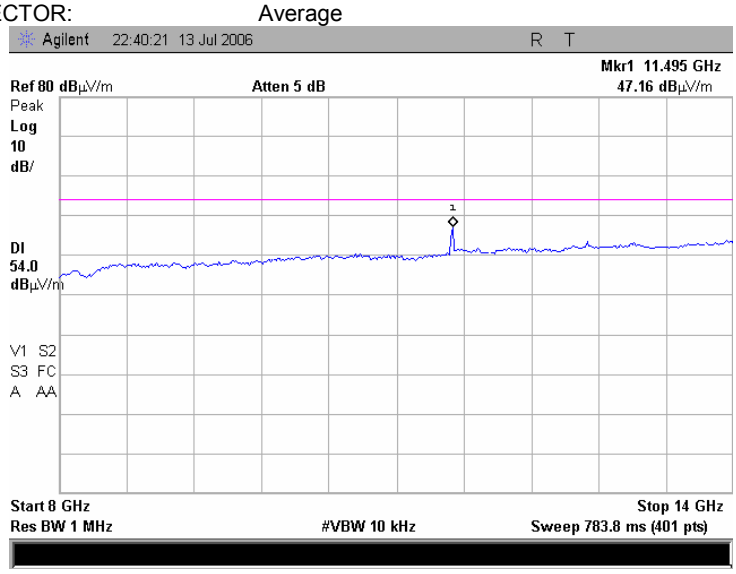
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

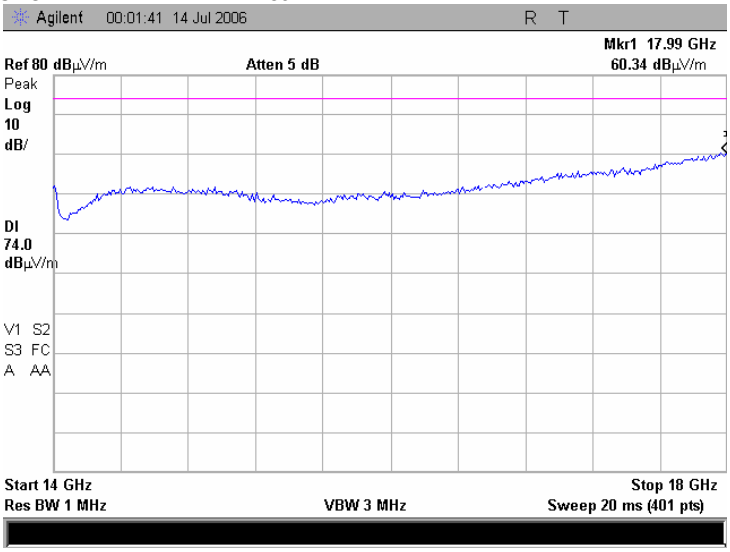
Plot 7.13.62 Radiated emission measurements from 8 to 14 GHz at the 5.745 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.63 Radiated emission measurements from 14 to 18 GHz at the 5.745GHz carrier frequency

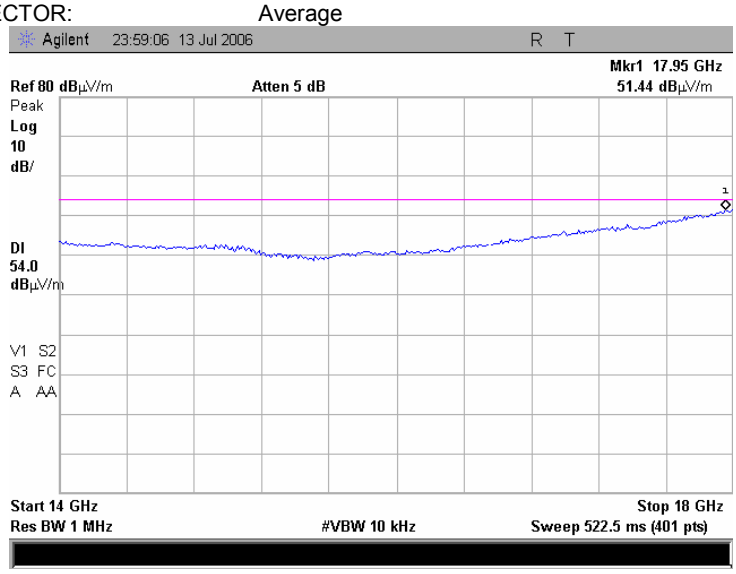
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

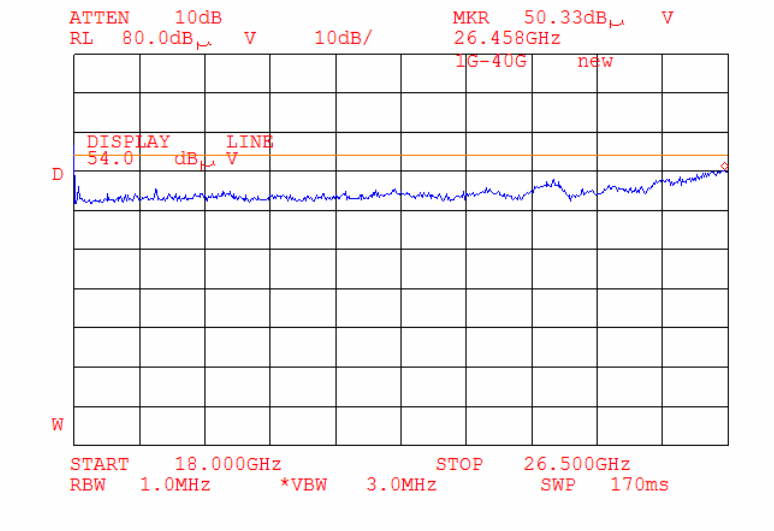
Plot 7.13.64 Radiated emission measurements from 14 to 18 GHz at the 5.745GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.65 Radiated emission measurements from 18 to 26.5 GHz at the 5.745GHz carrier frequency

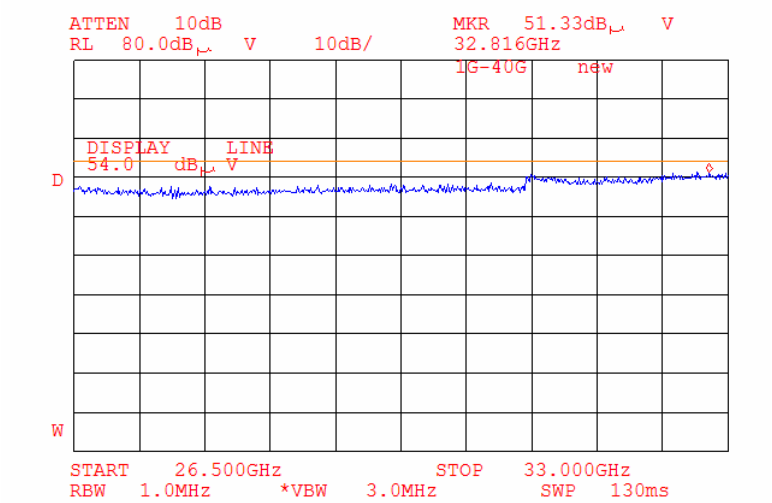
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

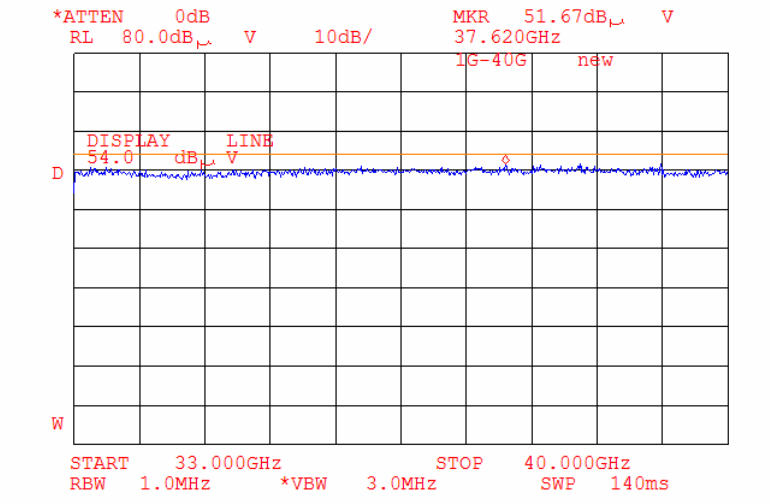
Plot 7.13.66 Radiated emission measurements from 26.5 to 33 GHz at the 5.745GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.67 Radiated emission measurements from 33 to 40 GHz at the 5.745GHz carrier frequency

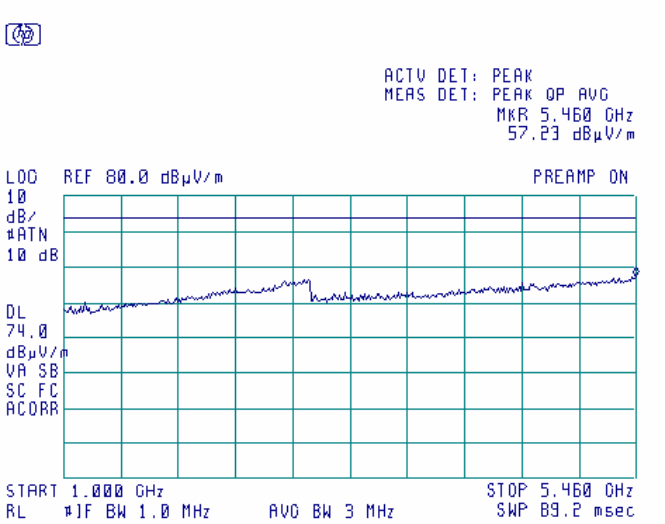
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



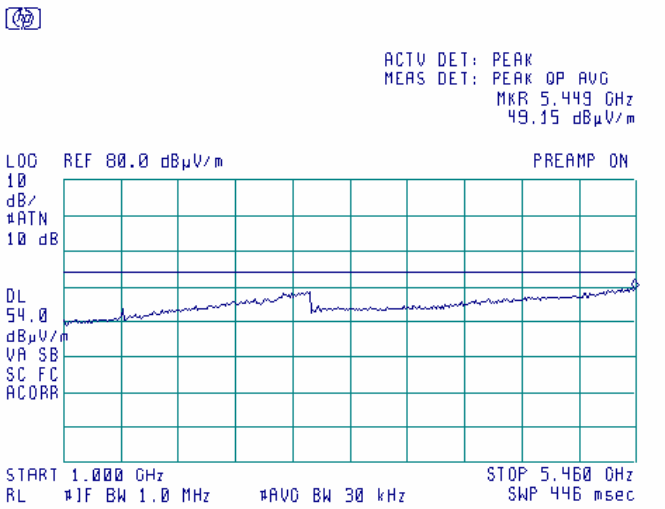
Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.68 Radiated emission measurements from 1.0 to 5.46 GHz at the 5.785 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



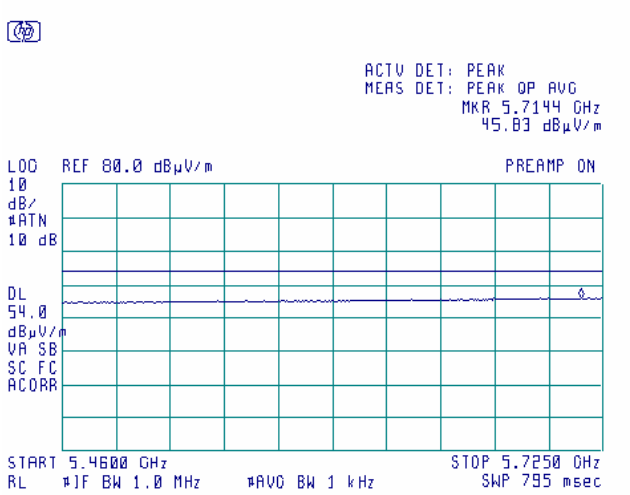
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.69 Radiated emission measurements from 5.46 to 5.725 GHz at the 5.785 GHz carrier frequency

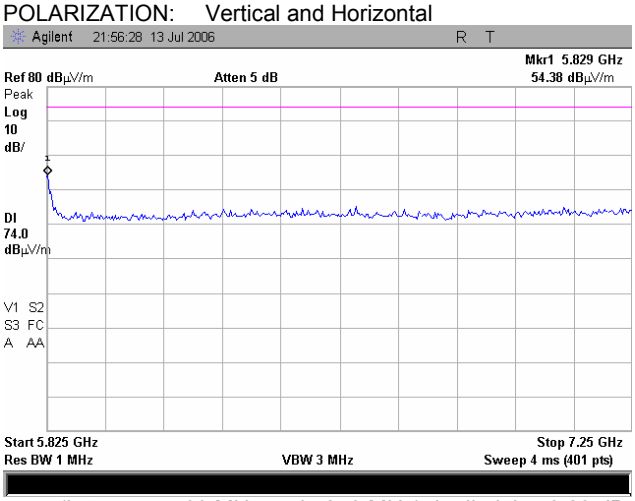
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Note: Outside restricted band range (between 5460 MHz and 7250 MHz) the limit is 78.23 dBµV/m between 5.715 GHz and 5.725 GHz; 68.23 dBµV/m below 5.715 GHz

Plot 7.13.70 Radiated emission measurements from 5.825 to 7.25 GHz at the 5.785 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal

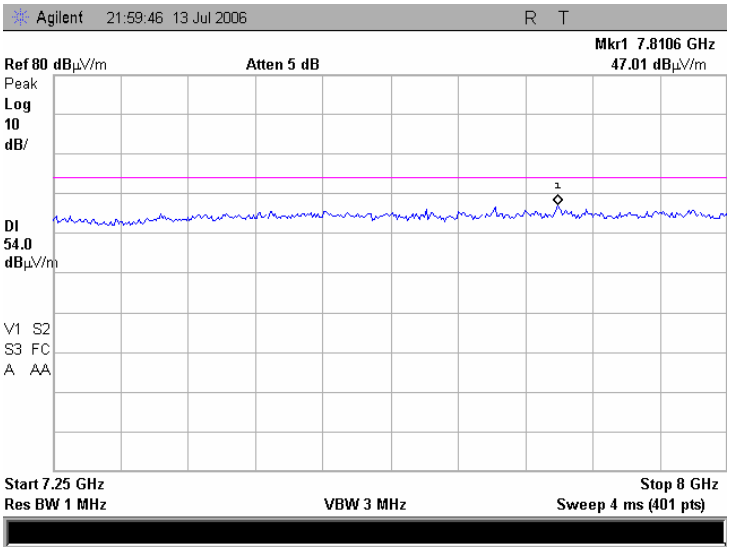


Note: Outside restricted band range (between 5460 MHz and 7250 MHz) the limit is 78.23 dBµV/m between 5.825 GHz and 5.835 GHz; 68.23 dBµV/m above 5.835 GHz

Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

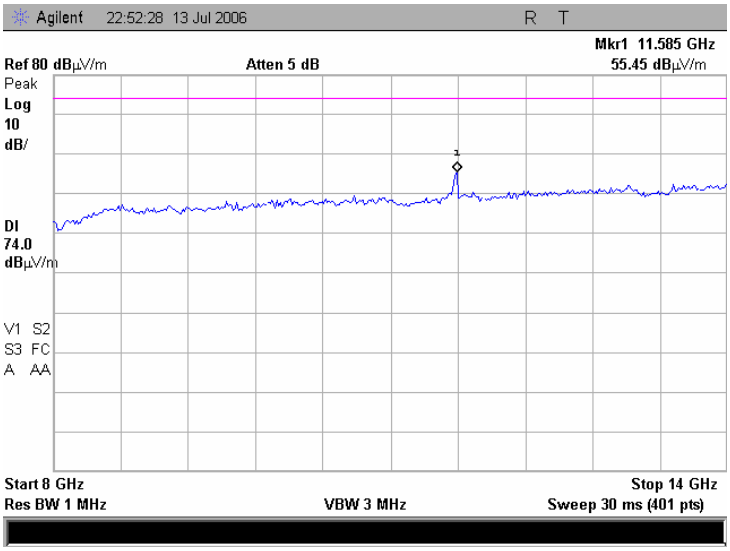
Plot 7.13.71 Radiated emission measurements from 7.25 to 8 GHz at the 5.785GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.72 Radiated emission measurements from 8 to 14 GHz at the 5.785 GHz carrier frequency

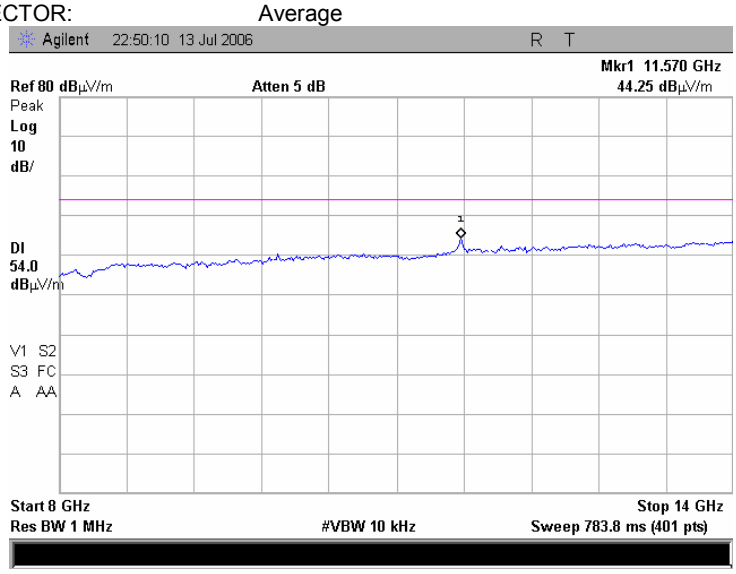
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

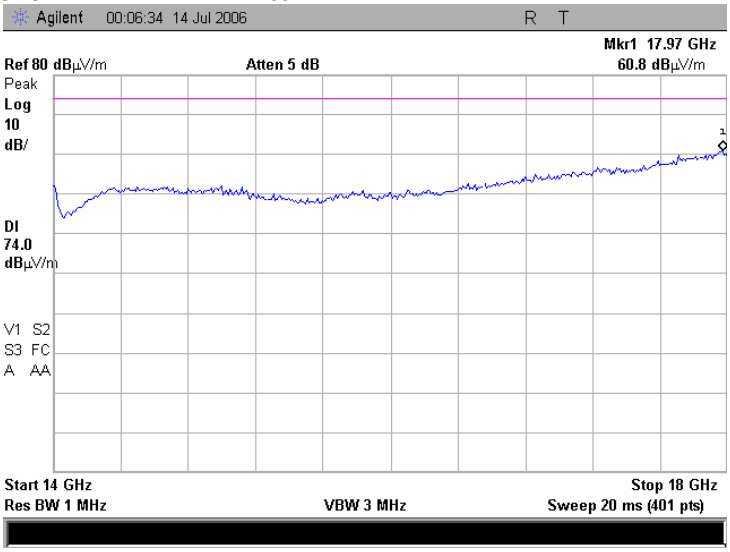
Plot 7.13.73 Radiated emission measurements from 8 to 14 GHz at the 5.785 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.74 Radiated emission measurements from 14 to 18 GHz at the 5.785GHz carrier frequency

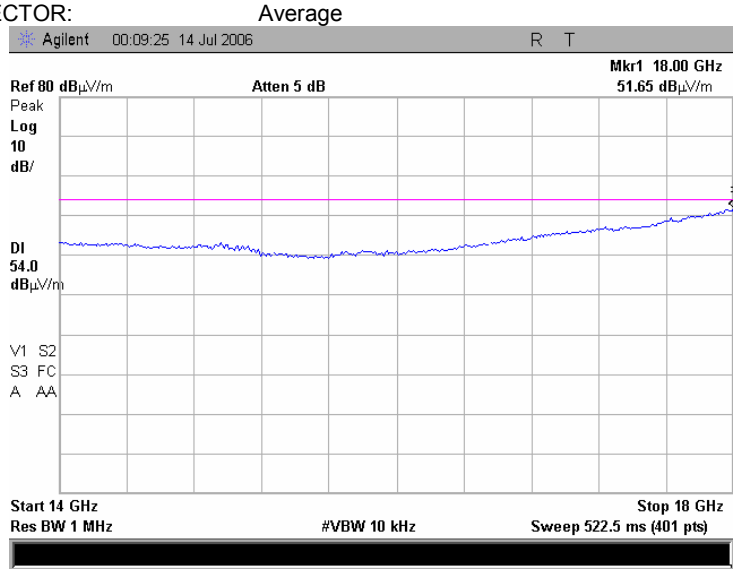
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

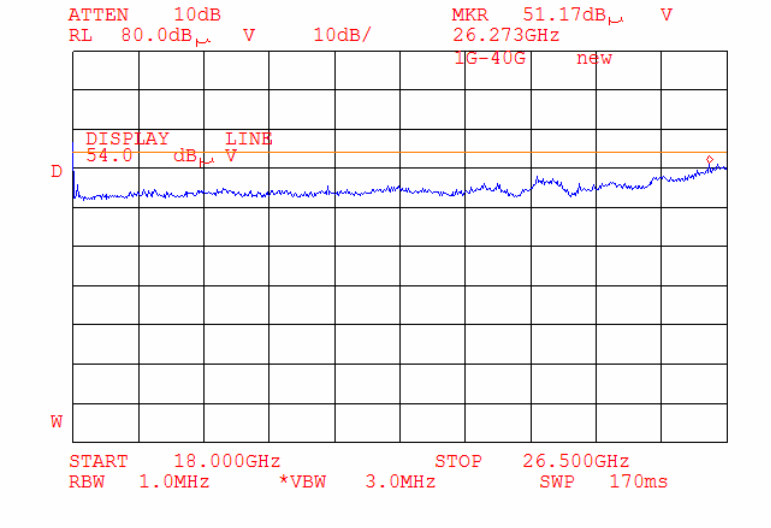
Plot 7.13.75 Radiated emission measurements from 14 to 18 GHz at the 5.785GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Plot 7.13.76 Radiated emission measurements from 18 to 26.5 GHz at the 5.785GHz carrier frequency

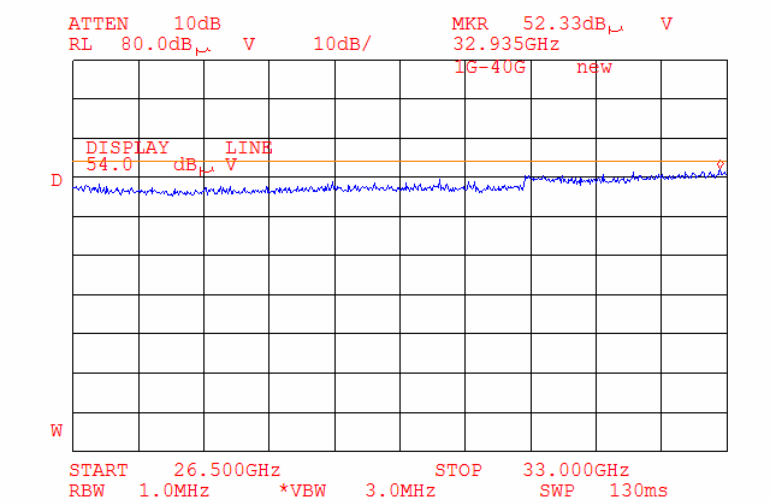
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

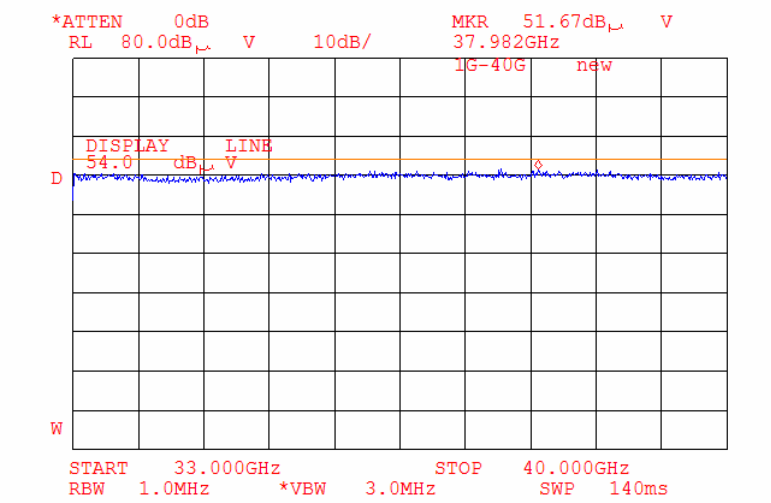
Plot 7.13.77 Radiated emission measurements from 26.5 to 33 GHz at the 5.785GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.78 Radiated emission measurements from 33 to 40 GHz at the 5.785GHz carrier frequency

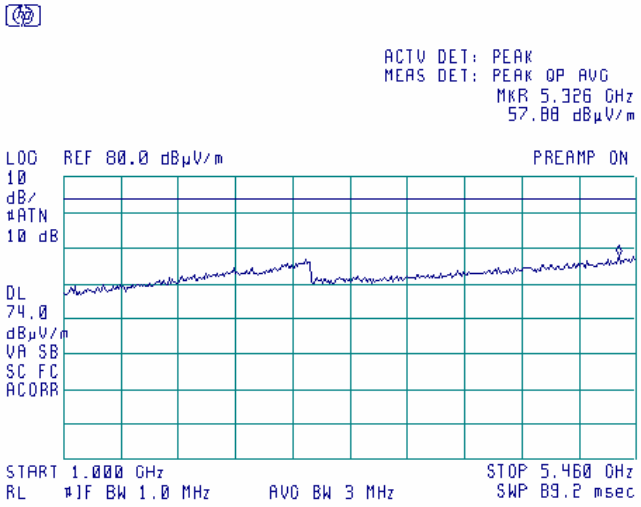
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



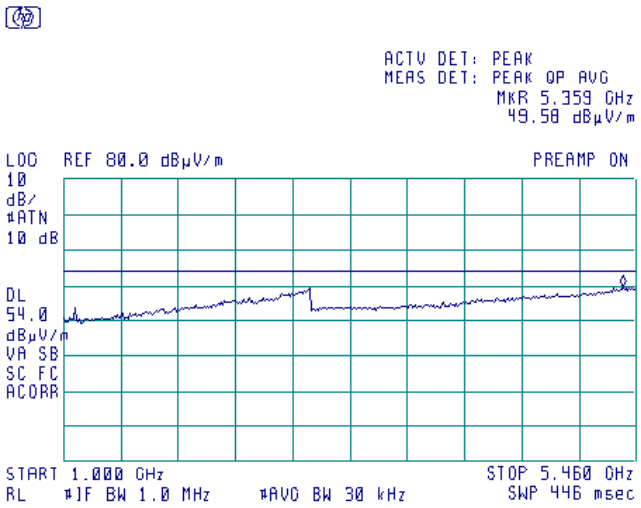
Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.79 Radiated emission measurements from 1.0 to 5.46 GHz at the 5.805 GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



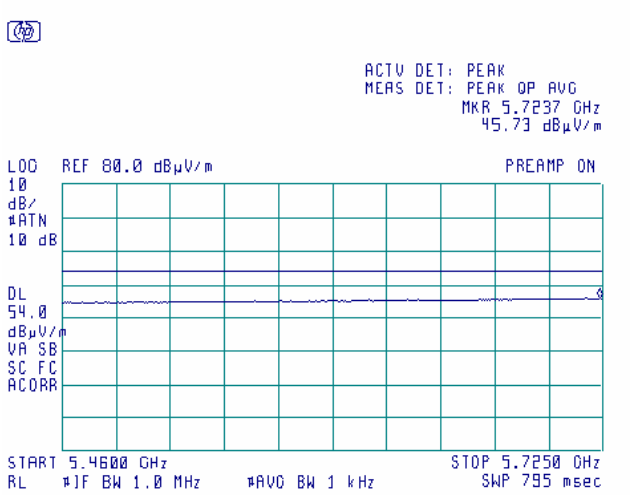
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.80 Radiated emission measurements from 5.46 to 5.725 GHz at the 5.805 GHz carrier frequency

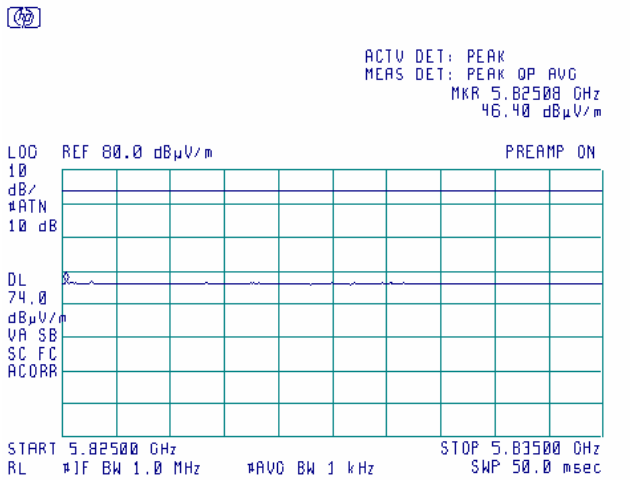
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Note: Outside restricted band range (between 5460 MHz and 7250 MHz) the limit is 78.23 dBµV/m between 5.715 GHz and 5.725 GHz; 68.23 dBµV/m below 5.715 GHz

Plot 7.13.81 Radiated emission measurements from 5.825 to 5.835 GHz at the 5.805 GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal

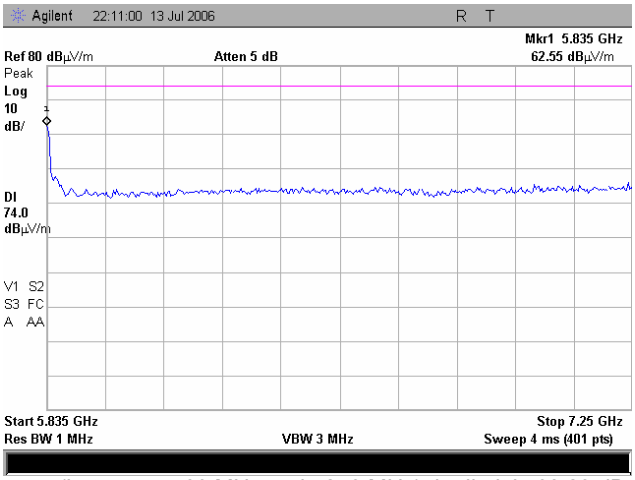


Note: Outside restricted band range (between 5460 MHz and 7250 MHz) the limit is 78.23 dBµV/m between 5.825 GHz and 5.835 GHz.. Settings: RBW = 1 MHz, VBW ≥ 1 / Ton = 1 / 2.1ms = 470 Hz → VBW = 1 kHz

Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.82 Radiated emission measurements from 5.835 to 7.25 GHz at the 5.805 GHz carrier frequency

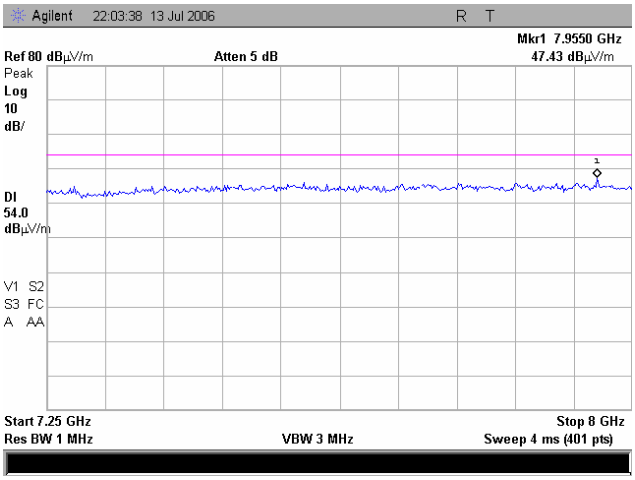
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Note: Outside restricted band range (between 5460 MHz and 7250 MHz) the limit is 68.23 dBµV/m above 5.835 GHz

Plot 7.13.83 Radiated emission measurements from 7.25 to 8.0 GHz at the 5.805GHz carrier frequency

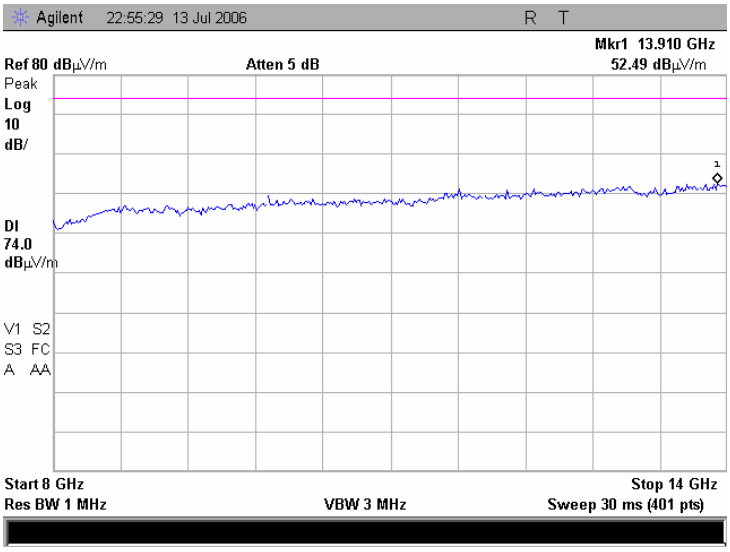
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

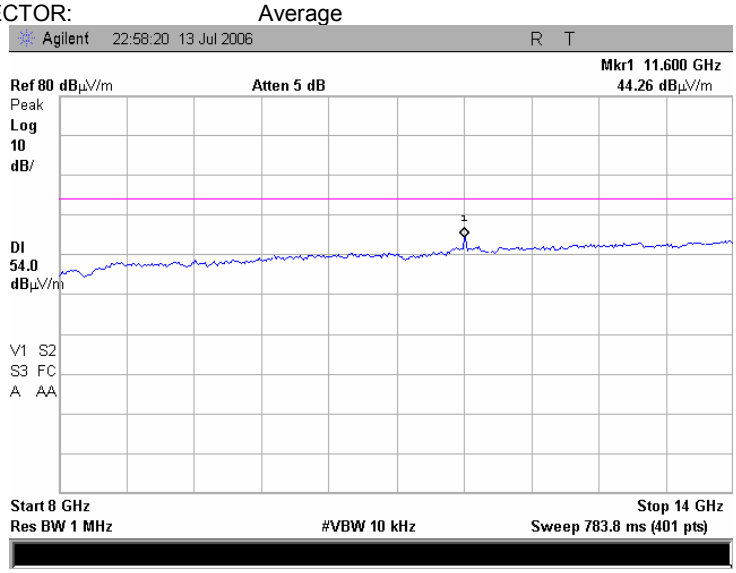
Plot 7.13.84 Radiated emission measurements from 8 to 14 GHz at the 5.805GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.85 Radiated emission measurements from 8 to 14 GHz at the 5.805GHz carrier frequency

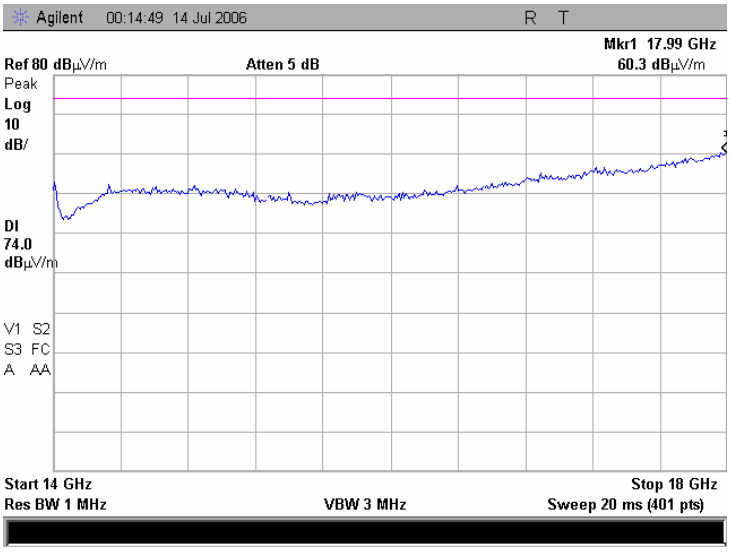
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

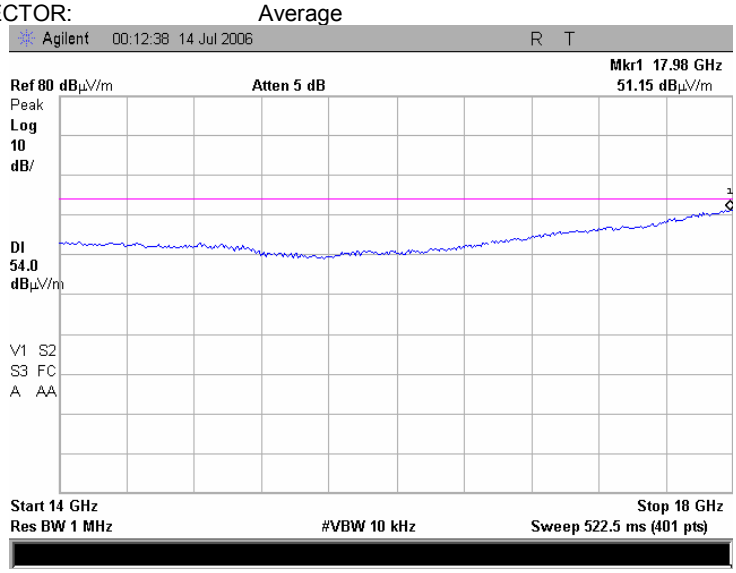
Plot 7.13.86 Radiated emission measurements from 14 to 18 GHz at the 5.805GHz carrier frequency

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Peak



Plot 7.13.87 Radiated emission measurements from 14 to 18 GHz at the 5.805GHz carrier frequency

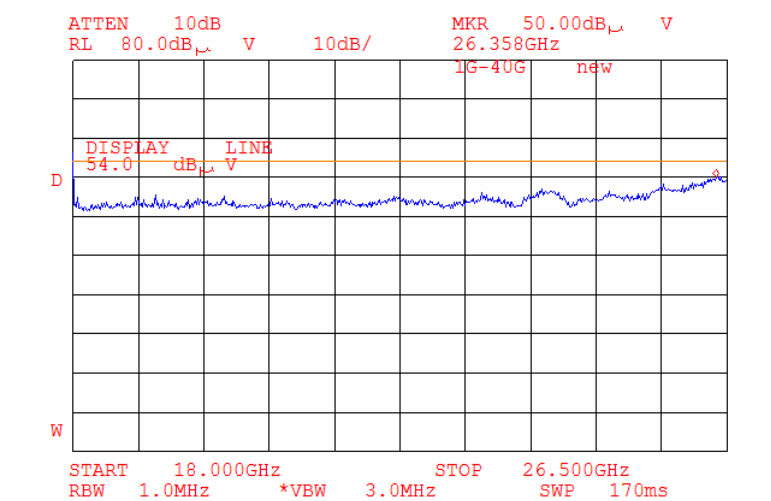
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

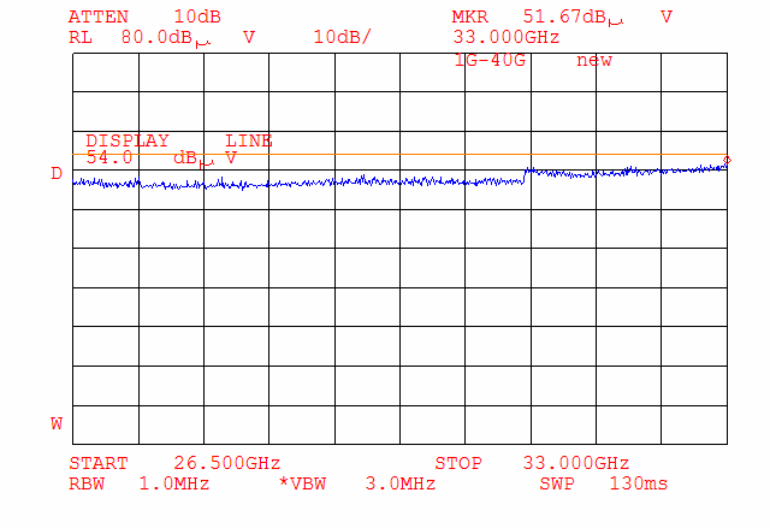
Plot 7.13.88 Radiated emission measurements from 18 to 26.5 GHz at the 5.805GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.89 Radiated emission measurements from 26.5 to 33 GHz at the 5.805GHz carrier frequency

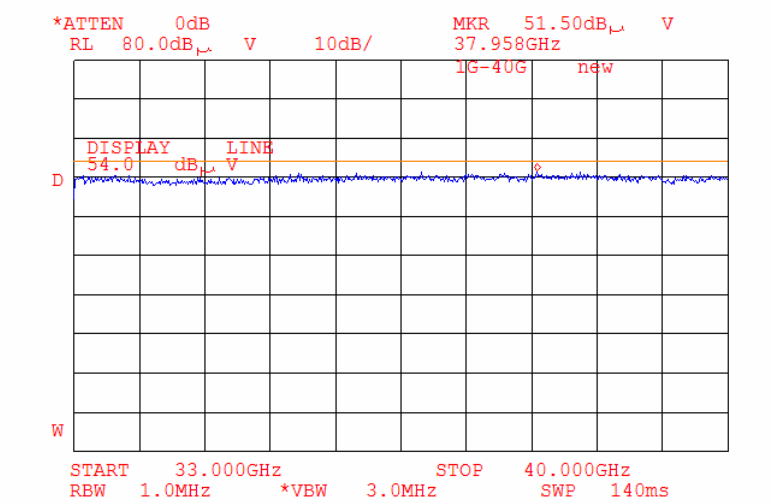
TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

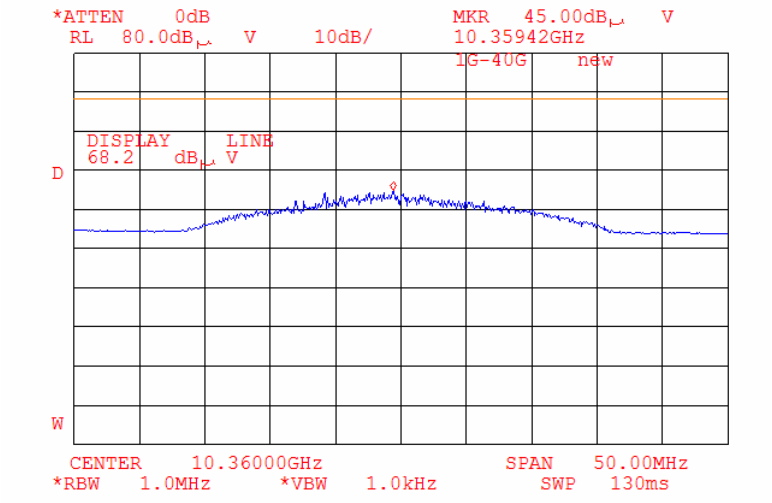
Plot 7.13.90 Radiated emission measurements from 33 to 40 GHz at the 5.805GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.91 Radiated emission measurements at the second harmonic of 5.18GHz carrier frequency

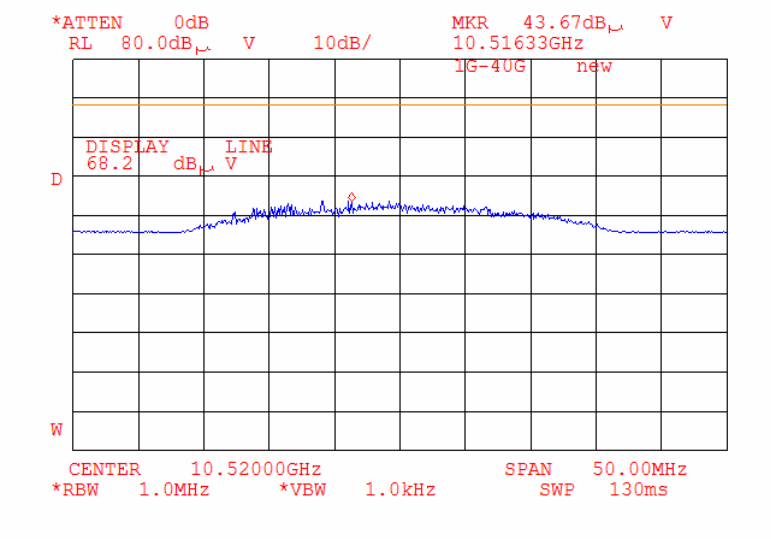
TEST SITE: OATS
TEST DISTANCE: 3 m



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.92 Radiated emission measurements at the second harmonic of 5.26GHz carrier frequency

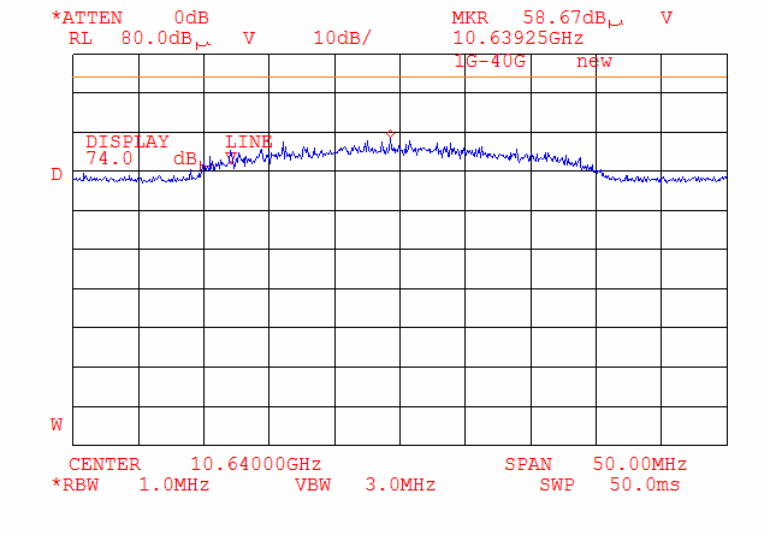
TEST SITE: OATS
TEST DISTANCE: 3 m



Note: outside restricted band emission, limit 68.23 dBµV/m

Plot 7.13.93 Radiated emission measurements at the second harmonic of 5.32GHz carrier frequency

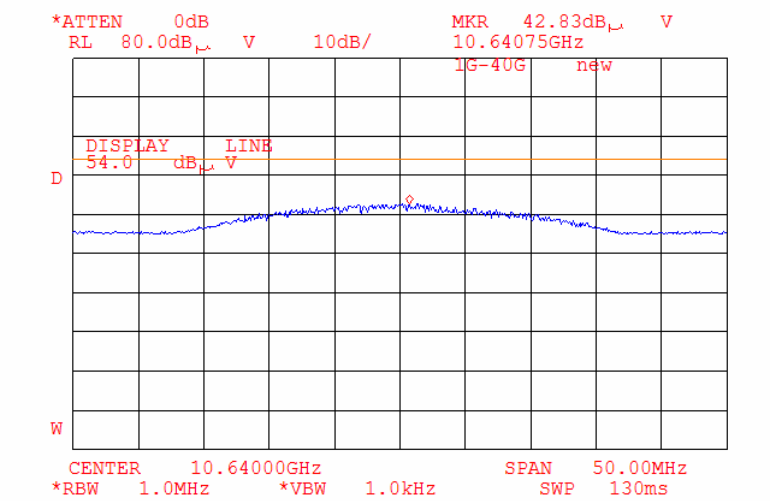
TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

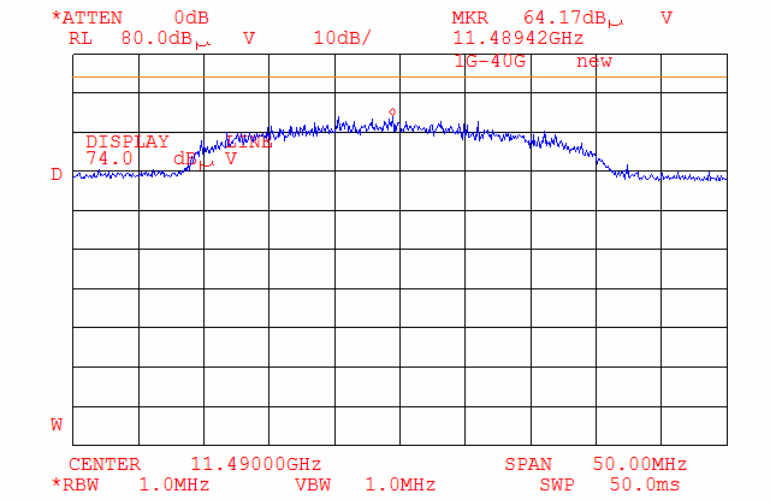
Plot 7.13.94 Radiated emission measurements at the second harmonic of 5.32GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Average



Plot 7.13.95 Radiated emission measurements at the second harmonic of 5.745GHz carrier frequency

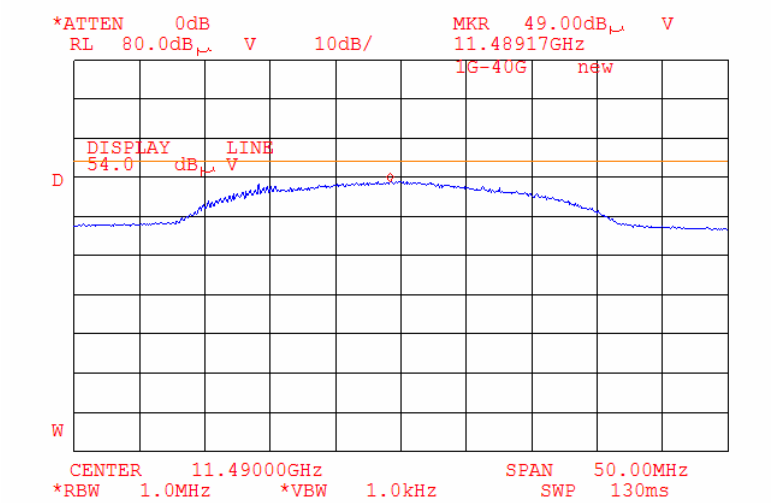
TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

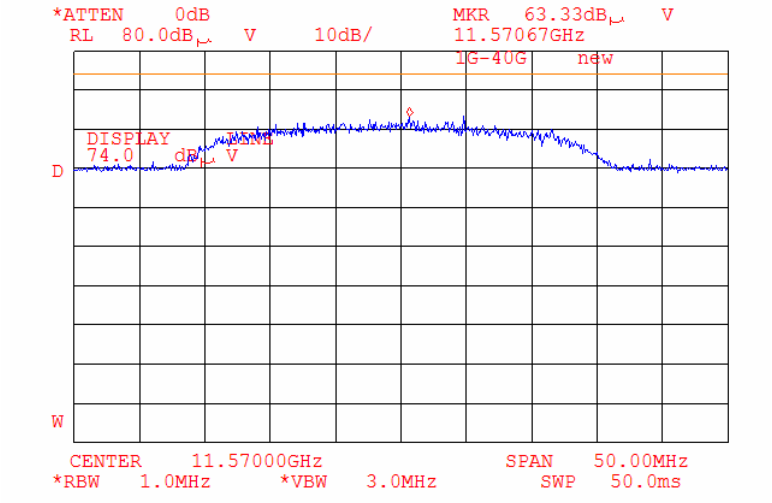
Plot 7.13.96 Radiated emission measurements at the second harmonic of 5.745GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Average



Plot 7.13.97 Radiated emission measurements at the second harmonic of 5.785GHz carrier frequency

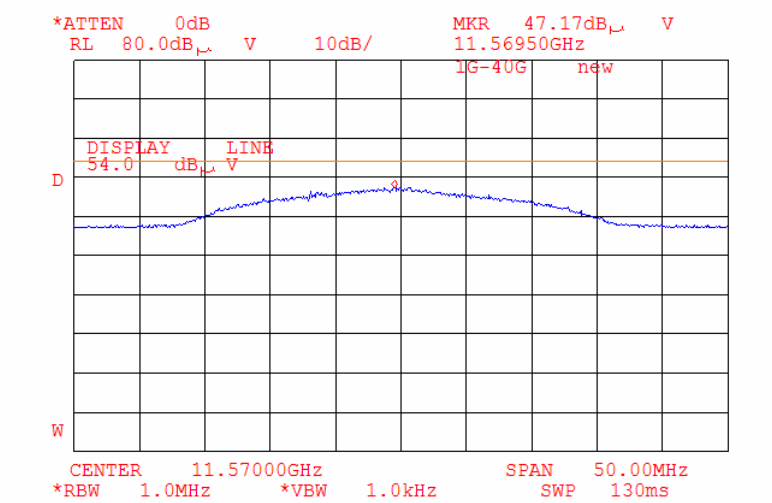
TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

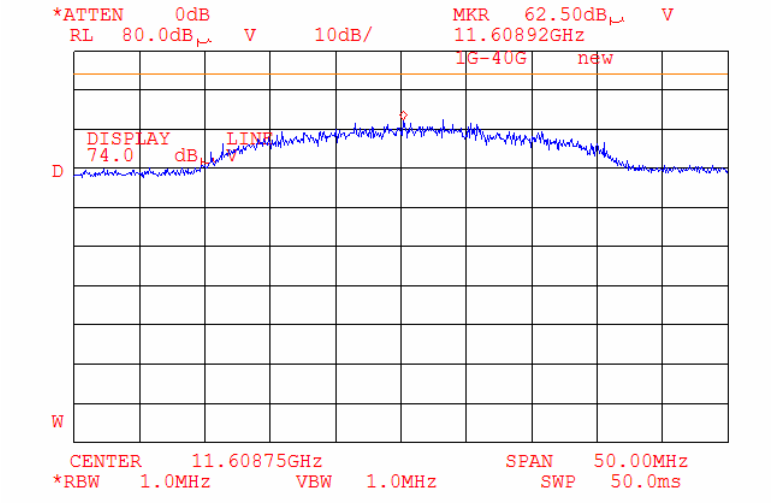
Plot 7.13.98 Radiated emission measurements at the second harmonic of 5.785GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Average



Plot 7.13.99 Radiated emission measurements at the second harmonic of 5.805GHz carrier frequency

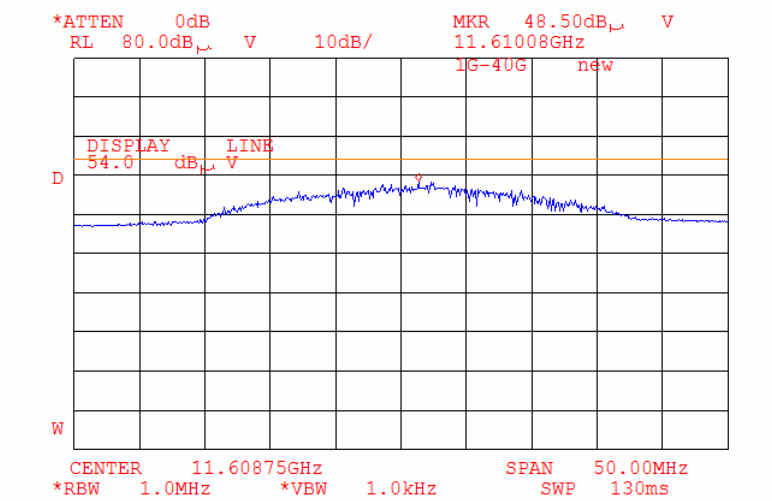
TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Peak



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

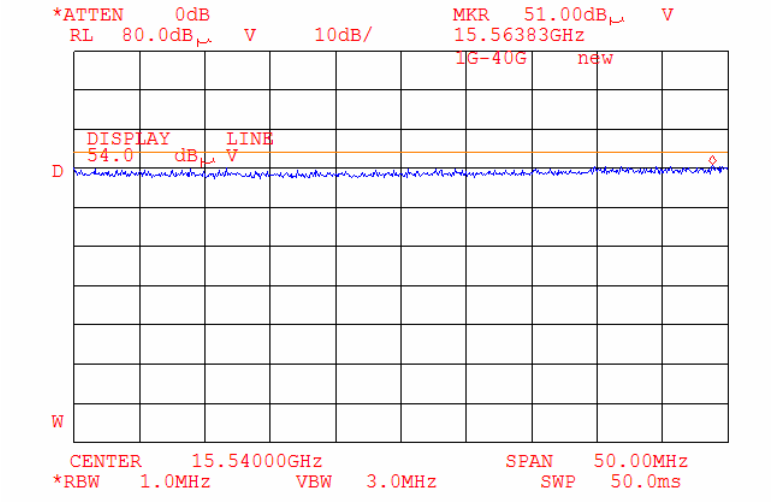
Plot 7.13.100 Radiated emission measurements at the second harmonic of 5.805GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Average



Plot 7.13.101 Radiated emission measurements at the third harmonic of 5.18GHz carrier frequency

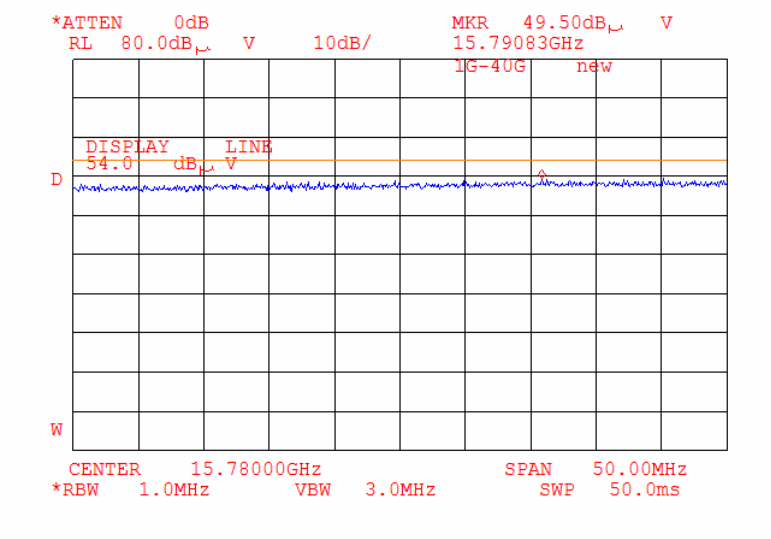
TEST SITE: OATS
TEST DISTANCE: 3 m



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

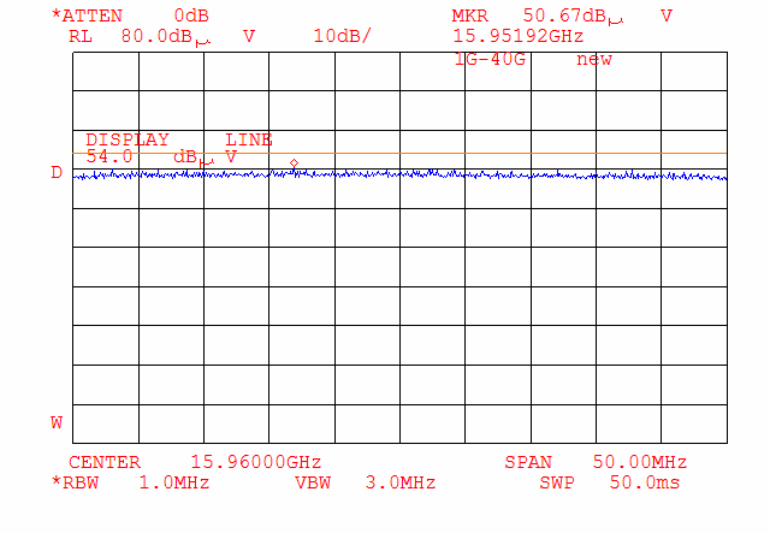
Plot 7.13.102 Radiated emission measurements at the third harmonic of 5.26GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m



Plot 7.13.103 Radiated emission measurements at the third harmonic of 5.32GHz carrier frequency

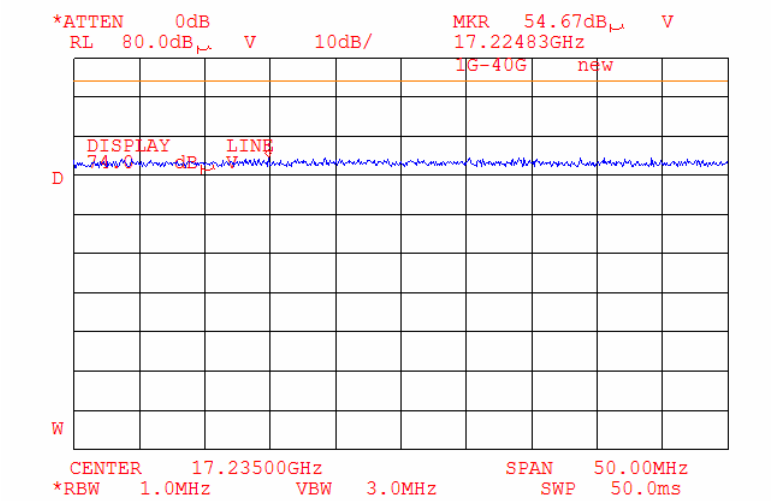
TEST SITE: OATS
TEST DISTANCE: 3 m



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

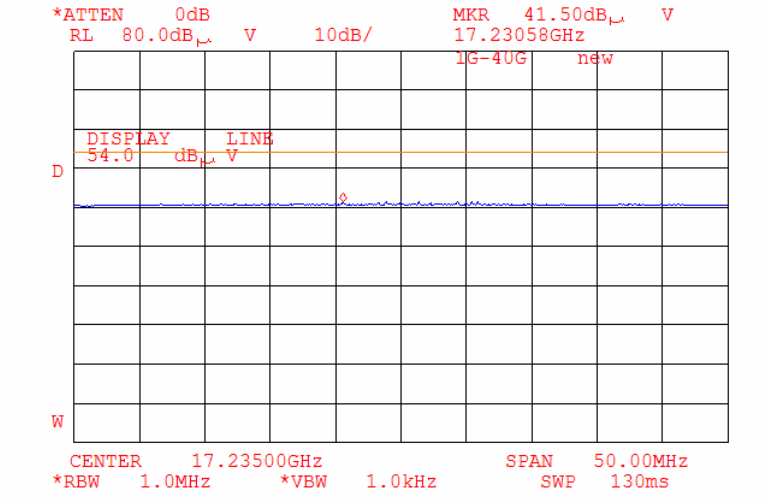
Plot 7.13.104 Radiated emission measurements at the third harmonic of 5.745GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Peak



Plot 7.13.105 Radiated emission measurements at the third harmonic of 5.745GHz carrier frequency

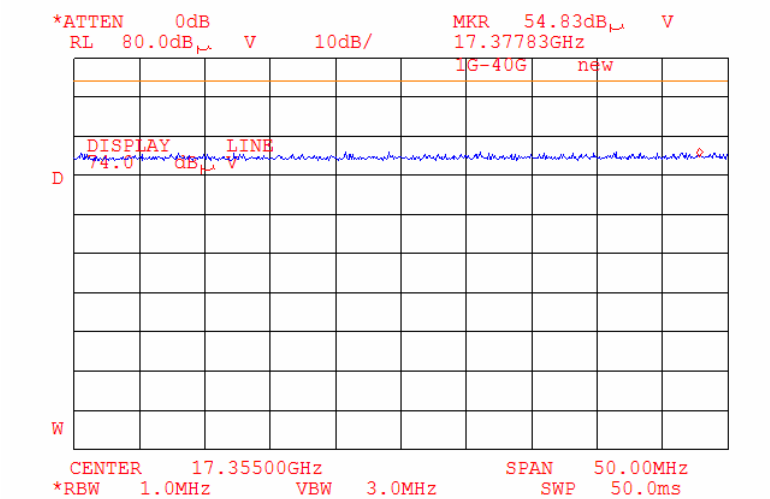
TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

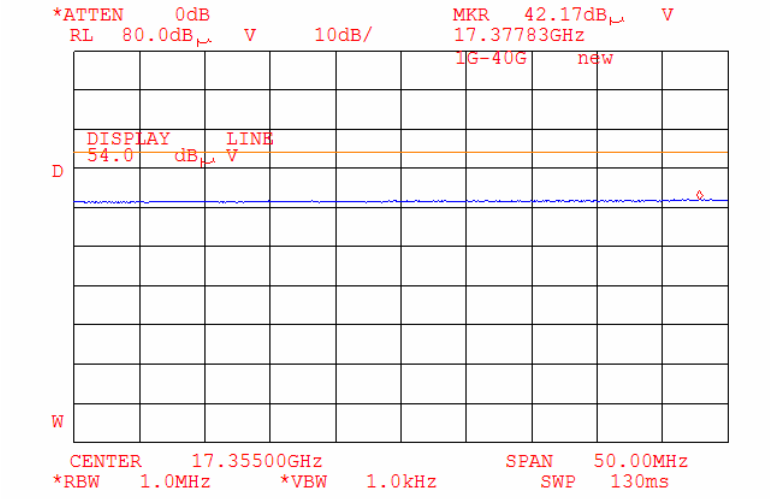
Plot 7.13.106 Radiated emission measurements at the third harmonic of 5.785GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Peak



Plot 7.13.107 Radiated emission measurements at the third harmonic of 5.785GHz carrier frequency

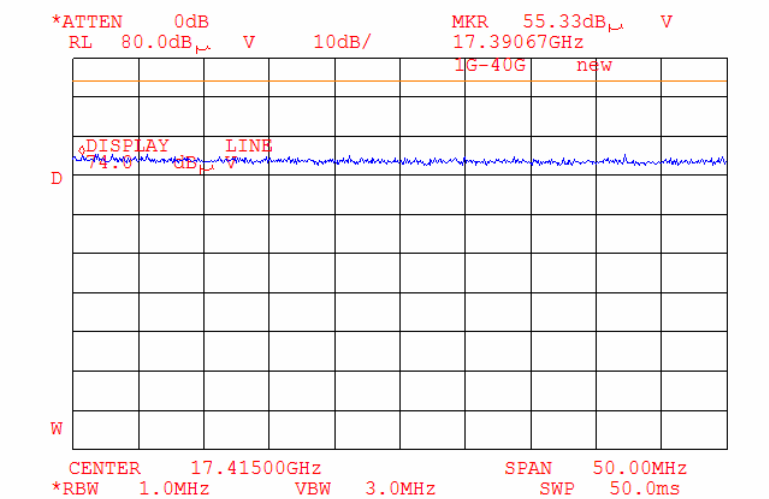
TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

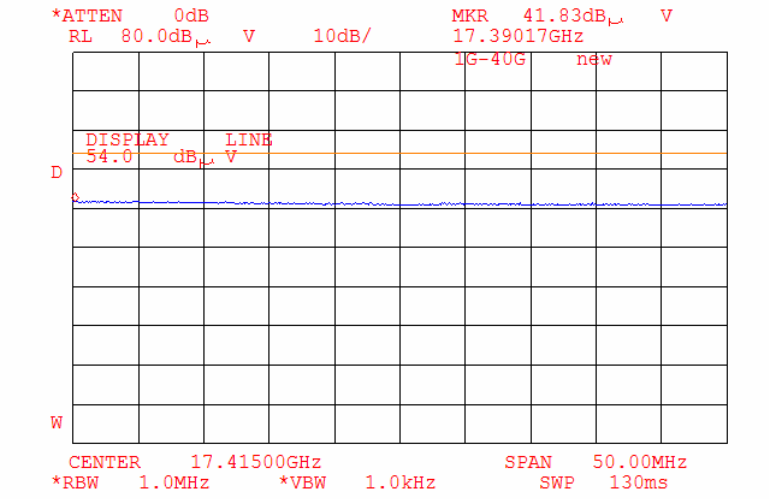
Plot 7.13.108 Radiated emission measurements at the third harmonic of 5.805GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Peak



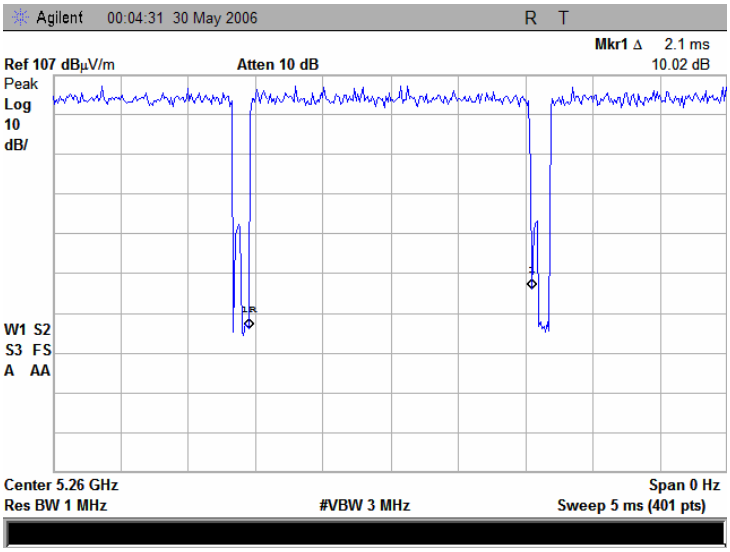
Plot 7.13.109 Radiated emission measurements at the third harmonic of 5.805GHz carrier frequency

TEST SITE: OATS
TEST DISTANCE: 3 m
DETECTOR: Average



Test specification:	Section 15.407(b), Unwanted radiated emissions		
Test procedure:	Public notice DA 00-705/ 47 CFR, Section 15.247(c) / ANSI C63.4, Section 13.1.4		
Test mode:	Compliance	Verdict:	PASS
Date:	07/04/2006		
Temperature: 23 ºC	Air Pressure: 1010 hPa	Relative Humidity: 45%	Power Supply: 48 VDC
Remarks: 802.11 a only			

Plot 7.13.110 Transmission burst duration



Plot 7.13.111 Transmission burst period