

# TEST REPORT

ACCORDING TO: FCC CFR 47 Part 15 subpart E, subpart B

FOR:

**Alvarion Ltd.**

**WiMAX base station**

**Model: BreezeMAX Extreme 5.3GHz**

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## 1 Applicant information

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**Contact name:** Mr. Sergiu Iordanescu

## 2 Equipment under test attributes

**Product name:** WiMAX base station  
**Product type:** Transceiver  
**Model(s):** BreezeMAX Extreme 5.3GHz  
**Serial number:** 90047967 - RF head 1 (with antenna 1),  
90047969 - RF head 2 (with antenna 2)  
**Receipt date:** 9/1/2009

## 3 Manufacturer information

**Manufacturer name:** Alvarion Ltd.  
**Address:** 21A Habarzel street, Ramat Hachayal, Tel Aviv 69710, Israel  
**Telephone:** +972 3645 7859  
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**E-Mail:** sergiu.iordanescu@alvarion.com  
**Contact name:** Mr. Sergiu Iordanescu

## 4 Test details

**Project ID:** 19997  
**Location:** Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel  
**Test started:** 9/1/2009  
**Test completed:** 11/13/2009  
**Test specification(s):** FCC 47CFR Part 15 subpart E; subpart B



### 5 Tests summary

Test	Status
FCC Section 15.407(a)(2), Occupied 26 dB bandwidth	Measured
FCC Section 15.407(a)(2), Maximum peak output power	Pass
FCC Section 15.407(a)(2), Peak power spectral density	Pass
FCC Section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power	Pass
FCC Section 15.407(b)(2), Unwanted radiated emission	Pass
FCC Section 15.407(b)(2), Unwanted conducted emission	Pass
FCC Section 15.407(b)(6), 15.207, Conducted emission	Pass
FCC Section 15.407(f), RF exposure	Pass
FCC Section 15.407(g), Frequency stability	Pass

The 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.

	Name and Title	Date	Signature
<b>Tested by:</b>	Mr. L. Markel, test engineer	November 13, 2009	
<b>Reviewed by:</b>	Mrs. M. Cherniavsky, certification engineer	November 23, 2009	
<b>Approved by:</b>	Mr. M. Nikishin, EMC and Radio group leader	December 9, 2009	



## 6 EUT description

### 6.1 General information

The EUT, base station, is a part of BreezeMAX Extreme 5.3GHz high capacity, IP services oriented Broadband Wireless Access system. The BreezeMAX Extreme 5.3GHz is digital modulated TDD system which contains a base station unit and a subscriber unit.

The basic base station system configuration is all outdoor-box configurations that contain a power supply, a MODEM and the radio part.

### 6.2 EUT modules and sub-assemblies

Description	Manufacturer	Model or P/N	Hardware rev.	Serial number
AC power adaptor	PS1126-01	0525B5570	A	A30906120564

### 6.3 EUT options/configurations

Number	Operating mode description
Transmit	MIMO transmitting mode via both Tx chains/SISO transmit mode via each chain
Option 1	EUT powered via AC power adaptor 120 VAC to 55VDC
Option 2	EUT powered via external 48VDC PS

### 6.4 Ports and lines

Port type	Port description	Conn. from	Conn. to	Qty.	Cable type	Cable length	Indoor / outdoor
RF	Antenna	Base station	Termination	2	Coax	NA	Outdoor
RF GPS	Antenna GPS	Base station	Antenna external	1	Coax	15 m	Outdoor
Signal	GPS In/Out	Base station (GPS Out)	Base station (GPS In)	1	Shielded	2 m	Outdoor
Option 1							
Power	AC power	AC mains	Power adaptor	1	Unshielded	1.5 m	Indoor
Signal	DATA/DC	Power adaptor	Base station	1	Shielded	3 m	Outdoor
Power	DC power	Base station (DC in)	Open circuit	1	Shielded	20 m	Outdoor
Signal	Ethernet	Power adaptor	Laptop	1	Unshielded	10 m	Indoor
Option 2							
Power	DC power	48 VDC supply	Base station (DC in)	1	Shielded	20 m	Outdoor
Signal	Ethernet	Base station	Laptop	1	Shielded	10 m	Outdoor

### 6.5 Support and test equipment

Description	Manufacturer	Model number	Serial number
Laptop	Lenovo	T60	L3-DZK37-07/01



### 6.6 Operating frequencies

Source	Frequency, MHz
Tx/Rx	5260.0 - 5340.0
LO	4440.0 – 4540.0

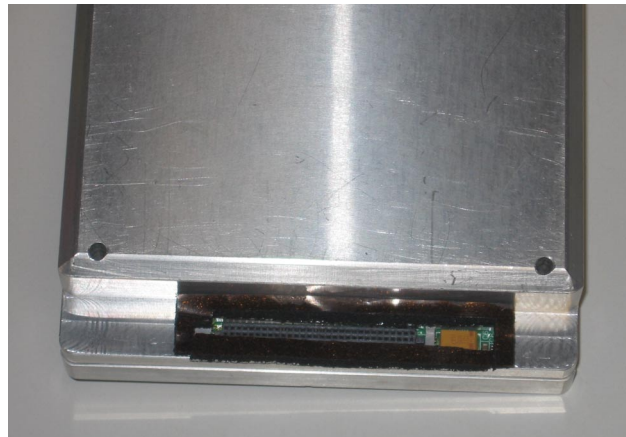
### 6.7 Changes made in the EUT

To withstand the standard requirements the following changes were implemented in the EUT:

- 1) An absorber material was installed around the RF head connector as shown in Photograph 6.7.1;
- 2) The 10 MHz clock of GPS synchronization was disabled.

It is manufacturer responsibility to implement the change in the production version of the EUT. In any case the test report applies to the tested item only.

**Photograph 6.7.1 RF head connector**

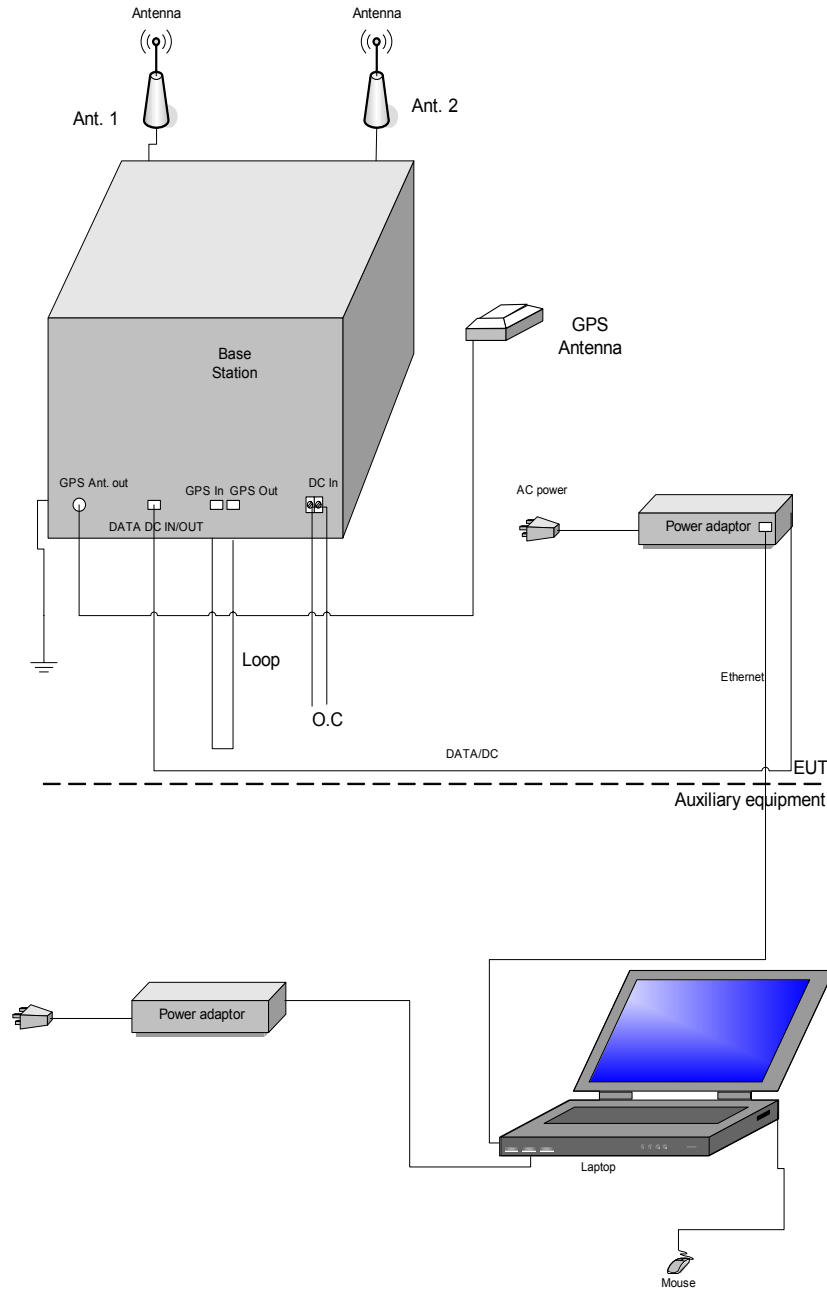




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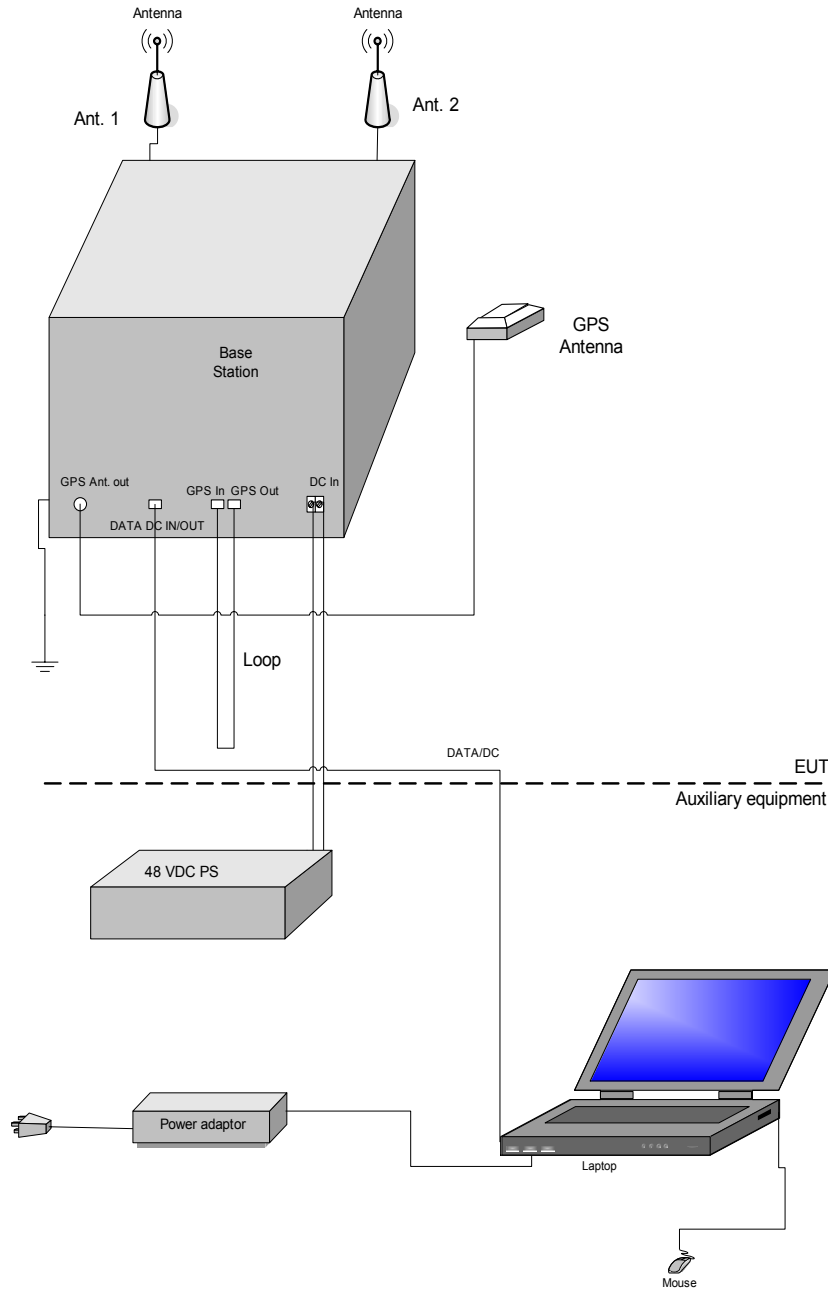
## 6.8 Test configuration

### Option 1





Option 2





### 6.9 Transmitter characteristics

<b>Type of equipment</b>						
<b>V</b>	Stand-alone (Equipment with or without its own control provisions)					
	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)					
<b>Intended use</b>		<b>Condition of use</b>				
<b>V</b>	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				
<b>Assigned frequency range</b>		5250.0 – 5350.0 MHz				
<b>Operating frequency range</b>		5260.0 – 5340.0 MHz for 5 MHz EBW 5265.0 – 5335.0 MHz for 10 MHz EBW				
<b>RF channel spacing</b>		2.5 MHz for 5MHz BW, 5MHz for 10MHz BW				
<b>Maximum rated output power</b>		At transmitter 50 Ω RF output connectors			18.75 dBm in SISO mode 18.45 dBm in MIMO mode	
<b>Is transmitter output power variable?</b>		No				
		<b>V</b>	Yes	continuous variable		
				stepped variable with stepsize	1 dB	
				minimum RF power	0 dBm	
				maximum RF power	18.75 dBm	
<b>Antenna connection</b>						
unique coupling	standard connector	<b>V</b>	Integral	<b>V</b>	with temporary RF connector without temporary RF connector	
<b>Antenna/s technical characteristics</b>						
Type	Manufacturer	Model number		Gain		
Integral antenna, dual slant	PCTEL, Inc.	AN1428-02		14.5 dBi		
External sector antenna	MTI Wireless Edge, Ltd.	AL-484032/NV		17 dBi, feeder loss 0.7 dB		
External omni directional antenna	MTI Wireless Edge, Ltd.	AL-462008/N		9.5 dBi, feeder loss 0.7 dB		
Omni directional antenna	MTI Wireless Edge, Ltd.	MT-481003/NV		5.5±1 dB, feeder loss 0.7 dB		
<b>Transmitter 99% power bandwidth</b>		5 MHz, 10 MHz				
<b>Transmitter aggregate data rate/s</b>		9.36 Mbps @ 64QAM5/6 for 5MHz BW; 18.72 Mbps @ 64QAM5/6 for 10MHz BW				
<b>Transmitter aggregate symbol (baud) rate/s</b>		1.56 Msps @ 64QAM5/6 for 5MHz BW; 3.12 Msps @ 64QAM5/6 for 10MHz BW				
<b>Type of modulation</b>		QPSK, 16QAM, 64QAM				
<b>Type of multiplexing</b>		OFDMA				
<b>Modulating test signal (baseband)</b>		PRBS				
<b>Maximum transmitter duty cycle in normal use</b>		60 %	<b>Tx ON time</b>	3 msec	<b>Period</b>	5 msec
<b>Transmitter duty cycle supplied for test</b>		100 %	<b>Tx ON time</b>		<b>Period</b>	
<b>Transmitter power source</b>						
		<b>Nominal rated voltage</b>		<b>Battery type</b>		
<b>V</b>	DC	<b>Nominal rated voltage</b>		48 V (option 2)		
<b>V</b>	AC mains	<b>Nominal rated voltage</b>		<b>Frequency</b>	60 Hz	
<b>Common power source for transmitter and receiver</b>			<b>V</b>	yes	no	



<b>Test specification: FCC section 15. 407(a)(2), 26 dB bandwidth</b>			
<b>Test procedure:</b> FCC New Guidance on Measurements for DTS in section 15.247(a)(2)			
<b>Test mode:</b> Compliance	<b>Verdict: PASS</b>		
<b>Date &amp; Time:</b> 9/21/2009 3:58:40 PM			
<b>Temperature:</b> 25°C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

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

### 7.1 The 26 dB bandwidth

#### 7.1.1 General

This test was performed to measure 26 dB bandwidth of the EUT carrier frequency. Specification test limits are given in Table 7.1.1.

Table 7.1.1 The 26 dB bandwidth limits

Assigned frequency, MHz	Modulation envelope reference points*, dBc	Minimum bandwidth, kHz
5250.0 – 5350.0	26.0	NA

\* - Modulation envelope reference points provided in terms of attenuation below the peak of modulated carrier.

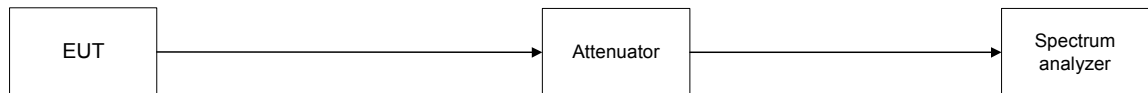
#### 7.1.2 Test procedure

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.

7.1.2.3 The transmitter minimum 26 dB bandwidth was measured with spectrum analyzer RBW=1% of EBW as frequency delta between reference points on modulation envelope and provided in Table 7.1.2 and the associated plots.

Figure 7.1.1 The 26 dB bandwidth test setup





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<b>Test specification:</b> FCC section 15. 407(a)(2), 26 dB bandwidth			
<b>Test procedure:</b> FCC New Guidance on Measurements for DTS in section 15.247(a)(2)			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/21/2009 3:58:40 PM			
<b>Temperature:</b> 25°C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Table 7.1.2 The 26 dB bandwidth test results

ASSIGNED FREQUENCY BAND: 5250.0 – 5350.0 MHz  
 DETECTOR USED: Peak  
 SWEEP MODE: Single  
 SWEEP TIME: Auto  
 RESOLUTION BANDWIDTH: 1% of the EBW  
 VIDEO BANDWIDTH: 3000 kHz  
 MODULATION ENVELOPE REFERENCE POINTS: 26 dBc  
 MODULATING SIGNAL: PRBS  
 EBW: 5 MHz

Carrier frequency, MHz	Modulation	26 dB bandwidth, MHz
Low frequency		
5260.00	64QAM	4.905
Mid frequency		
5300.00	64QAM	4.905
High frequency		
5340.00	64QAM	4.905

EBW: 10 MHz

Carrier frequency, MHz	Modulation	26 dB bandwidth, MHz
Low frequency		
5265.00	64QAM	9.51
Mid frequency		
5300.00	64QAM	9.51
High frequency		
5335.00	64QAM	9.51

Reference numbers of test equipment used

HL 2909	HL 2952	HL 3440						
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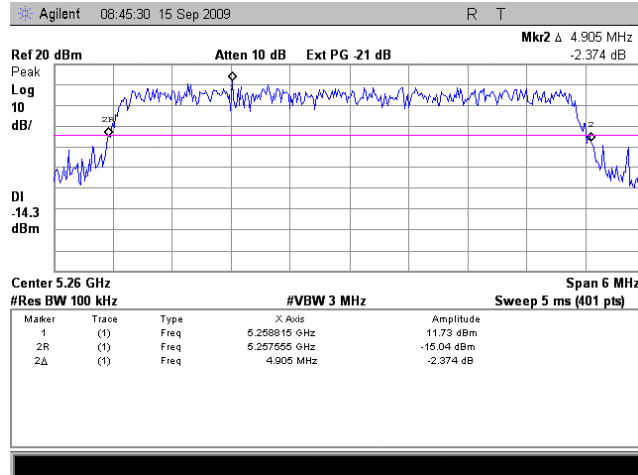
Full description is given in Appendix A.



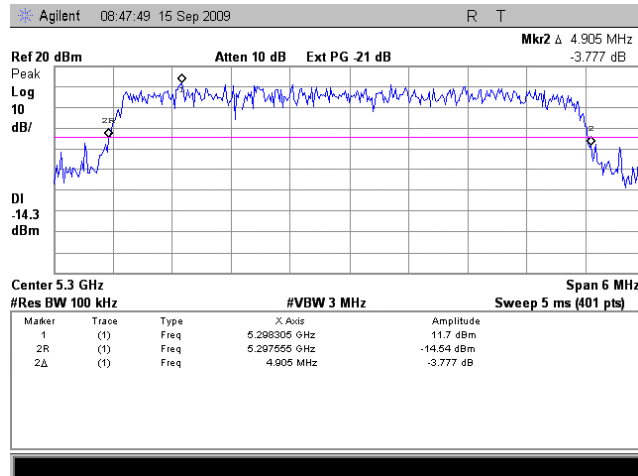
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<b>Test specification: FCC section 15. 407(a)(2), 26 dB bandwidth</b>			
<b>Test procedure:</b> FCC New Guidance on Measurements for DTS in section 15.247(a)(2)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:58:40 PM			
<b>Temperature:</b> 25°C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Plot 7.1.1 The 26 dB bandwidth test result at low frequency, 64QAM modulation, 5 MHz EBW



Plot 7.1.2 The 26 dB bandwidth test result at mid frequency, 64QAM modulation, 5 MHz EBW

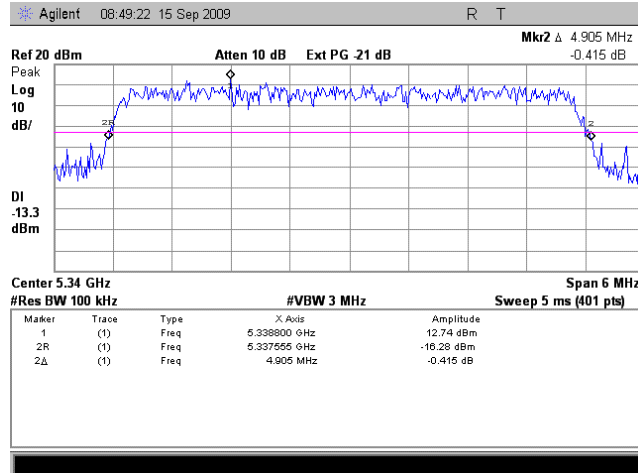




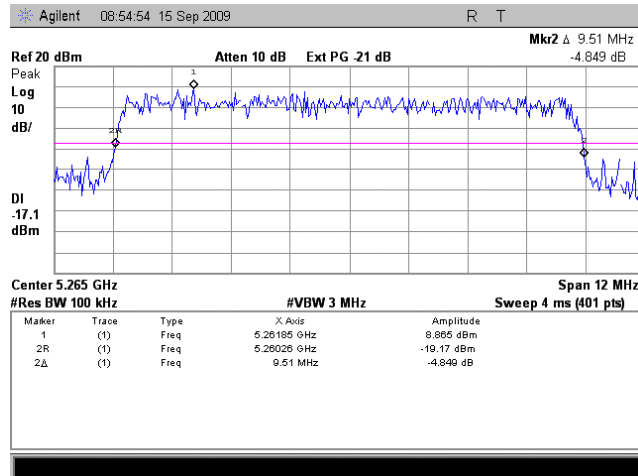
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<b>Test specification: FCC section 15. 407(a)(2), 26 dB bandwidth</b>			
<b>Test procedure:</b> FCC New Guidance on Measurements for DTS in section 15.247(a)(2)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:58:40 PM			
<b>Temperature:</b> 25°C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Plot 7.1.3 The 26 dB bandwidth test result at high frequency, 64QAM modulation, 5 MHz EBW



Plot 7.1.4 The 26 dB bandwidth test result at low frequency, 64QAM modulation, 10 MHz EBW

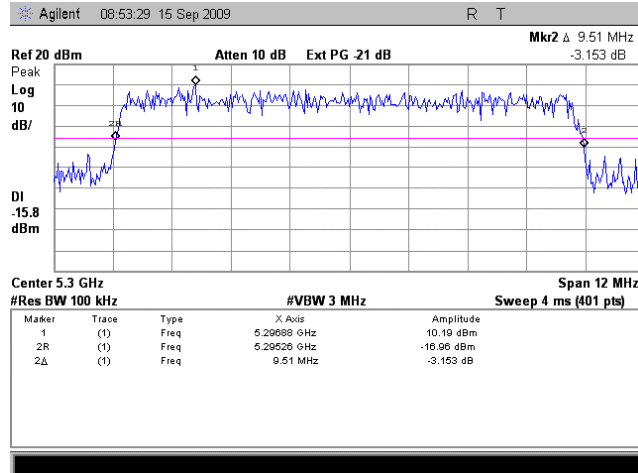




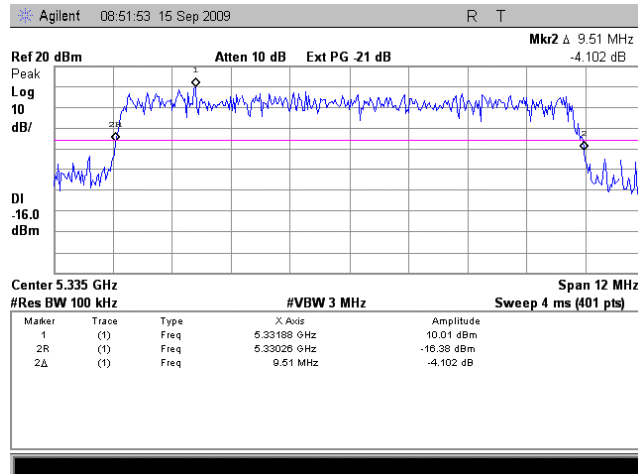
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<b>Test specification: FCC section 15. 407(a)(2), 26 dB bandwidth</b>			
<b>Test procedure:</b> FCC New Guidance on Measurements for DTS in section 15.247(a)(2)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:58:40 PM			
<b>Temperature:</b> 25°C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Plot 7.1.5 The 26 dB bandwidth test result at mid frequency, 64QAM modulation, 10 MHz EBW



Plot 7.1.6 The 26 dB bandwidth test result at high frequency, 64QAM modulation, 10 MHz EBW





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

## 7.2 Peak output power and power spectral density

### 7.2.1 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 7.2.1.

Table 7.2.1 Peak output power and power spectral density limits

Assigned frequency range, MHz	Maximum antenna gain, dBi	Peak output power*	
		W	dBm
5250.0 – 5350.0	6.0	The lesser 250 mW or $11+10\text{LOG}(B^{**}, \text{MHz})$	According to associated tables
		Peak power spectral density*	
		dBm	
		11.0	

\*- If transmitting antennas of directional gain greater than 6 dBi are used, the both peak output power and power density limit shall be reduced below the stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

\*\* - B, MHz – 26 dB EBW

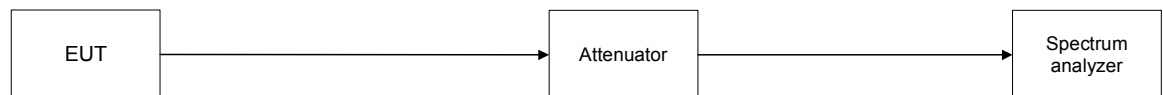
### 7.2.2 Test procedure

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 adjusted to produce maximum available for end user RF output power.

7.2.2.3 The 1 MHz resolution bandwidth of spectrum analyzer was set, VBW was set to 3 MHz and sum across emission bandwidth function was used. Power-averaging mode within 100 sweeps was used for averaging. The maximum power spectral density was measured as provided in associated tables and plots.

Figure 7.2.1 Peak output power test setup







<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Table 7.2.2 Conducted output power test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 9.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 8.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: MIMO

Channel, MHz	26 dB BW MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> dBm*	Antenna assembly gain dBi	EIRP total, dBm**	Limit EIRP, dBm***	Margin, dB****	Verdict
5260.0	4.905	9.31	9.25	12.29	8.80	21.09	23.91	-2.82	Pass
5300.0	4.905	9.74	9.82	12.79	8.80	21.59	23.91	-2.32	Pass
5340.0	4.905	9.42	9.29	12.37	8.80	21.17	23.91	-2.74	Pass

\* - Pmeas, dBm = 10 log(10<sup>^((P(dBm,Ant1)/10)+ 10<sup>^((P(dBm,Ant2)/10))</sup>)</sup>)  
 \*\* - EIRP total, dBm = Pmeas, dBm+ Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

Table 7.2.3 Conducted output power spectral density test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 9.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 8.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 5 MHz  
 MODE: MIMO

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Pmeas (Ant.2), dBm/MHz	P <sub>meas</sub> , dBm/MHz*	Antenna assembly gain dBi	EIRP total, dBm/MHz**	Limit EIRP, dBm/MHz***	Margin, dB****	Verdict
5260.0	4.62	4.49	7.57	8.80	16.37	17.00	-0.63	Pass
5300.0	4.71	4.88	7.81	8.80	16.61	17.00	-0.39	Pass
5340.0	4.34	4.70	7.53	8.80	16.33	17.00	-0.67	Pass

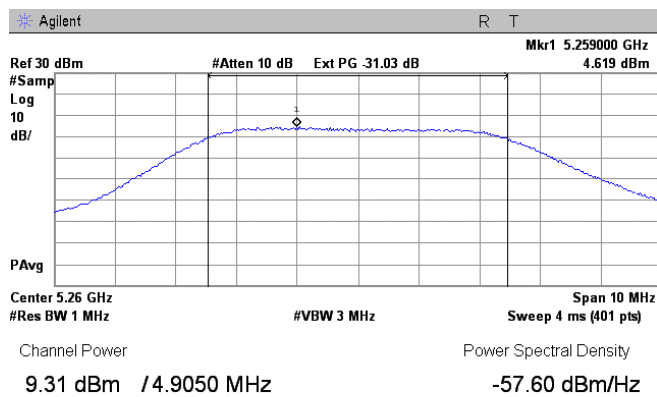
\* - Pmeas, dBm/MHz = 10 log(10<sup>^((P(dBm/MHz,Ant1)/10)+ 10<sup>^((P(dBm/MHz,Ant2)/10))</sup>)</sup>)  
 \*\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz



<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

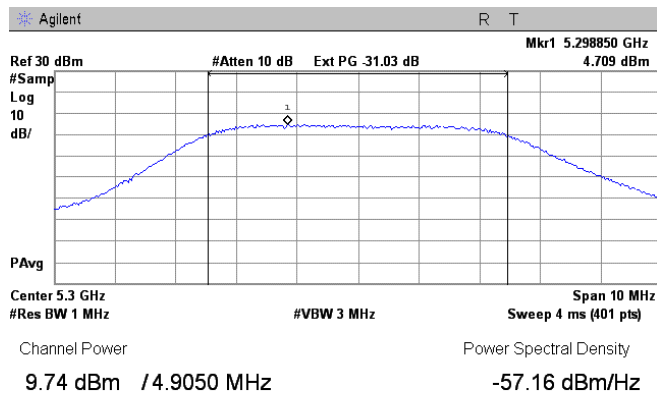
Plot 7.2.1 Peak output power and spectral power density, Antenna 1, 9.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.2 Peak output power and spectral power density, Antenna 1, 9.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



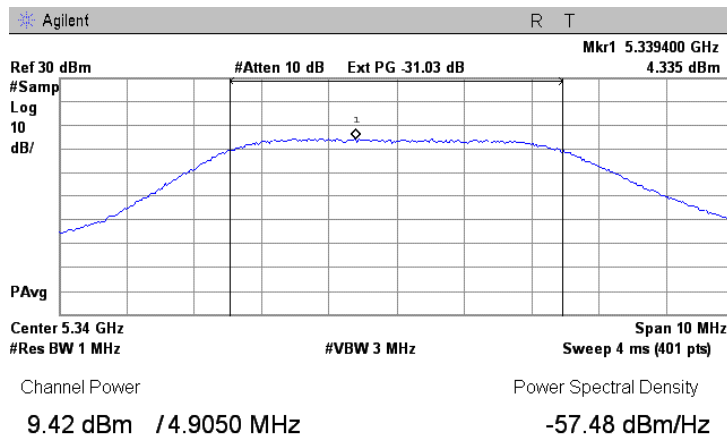


HERMON LABORATORIES

<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance	Verdict: PASS		
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.3 Peak output power and spectral power density, Antenna 1, 9.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



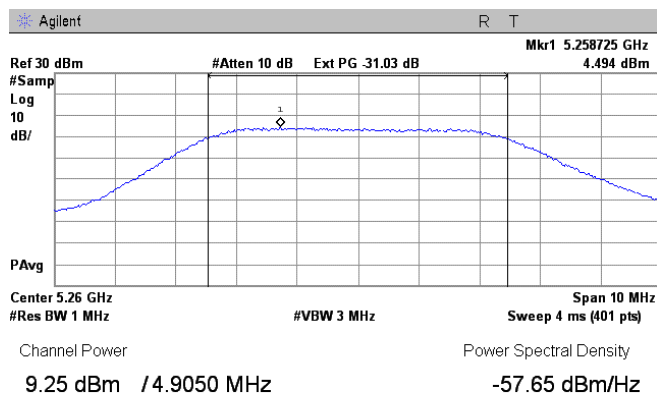


HERMON LABORATORIES

<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

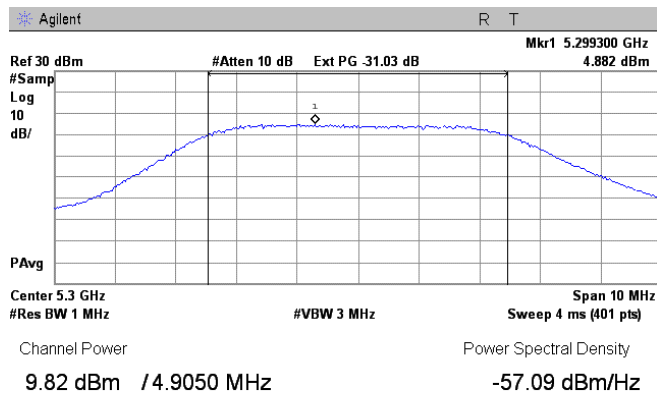
Plot 7.2.4 Peak output power and spectral power density, Antenna 2, 9.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.5 Peak output power and spectral power density, Antenna 2, 9.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



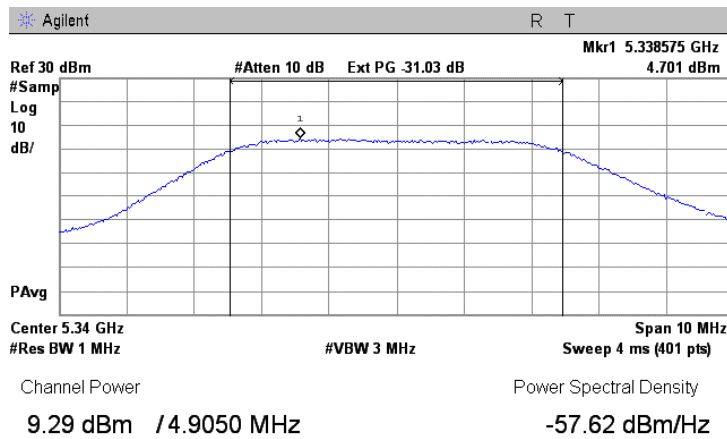


HERMON LABORATORIES

<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance	Verdict: PASS		
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.6 Peak output power and spectral power density, Antenna 2, 9.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Table 7.2.4 Conducted output power test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 14.5 dBi  
 MODE: MIMO

Channel, MHz	26 dB BW MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> , dBm*	Antenna gain, dBi	EIRP total, dBm**	Limit EIRP, dBm***	Margin, dB****	Verdict
5260.0	4.905	3.59	3.81	6.71	14.5	21.21	23.91	-2.70	Pass
5300.0	4.905	3.89	3.56	6.74	14.5	21.24	23.91	-2.67	Pass
5340.0	4.905	3.76	2.98	6.40	14.5	20.90	23.91	-3.01	Pass

\* - Pmeas, dBm = 10 log(10<sup>^(P(dBm,Ant1)/10)</sup>+ 10<sup>^(P(dBm,Ant2)/10)</sup>)

\*\* - EIRP total, dBm = Pmeas, dBm + Antenna Gain, dBi

\*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi

\*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

Table 7.2.5 Conducted output power spectral density test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 14.5 dBi  
 EBW: 5 MHz  
 MODE: MIMO

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Pmeas (Ant.2), dBm/MHz	P <sub>meas</sub> , dBm/MHz*	Antenna gain, dBi	EIRP total, dBm/MHz**	Limit EIRP, dBm/MHz***	Margin, dB****	Verdict
5260.0	-1.42	-1.23	1.68	14.5	16.18	17.00	-0.82	Pass
5300.0	-1.25	-1.40	1.69	14.5	16.19	17.00	-0.81	Pass
5340.0	-1.06	-1.93	1.54	14.5	16.04	17.00	-0.96	Pass

\* - Pmeas, dBm/MHz = 10 log(10<sup>^(P(dBm/MHz,Ant1)/10)</sup>+ 10<sup>^(P(dBm/MHz,Ant2)/10)</sup>)

\*\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Gain, dBi

\*\*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi

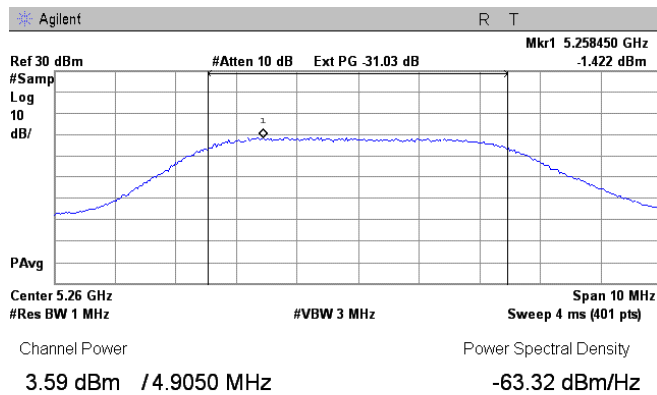
\*\*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz



<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

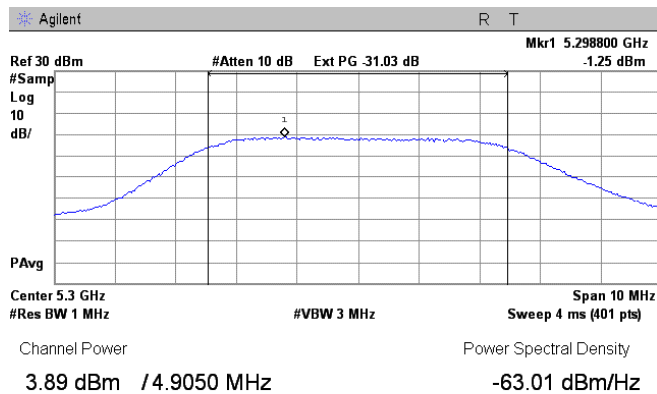
Plot 7.2.7 Peak output power and spectral power density, Antenna 1, 14.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.8 Peak output power and spectral power density, Antenna 1, 14.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



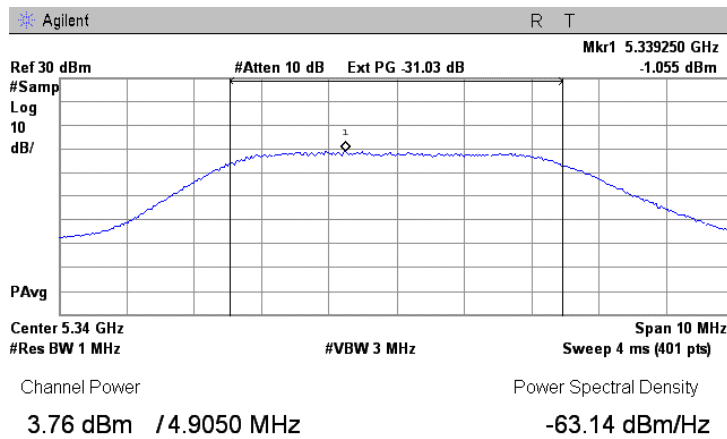


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<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Plot 7.2.9 Peak output power and spectral power density, Antenna 1, 14.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



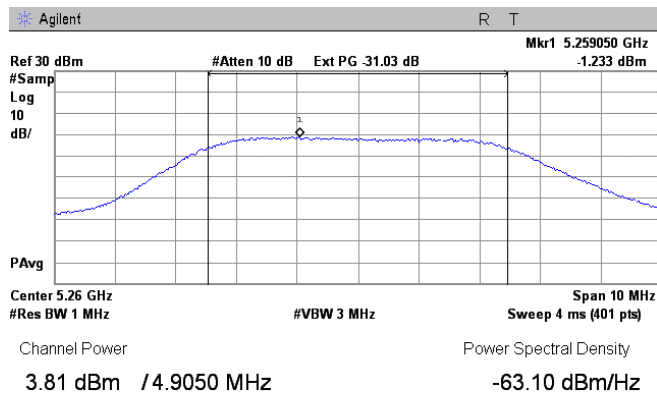




<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

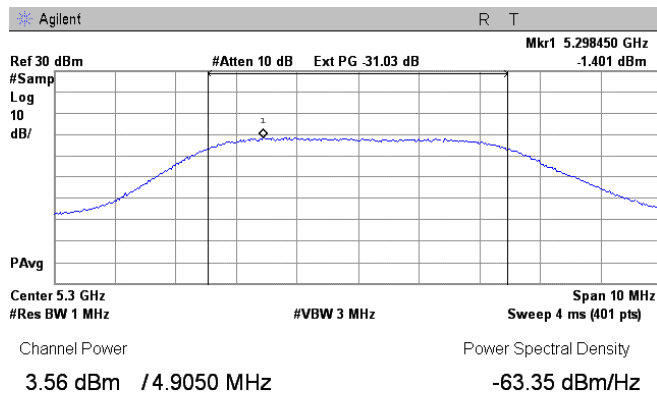
Plot 7.2.10 Peak output power and spectral power density, Antenna 2, 14.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.11 Peak output power and spectral power density, Antenna 2, 14.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



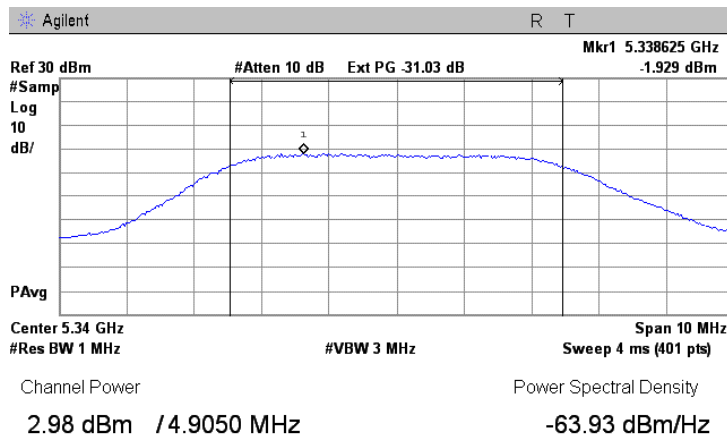


HERMON LABORATORIES

<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance	Verdict: PASS		
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.12 Peak output power and spectral power density, Antenna 2, 14.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Table 7.2.6 Conducted output power test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 17 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 16.30 dBi (Antenna gain, dBi – feeder loss, dB)  
 MODE: MIMO

Channel, MHz	26 dB BW MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas1</sub> , DBm*	Antenna assembly gain dBi	EIRP total, dBm**	Limit EIRP, dBm***	Margin, dB****	Verdict
5260.0	4.905	1.76	2.29	5.04	16.30	21.34	23.91	-2.56	Pass
5300.0	4.905	1.67	2.33	5.02	16.30	21.32	23.91	-2.58	Pass
5340.0	4.905	1.59	1.77	4.69	16.30	20.99	23.91	-2.92	Pass

\* - Pmeas, dBm = 10 log(10<sup>^((P(dBm,Ant1)/10)+ 10<sup>^((P(dBm,Ant2)/10))</sup>)</sup>)  
 \*\* - EIRP total, dBm = Pmeas, dBm + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

Table 7.2.7 Conducted output power spectral density test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 17 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 16.30 dBi (Antenna gain, dBi – feeder loss, dB)  
 EBW: 5 MHz  
 MODE: MIMO

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Pmeas (Ant.2), dBm/MHz	P <sub>meas1</sub> , dBm/MHz*	Antenna assembly gain dBi	EIRP total, dBm/MHz**	Limit EIRP, dBm/MHz***	Margin, dB****	Verdict
5260.0	-3.20	-2.56	0.15	16.30	16.45	17.00	-0.55	Pass
5300.0	-3.30	-2.57	0.09	16.30	16.39	17.00	-0.61	Pass
5340.0	-3.33	-3.18	-0.24	16.30	16.06	17.00	-0.94	Pass

\* - Pmeas, dBm/MHz = 10 log(10<sup>^((P(dBm/MHz,Ant1)/10)+ 10<sup>^((P(dBm/MHz,Ant2)/10))</sup>)</sup>)  
 \*\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm/MHz = 11 + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz

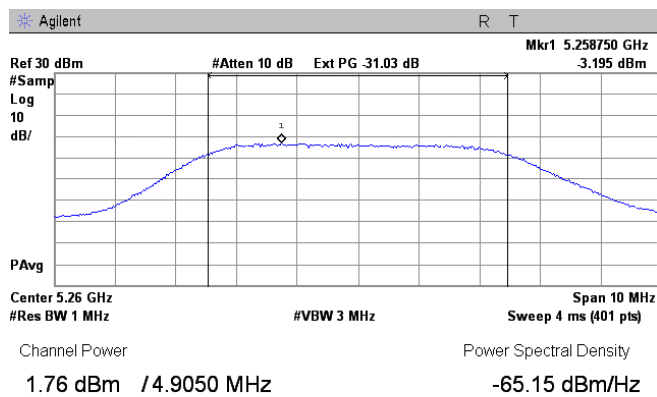


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

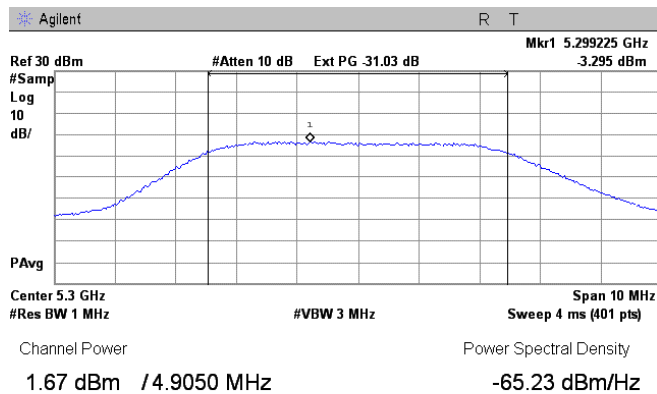
Plot 7.2.13 Peak output power and spectral power density, Antenna 1, 17 dBi, MIMO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.14 Peak output power and spectral power density, Antenna 1, 17 dBi, MIMO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



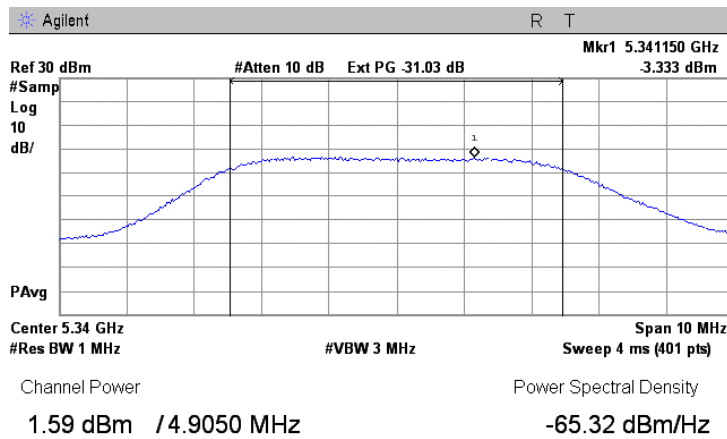


HERMON LABORATORIES

<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance	Verdict: PASS		
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.15 Peak output power and spectral power density, Antenna 1, 17 dBi, MIMO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



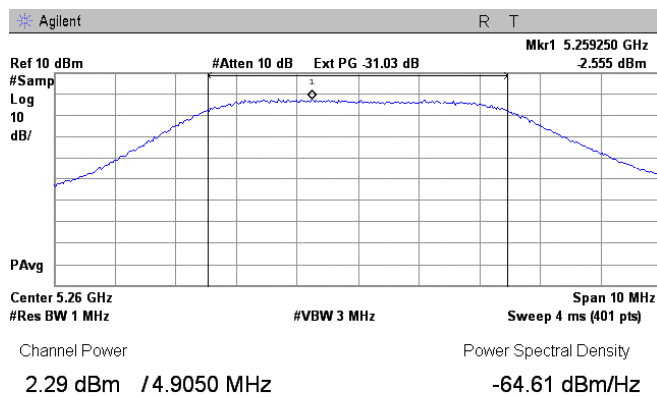


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

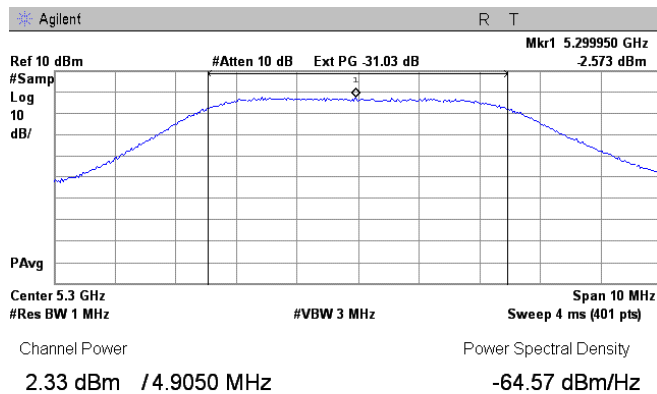
Plot 7.2.16 Peak output power and spectral power density, Antenna 2, 17 dBi, MIMO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.17 Peak output power and spectral power density, Antenna 2, 17 dBi, MIMO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



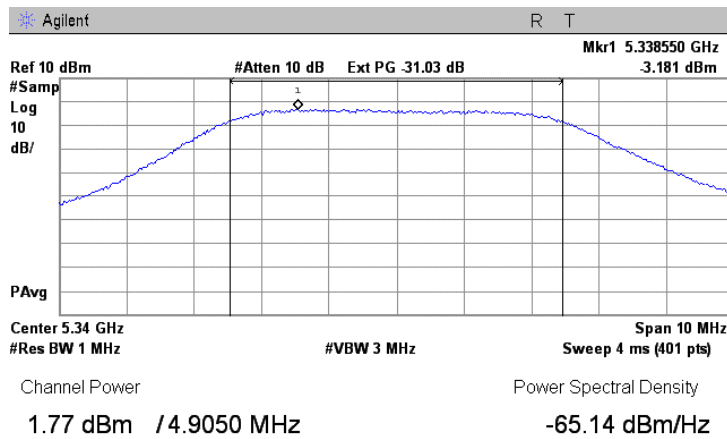


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode:	Compliance	Verdict: PASS	
Date & Time:	10/14/2009 3:23:52 PM		
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.18 Peak output power and spectral power density, Antenna 2, 17 dBi, MIMO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

**Table 7.2.8 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 9.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 8.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: SISO  
 ANTENNA PORT: Antenna 2 (worst case power and power density)

Channel, MHz	26 dB BW MHz	Pmeas (Ant.2), dBm	Antenna assembly gain dBi	EIRP total, dBm*	Limit EIRP, dBm**	Margin, dB***	Verdict
5260.0	4.905	12.35	8.80	21.15	23.91	-2.76	Pass
5300.0	4.905	13.18	8.80	21.98	23.91	-1.93	Pass
5340.0	4.905	12.80	8.80	21.60	23.91	-2.31	Pass

\* - EIRP total, dBm = Pmeas, dBm + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

**Table 7.2.9 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED:/ Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 9.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 8.8 dBi (Antenna gain, dBi – feeder loss, dB)  
 EBW: 5 MHz  
 MODE: SISO  
 ANTENNA PORT: Antenna 2 (worst case power and power density)

Channel, MHz	Pmeas (Ant.2), dBm/MHz	Antenna assembly gain dBi	EIRP total, dBm/MHz*	Limit EIRP, dBm/MHz**	Margin, dB***	Verdict
5260.0	7.32	8.80	16.12	17.00	-0.88	Pass
5300.0	8.13	8.80	16.93	17.00	-0.07	Pass
5340.0	7.82	8.80	16.62	17.00	-0.38	Pass

\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Assembly Gain, dBi  
 \*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi  
 \*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz

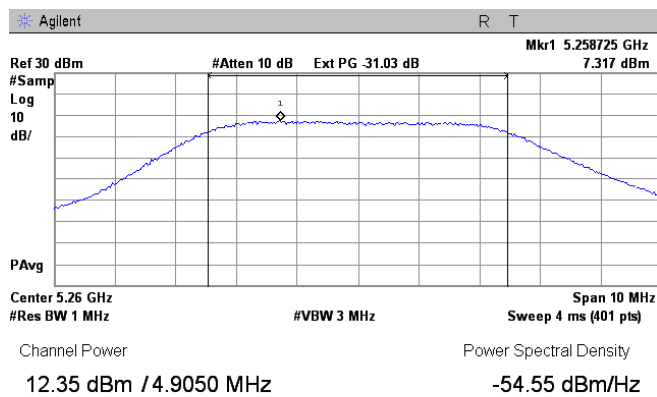




<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

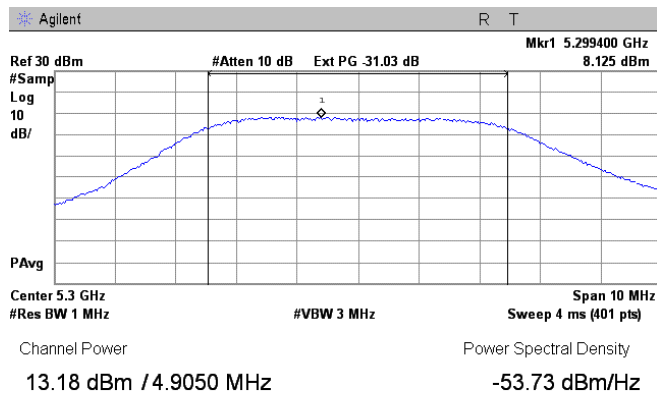
Plot 7.2.19 Peak output power and spectral power density, Antenna 2, 9.5 dBi, SISO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.20 Peak output power and spectral power density, Antenna 2, 9.5 dBi, SISO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



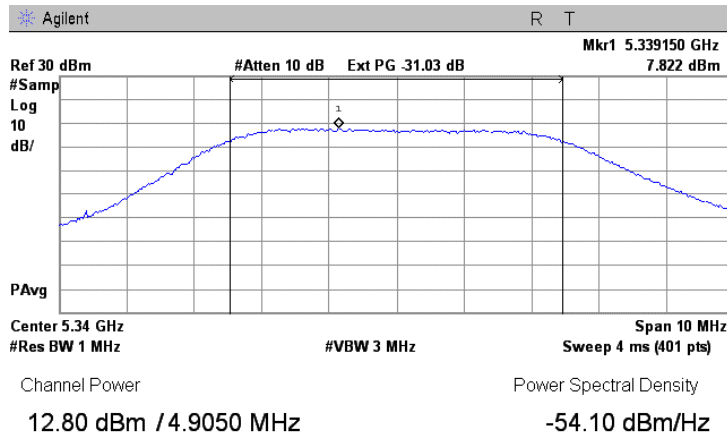


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance	Verdict: PASS		
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.21 Peak output power and spectral power density, Antenna 2, 9.5 dBi, SISO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

**Table 7.2.10 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 15 dBi  
 MODE: SISO  
 ANTENNA PORT: Antenna 2 (worst case power and power density)

Channel, MHz	26 dB BW MHz	Pmeas (Ant.2), dBm	Antenna gain dBi	EIRP total, dBm*	Limit EIRP, dBm**	Margin, dB***	Verdict
5260.0	4.905	6.32	15.00	21.32	23.91	-2.59	Pass
5300.0	4.905	6.39	15.00	21.39	23.91	-2.52	Pass
5340.0	4.905	7.00	15.00	22.00	23.91	-1.91	Pass

\* - EIRP total, dBm = Pmeas, dBm + Antenna Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

**Table 7.2.11 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 15 dBi  
 EBW: 5 MHz  
 MODE: SISO  
 ANTENNA PORT: Antenna 2 (worst case power and power density)

Channel, MHz	Pmeas (Ant.2), dBm/MHz	Antenna gain dBi	EIRP total, dBm/MHz*	Limit EIRP, dBm/MHz**	Margin, dB***	Verdict
5260.0	1.26	15.00	16.26	17.00	-0.74	Pass
5300.0	1.51	15.00	16.51	17.00	-0.49	Pass
5340.0	1.86	15.00	16.86	17.00	-0.14	Pass

\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Gain, dBi  
 \*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi  
 \*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz

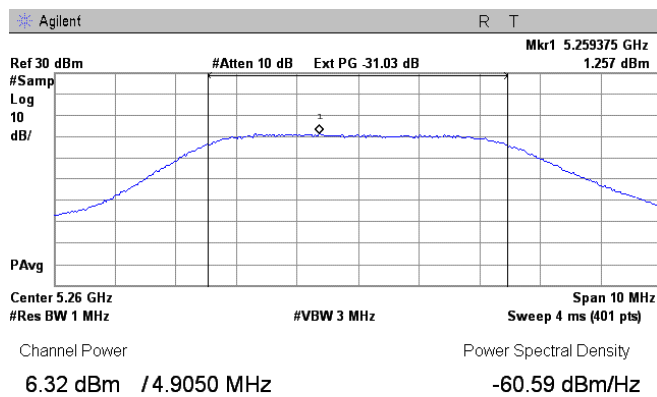


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

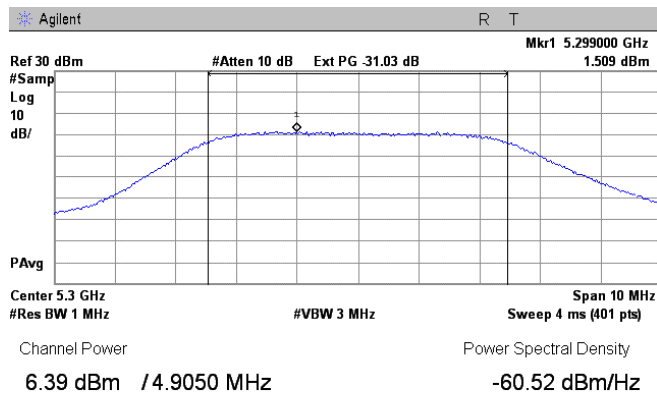
Plot 7.2.22 Peak output power and spectral power density, Antenna 2, 15 dBi, SISO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.23 Peak output power and spectral power density, Antenna 2, 15 dBi, SISO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



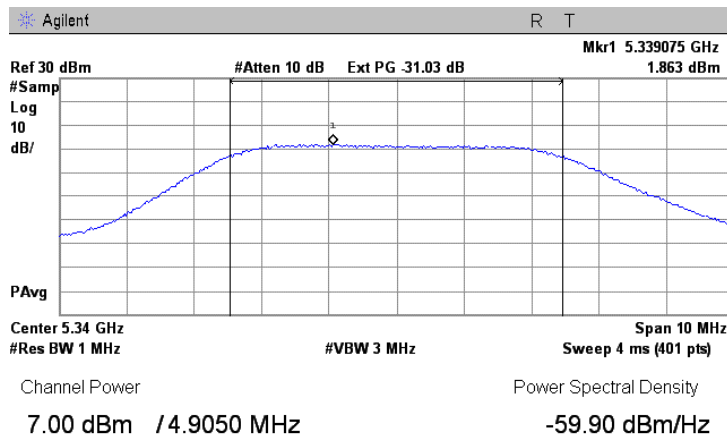


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Plot 7.2.24 Peak output power and spectral power density, Antenna 2, 15 dBi, SISO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

**Table 7.2.12 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 17 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 16.30 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: SISO  
 ANTENNA PORT: Antenna 2 (worst case power and power density)

Channel, MHz	26 dB BW MHz	Pmeas (Ant.2), dBm	Antenna assembly gain dBi	EIRP total, dBm*	Limit EIRP, dBm**	Margin, dB***	Verdict
5260.0	4.905	4.90	16.30	21.20	23.91	-2.71	Pass
5300.0	4.905	5.34	16.30	21.64	23.91	-2.27	Pass
5340.0	4.905	5.37	16.30	21.67	23.91	-2.24	Pass

\* - EIRP total, dBm = Pmeas, dBm + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

**Table 7.2.13 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 17 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 16.30 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 5 MHz  
 MODE: SISO  
 ANTENNA PORT: Antenna 2 (worst case power and power density)

Channel, MHz	Pmeas (Ant.2), dBm/MHz	Antenna assembly gain dBi	EIRP total, dBm/MHz*	Limit EIRP, dBm/MHz**	Margin, dB***	Verdict
5260.0	0.09	16.30	16.39	17.00	-0.61	Pass
5300.0	0.50	16.30	16.80	17.00	-0.20	Pass
5340.0	0.25	16.30	16.55	17.00	-0.45	Pass

\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Assembly Gain, dBi  
 \*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi  
 \*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz

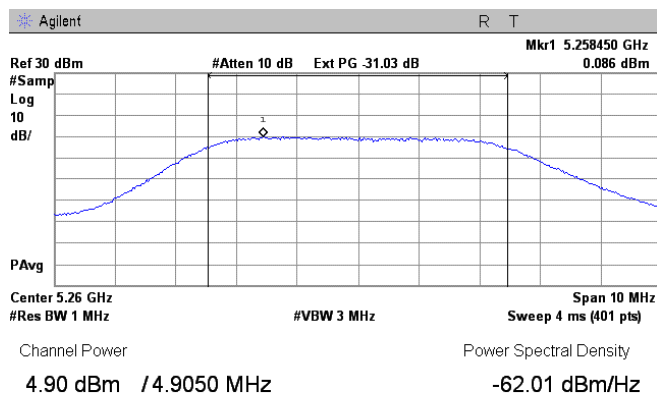


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

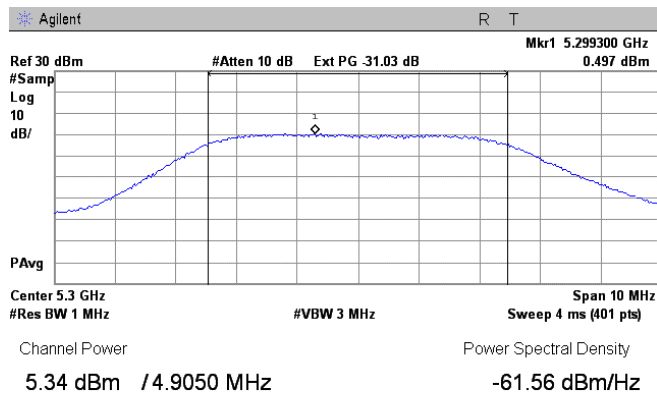
Plot 7.2.25 Peak output power and spectral power density, Antenna 2, 17 dBi, SISO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.26 Peak output power and spectral power density, Antenna 2, 17 dBi, SISO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



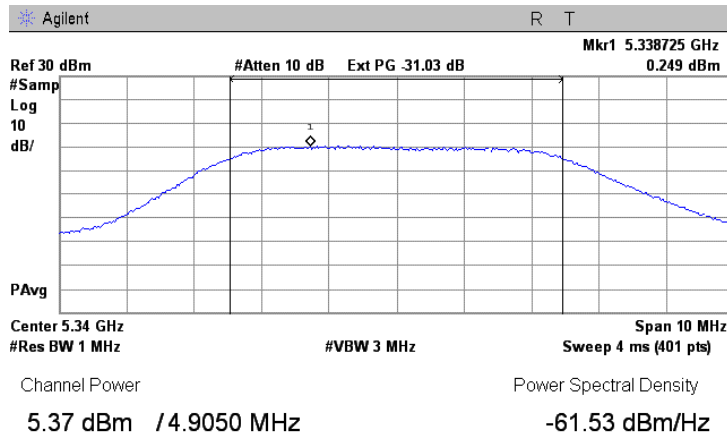


HERMON LABORATORIES

<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance	Verdict: PASS		
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.27 Peak output power and spectral power density, Antenna 2, 17 dBi, SISO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM







<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

**Table 7.2.14 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 9.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 8.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: MIMO

Channel, MHz	26 dB BW MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> , dBm*	Antenna assembly gain dBi	EIRP total, dBm**	Limit EIRP, dBm***	Margin, dB****	Verdict
5265.0	9.51	12.38	12.25	15.33	8.80	24.13	26.78	-2.66	Pass
5300.0	9.51	12.68	12.64	15.67	8.80	24.47	26.78	-2.31	Pass
5335.0	9.51	12.76	12.59	15.69	8.80	24.49	26.78	-2.30	Pass

\* - P<sub>meas</sub>, dBm = 10 log(10<sup>^((P(dBm,Ant1)/10)+ 10<sup>^((P(dBm,Ant2)/10))</sup>)  
 \*\* - EIRP total, dBm = P<sub>meas</sub>, dBm + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm</sup>

**Table 7.2.15 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 9.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 8.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 10 MHz  
 MODE: MIMO

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Pmeas (Ant.2), dBm/MHz	P <sub>meas</sub> , dBm/MHz*	Antenna assembly gain, dBi	EIRP total, dBm/MHz**	Limit EIRP, dBm/MHz***	Margin, dB****	Verdict
5265.0	4.79	4.75	7.78	8.80	16.58	17.00	-0.42	Pass
5300.0	5.04	4.88	7.97	8.80	16.77	17.00	-0.23	Pass
5335.0	5.03	5.00	8.02	8.80	16.82	17.00	-0.18	Pass

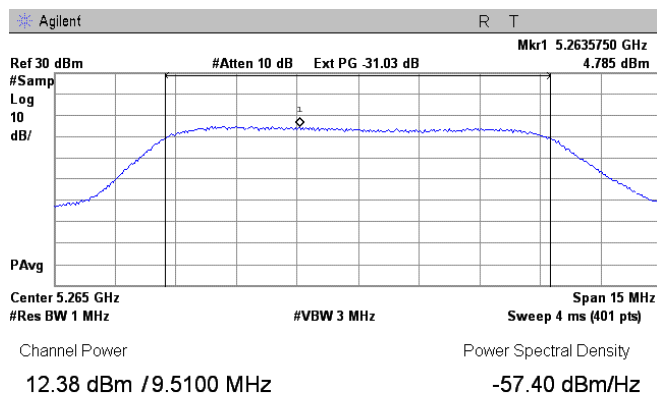
\* - P<sub>meas</sub>, dBm/MHz = 10 log(10<sup>^((P(dBm/MHz,Ant1)/10)+ 10<sup>^((P(dBm/MHz,Ant2)/10))</sup>)  
 \*\* - EIRP total, dBm = P<sub>meas</sub>, dBm/MHz + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz</sup>



<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

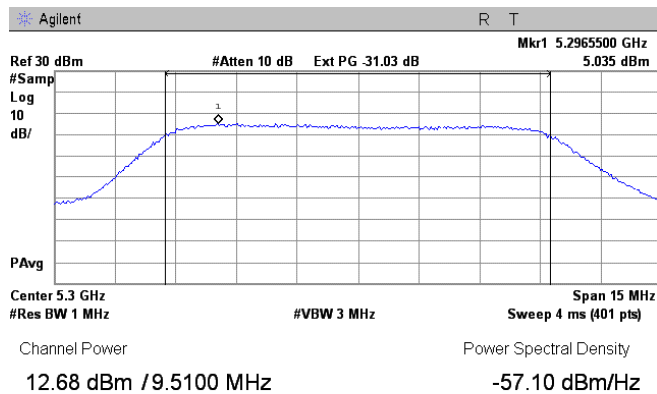
Plot 7.2.28 Peak output power and spectral power density, Antenna 1, 9.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.29 Peak output power and spectral power density, Antenna 1, 9.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



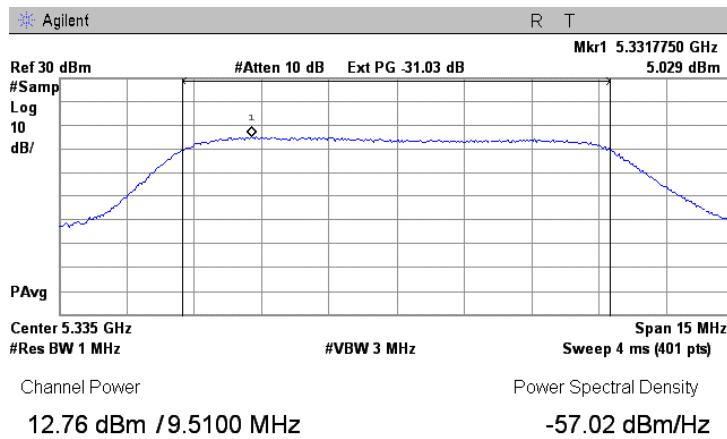


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<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Plot 7.2.30 Peak output power and spectral power density, Antenna 1, 9.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



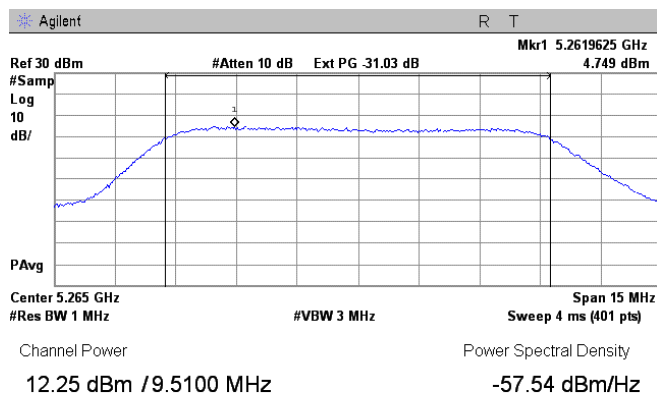


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

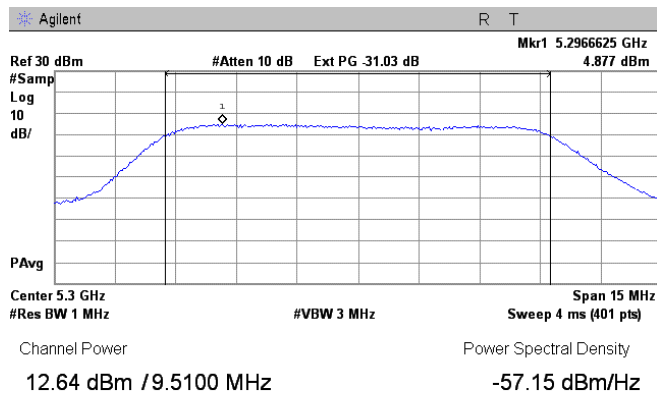
Plot 7.2.31 Peak output power and spectral power density, Antenna 2, 9.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.32 Peak output power and spectral power density, Antenna 2, 9.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



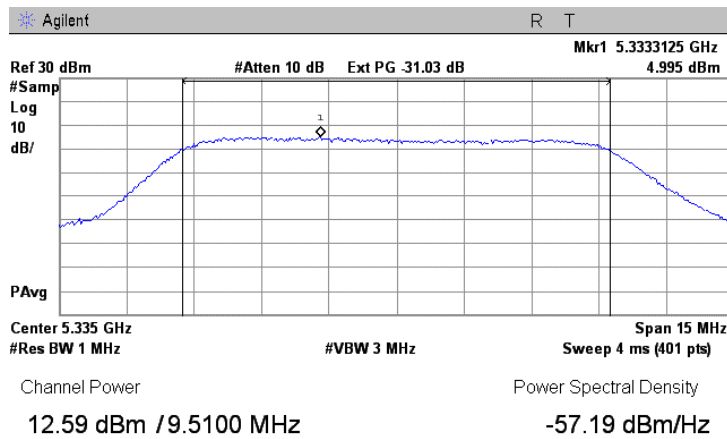


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.33 Peak output power and spectral power density, Antenna 2, 9.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Table 7.2.16 Conducted output power test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 14.5 dBi  
 MODE: MIMO

Channel, MHz	26 dB BW MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> , dBm*	Antenna gain, dBi	EIRP total, dBm**	Limit EIRP, dBm***	Margin, dB****	Verdict
5265.0	9.51	5.56	6.00	8.80	14.5	23.30	26.78	-3.48	Pass
5300.0	9.51	6.83	6.05	9.47	14.5	23.97	26.78	-2.81	Pass
5335.0	9.51	6.36	5.99	9.19	14.5	23.69	26.78	-3.09	Pass

\* - Pmeas, dBm = 10 log(10<sup>^(P(dBm,Ant1)/10)</sup>+ 10<sup>^(P(dBm,Ant2)/10)</sup>)

\*\* - EIRP total, dBm = Pmeas, dBm + Antenna Gain, dBi

\*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi

\*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

Table 7.2.17 Conducted output power spectral density test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 14.5 dBi  
 EBW: 10 MHz  
 MODE: MIMO

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Pmeas (Ant.2), dBm/MHz	P <sub>meas</sub> , dBm/MHz*	Antenna gain, dBi	EIRP total, dBm/MHz**	Limit EIRP, dBm/MHz***	Margin, dB****	Verdict
5265.0	-1.86	-1.21	1.49	14.5	15.99	17.00	-1.01	Pass
5300.0	-0.87	-1.59	1.79	14.5	16.29	17.00	-0.71	Pass
5335.0	-1.20	-1.59	1.62	14.5	16.12	17.00	-0.88	Pass

\* - Pmeas, dBm/MHz = 10 log(10<sup>^(P(dBm/MHz,Ant1)/10)</sup>+ 10<sup>^(P(dBm/MHz,Ant2)/10)</sup>)

\*\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Gain, dBi

\*\*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi

\*\*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz

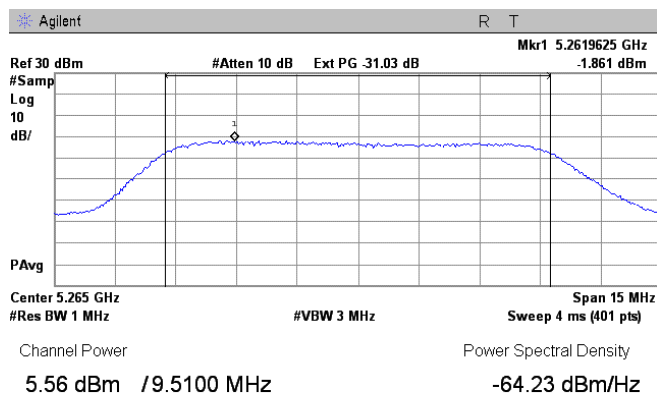


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

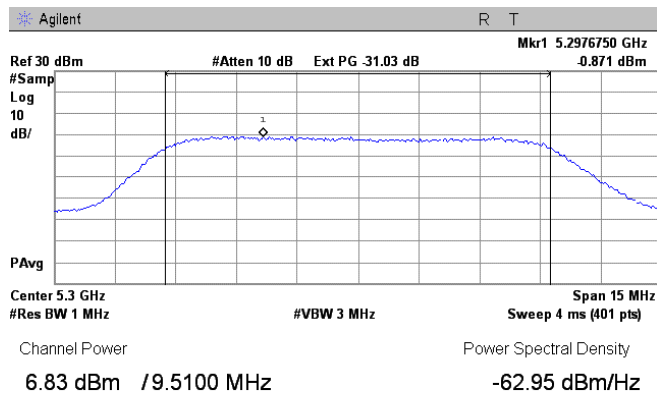
Plot 7.2.34 Peak output power and spectral power density, Antenna 1, 14.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.35 Peak output power and spectral power density, Antenna 1, 14.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



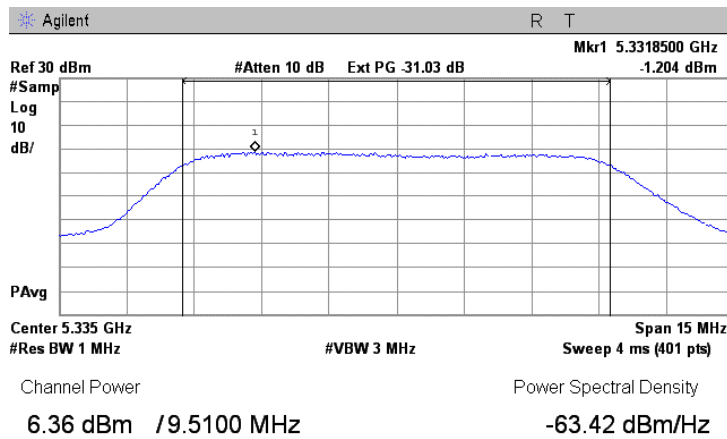


HERMON LABORATORIES

<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance	Verdict: PASS		
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.36 Peak output power and spectral power density, Antenna 1, 14.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



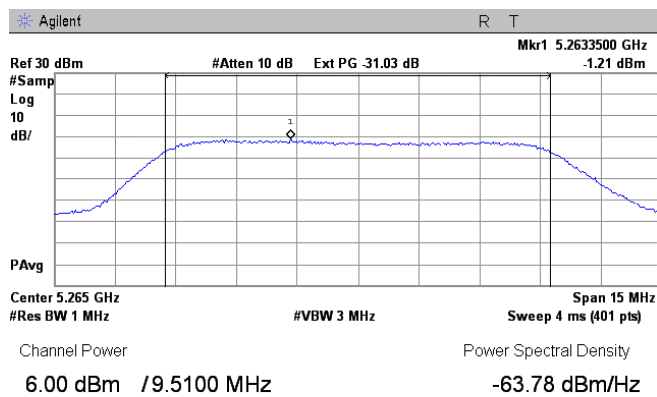




<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

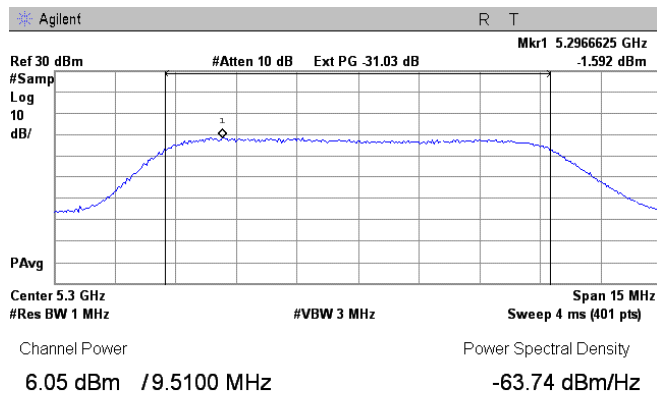
Plot 7.2.37 Peak output power and spectral power density, Antenna 2, 14.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.38 Peak output power and spectral power density, Antenna 2, 14.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



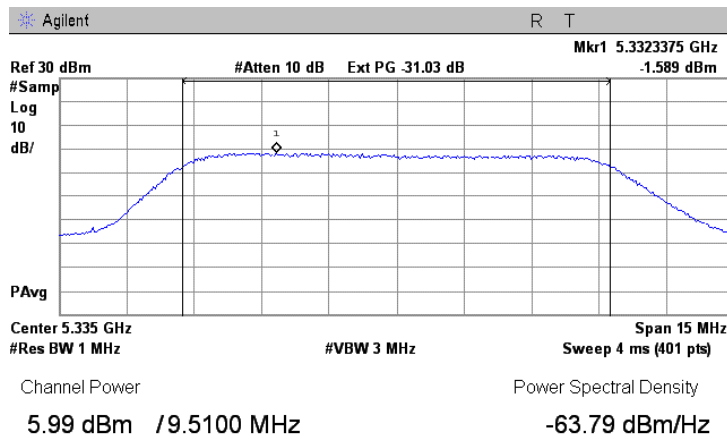


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<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Plot 7.2.39 Peak output power and spectral power density, Antenna 2, 14.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Table 7.2.18 Conducted output power test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 17 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 16.3 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: MIMO

Channel, MHz	26 dB BW MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> , dBm*	Antenna assembly gain dBi	EIRP total, dBm**	Limit EIRP, dBm***	Margin, dB****	Verdict
5265.0	9.51	5.33	4.83	8.10	16.30	24.40	26.78	-2.38	Pass
5300.0	9.51	5.41	5.33	8.38	16.30	24.68	26.78	-2.10	Pass
5335.0	9.51	5.28	4.78	8.05	16.30	24.35	26.78	-2.43	Pass

\* - P<sub>meas</sub>, dBm = 10 log(10<sup>^((P(dBm,Ant1)/10)+ 10<sup>^((P(dBm,Ant2)/10))</sup>)  
 \*\* - EIRP total, dBm = P<sub>meas</sub>, dBm + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm</sup>

Table 7.2.19 Conducted output power spectral density test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 17 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 16.3 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 10 MHz  
 MODE: MIMO

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Pmeas (Ant.2), dBm/MHz	P <sub>meas</sub> , dBm/MHz*	Antenna assembly gain, dBi	EIRP total, dBm/MHz**	Limit EIRP, dBm/MHz***	Margin, dB****	Verdict
5265.0	-2.26	-2.83	0.48	16.30	16.78	17.00	-0.22	Pass
5300.0	-2.27	-2.45	0.65	16.30	16.95	17.00	-0.05	Pass
5335.0	-2.80	-2.82	0.20	16.30	16.50	17.00	-0.50	Pass

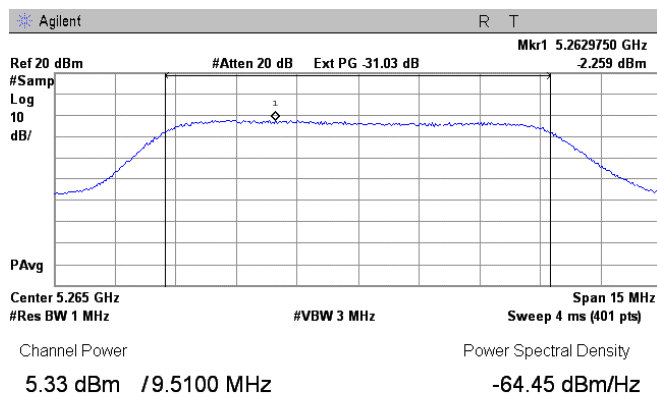
\* - P<sub>meas</sub>, dBm/MHz = 10 log(10<sup>^((P(dBm/MHz,Ant1)/10)+ 10<sup>^((P(dBm/MHz,Ant2)/10))</sup>)  
 \*\* - EIRP total, dBm = P<sub>meas</sub>, dBm/MHz + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm/MHz = 11 + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz</sup>



<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

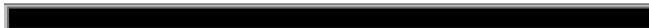
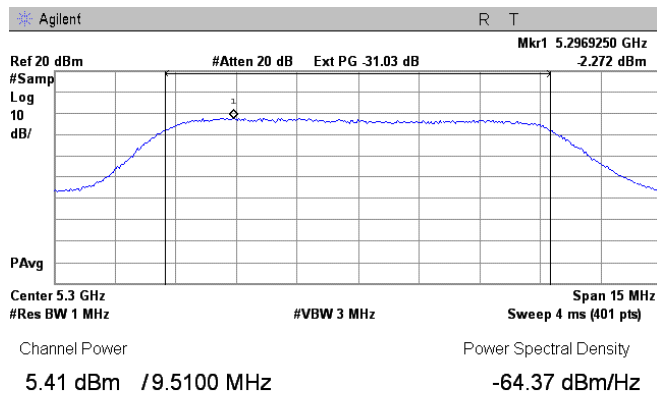
Plot 7.2.40 Peak output power and spectral power density, Antenna 1, 17 dBi, MIMO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.41 Peak output power and spectral power density, Antenna 1, 17 dBi, MIMO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



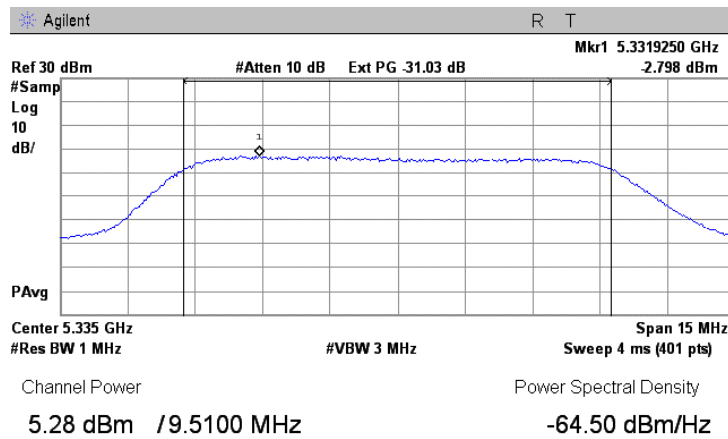


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<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Plot 7.2.42 Peak output power and spectral power density, Antenna 1, 17 dBi, MIMO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



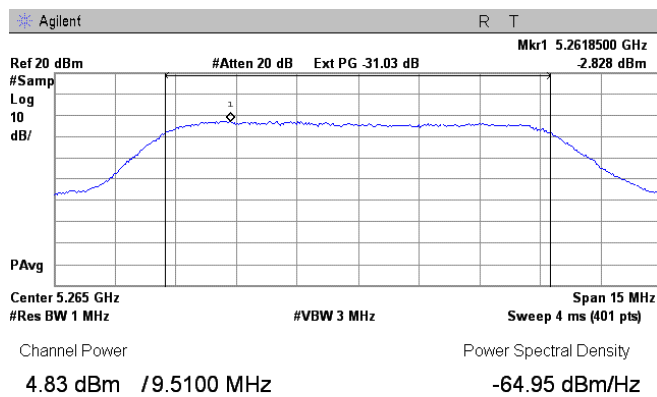


HERMON LABORATORIES

<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

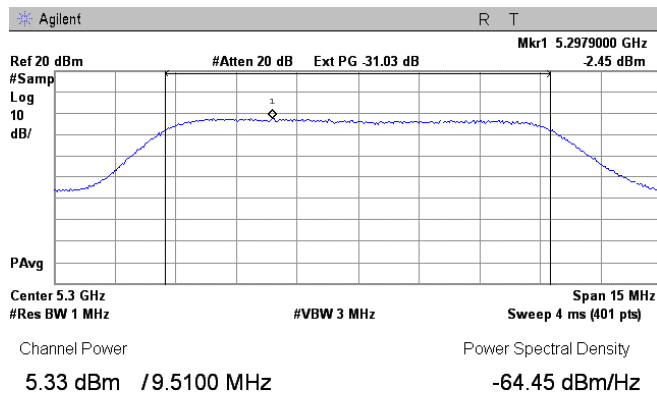
Plot 7.2.43 Peak output power and spectral power density, Antenna 2, 17 dBi, MIMO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.44 Peak output power and spectral power density, Antenna 2, 17 dBi, MIMO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



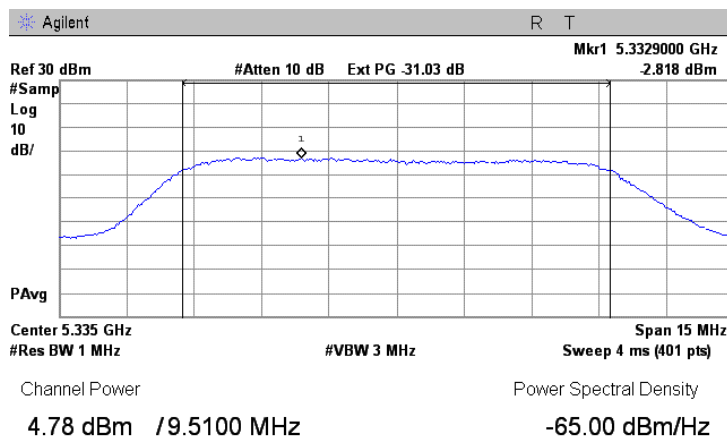


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance	Verdict: PASS		
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.45 Peak output power and spectral power density, Antenna 2, 17 dBi, MIMO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

**Table 7.2.20 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 9.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 8.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel, MHz	26 dB BW, MHz	Pmeas (Ant.1), dBm	Antenna assembly gain, dBi	EIRP total, dBm*	Limit EIRP, dBm**	Margin, dB***	Verdict
5265.0	9.51	15.40	8.80	24.20	26.78	-2.58	Pass
5300.0	9.51	15.78	8.80	24.58	26.78	-2.20	Pass
5335.0	9.51	15.40	8.80	24.20	26.78	-2.58	Pass

\* - EIRP total, dBm = Pmeas, dBm + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

**Table 7.2.21 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 9.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 8.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 10 MHz  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Antenna assembly gain, dBi	EIRP total, dBm/MHz*	Limit EIRP, dBm/MHz**	Margin, dB***	Verdict
5260.0	8.09	8.80	16.89	17.00	-0.11	Pass
5300.0	8.17	8.80	16.97	17.00	-0.04	Pass
5335.0	7.86	8.80	16.66	17.00	-0.34	Pass

\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Assembly Gain, dBi  
 \*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi  
 \*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz



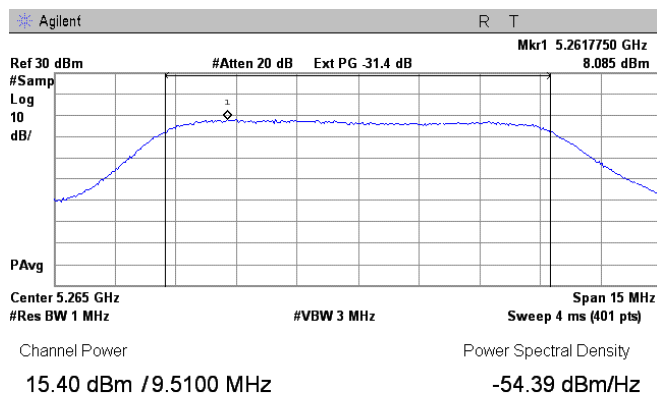


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<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

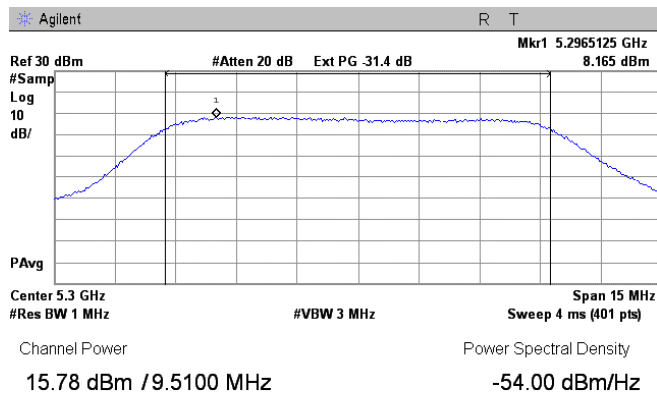
Plot 7.2.46 Peak output power and spectral power density, Antenna 1, 9.5 dBi, SISO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.47 Peak output power and spectral power density, Antenna 1, 9.5 dBi, SISO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



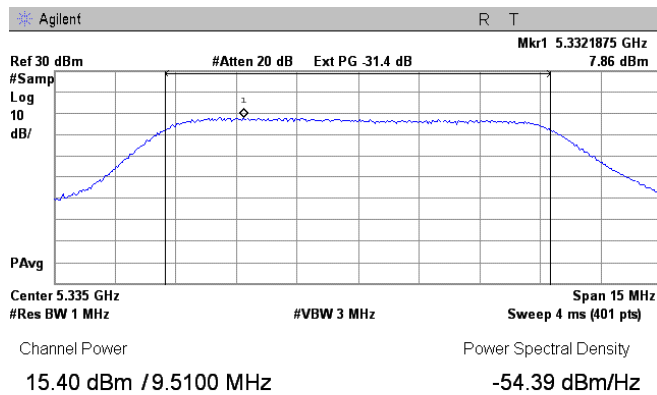


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.48 Peak output power and spectral power density, Antenna 1, 9.5 dBi, SISO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Table 7.2.22 Conducted output power test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 15 dBi  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel, MHz	26 dB BW MHz	Pmeas (Ant.1), dBm	Antenna gain dBi	EIRP total, dBm*	Limit EIRP, dBm**	Margin, dB***	Verdict
5265.0	9.51	8.81	15.00	23.81	26.78	-2.97	Pass
5300.0	9.51	9.03	15.00	24.03	26.78	-2.75	Pass
5335.0	9.51	8.46	15.00	23.46	26.78	-3.32	Pass

\* - EIRP total, dBm = Pmeas, dBm + Antenna Gain, dBi

\*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi

\*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

Table 7.2.23 Conducted output power spectral density test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 15 dBi  
 EBW: 10 MHz  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Antenna gain dBi	EIRP total, dBm/MHz*	Limit EIRP, dBm/MHz**	Margin, dB***	Verdict
5265.0	1.15	15.00	16.15	17.00	-0.85	Pass
5300.0	1.57	15.00	16.57	17.00	-0.43	Pass
5335.0	1.06	15.00	16.06	17.00	-0.94	Pass

\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Gain, dBi

\*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi

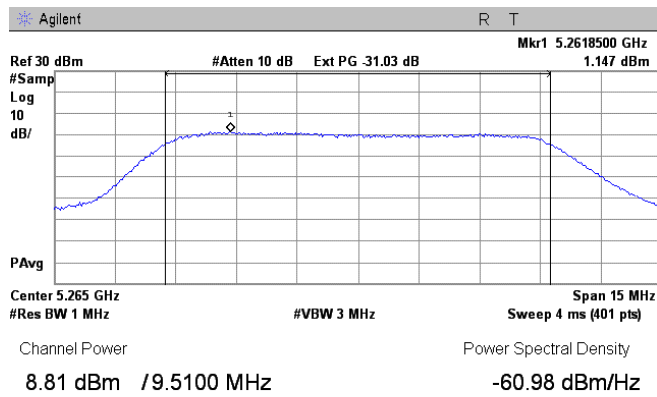
\*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz



<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

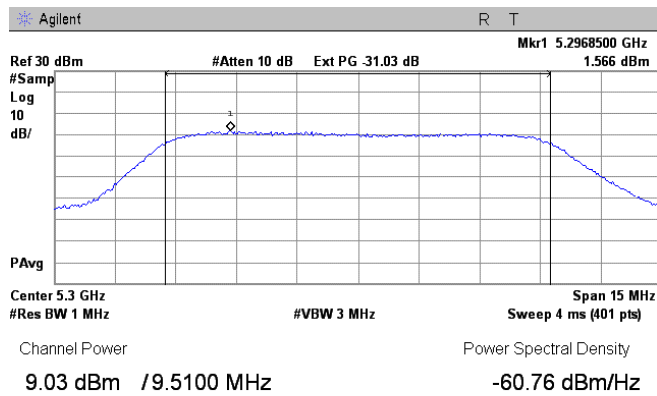
Plot 7.2.49 Peak output power and spectral power density, Antenna 1, 15 dBi, SISO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.50 Peak output power and spectral power density, Antenna 1, 15 dBi, SISO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



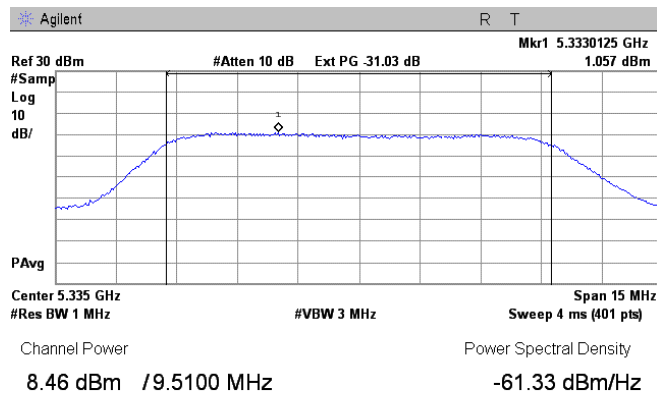


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.51 Peak output power and spectral power density, Antenna 1, 15 dBi, SISO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



1 [REDACTED]



<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 10/14/2009 3:23:52 PM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1014 hPa	<b>Relative Humidity:</b> 43 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

**Table 7.2.24 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 17 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 16.3 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel, MHz	26 dB BW MHz	Pmeas (Ant.1), dBm	Antenna assembly gain dBi	EIRP total, dBm*	Limit EIRP, dBm**	Margin, dB***	Verdict
5265.0	9.51	8.23	16.30	24.53	26.78	-2.25	Pass
5300.0	9.51	7.55	16.30	23.85	26.78	-2.93	Pass
5335.0	9.51	7.48	16.30	23.78	26.78	-3.00	Pass

\* - EIRP total, dBm = Pmeas, dBm + Antenna Assembly Gain, dBi  
 \*\*\* - Limit EIRP, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB = EIRP total, dBm – Limit EIRP, dBm

**Table 7.2.25 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 17 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 16.3 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 10 MHz  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel, MHz	Pmeas (Ant.1), dBm/MHz	Antenna assembly gain dBi	EIRP total, dBm/MHz*	Limit EIRP, dBm/MHz**	Margin, dB***	Verdict
5265.0	0.54	16.30	16.84	17.00	-0.16	Pass
5300.0	0.09	16.30	16.39	17.00	-0.61	Pass
5335.0	-0.16	16.30	16.14	17.00	-0.86	Pass

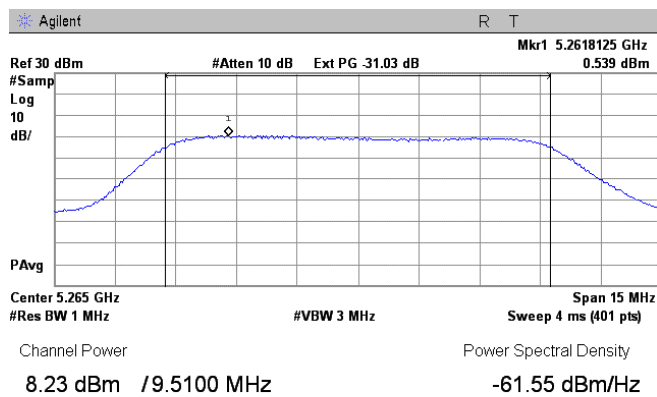
\* - EIRP total, dBm = Pmeas, dBm/MHz + Antenna Assembly Gain, dBi  
 \*\* - Limit EIRP, dBm/MHz = 11+ 6 dBi  
 \*\*\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz



<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

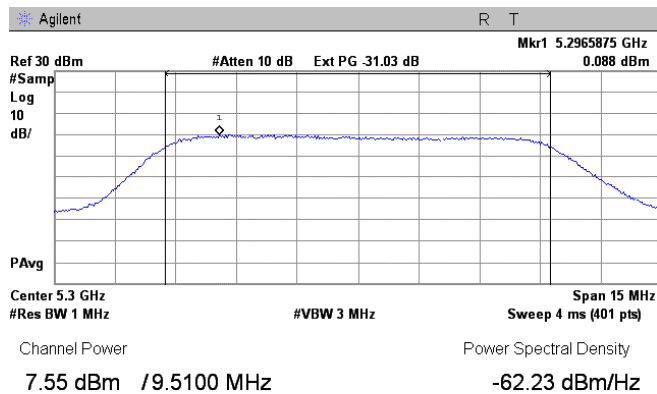
Plot 7.2.52 Peak output power and spectral power density, Antenna 1, 17 dBi, SISO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.53 Peak output power and spectral power density, Antenna 1, 17 dBi, SISO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



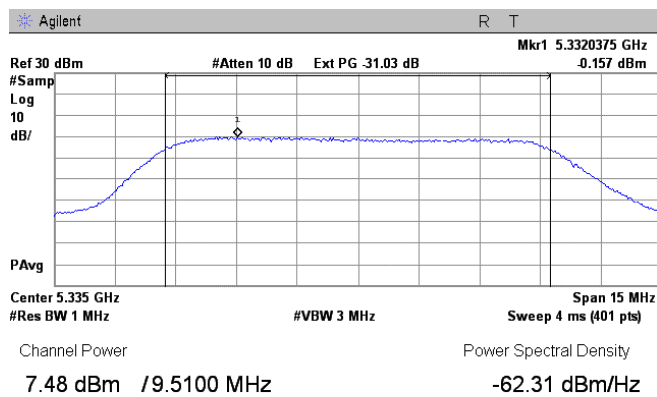


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 10/14/2009 3:23:52 PM			
Temperature: 24°C	Air Pressure: 1014 hPa	Relative Humidity: 43 %	Power Supply: 120 VAC
Remarks:			

Plot 7.2.54 Peak output power and spectral power density, Antenna 1, 17 dBi, SISO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM







<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/11/2009 1:10:18 PM			
<b>Temperature:</b> 25.3 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

**Table 7.2.26 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 6.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 5.8 dBi max (Antenna gain, dBi – feeder loss, dB )  
 MODE: MIMO

Channel MHz	26 dB BW, MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> *, dBm	Limit, dBm	Margin, dB	Verdict
5260.0	4.905	12.37	12.23	15.31	17.91	-2.60	Pass
5300.0	4.905	12.59	13.01	15.82	17.91	-2.09	Pass
5340.0	4.905	12.78	12.28	15.55	17.91	-2.36	Pass

\* - Pmeas, dBm = 10 log(10<sup>^</sup>((P(dBm,Ant1)/10)+ 10<sup>^</sup>((P(dBm,Ant2)/10)))  
 \*\*\* - Limit, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi  
 \*\*\*\* - Margin, dB, Pmeas dBm – Limit, dBm

**Table 7.2.27 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 6.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 5.8 dBi max (Antenna gain, dBi – feeder loss, dB )  
 EBW: 5 MHz  
 MODE: MIMO

Channel, MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> *, dBm	Limit, dBm	Margin**, dB	Verdict
5260.0	7.61	6.99	10.32	11.00	-0.68	Pass
5300.0	7.90	7.90	10.91	11.00	-0.09	Pass
5340.0	7.77	7.63	10.71	11.00	-0.29	Pass

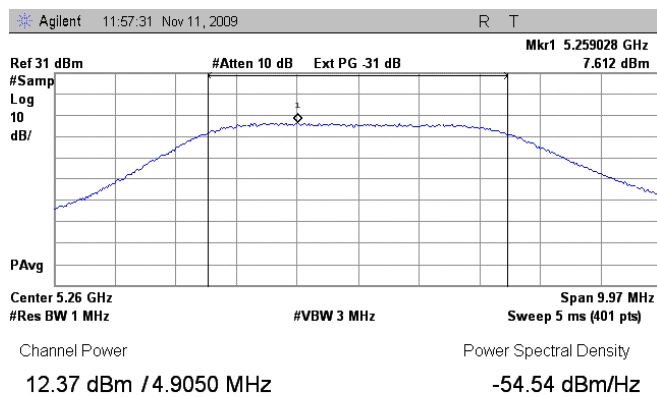
\* - Pmeas, dBm/MHz = 10 log(10<sup>^</sup>((P(dBm/MHz,Ant1)/10)+ 10<sup>^</sup>((P(dBm/MHz,Ant2)/10)))  
 \*\* - Margin, dB = Pmeas (A),dBm - Limit, dBm



<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

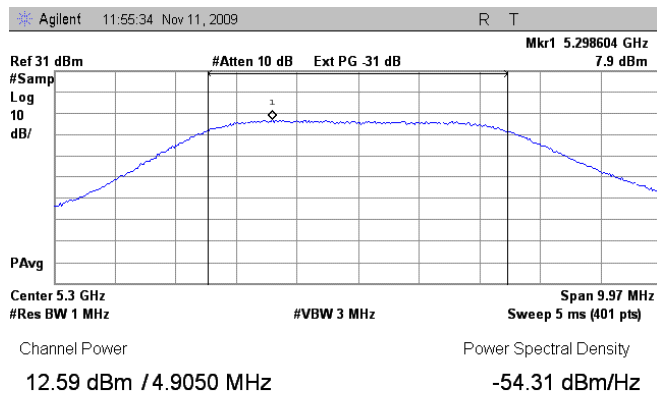
Plot 7.2.55 Peak output power and spectral power density, Antenna 1, 6.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.56 Peak output power and spectral power density, Antenna 1, 6.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



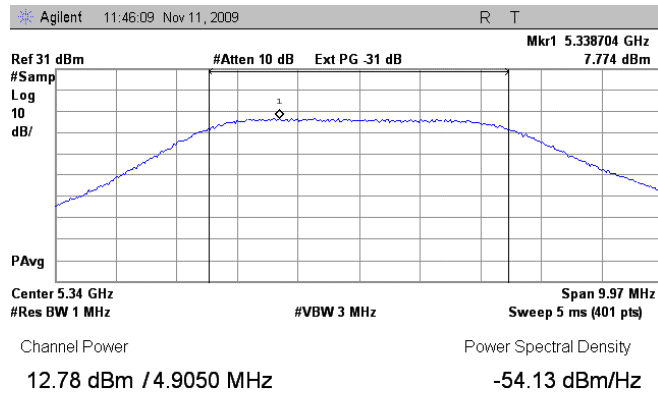


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

Plot 7.2.57 Peak output power and spectral power density, Antenna 1, 6.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM

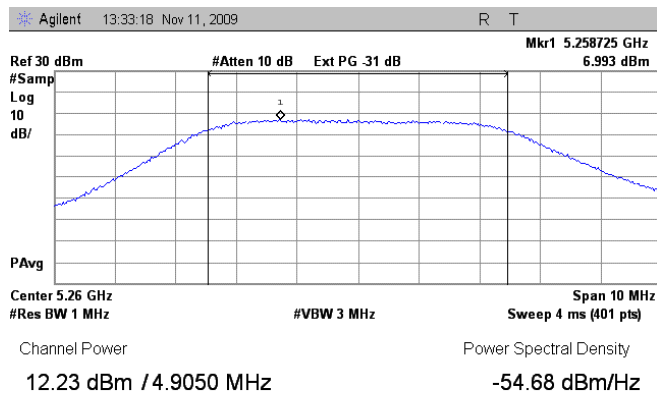




<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

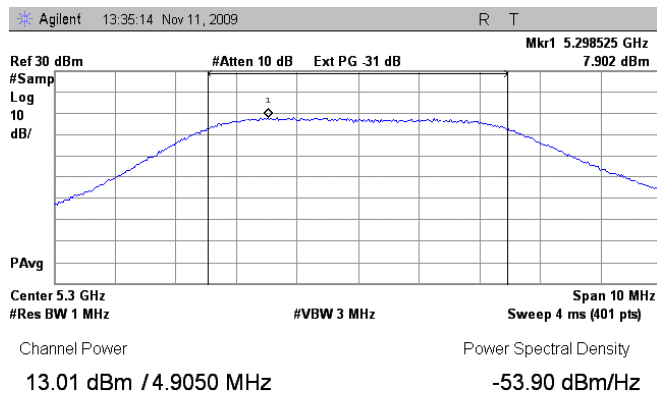
Plot 7.2.58 Peak output power and spectral power density, Antenna 2, 6.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.59 Peak output power and spectral power density, Antenna 2, 6.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



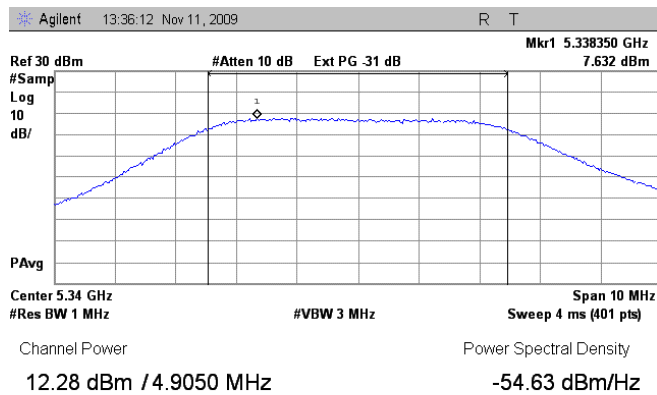


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

Plot 7.2.60 Peak output power and spectral power density, Antenna 2, 6.5 dBi, MIMO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/11/2009 1:10:18 PM			
<b>Temperature:</b> 25.3 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

Table 7.2.28 Conducted output power test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 6.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 5.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel MHz	26 dB BW, MHz	Pmeas, dBm	Limit, dBm	Margin*, dB	Verdict
5260.0	4.905	15.17	17.91	-2.74	Pass
5300.0	4.905	15.46	17.91	-2.45	Pass
5340.0	4.905	15.80	17.91	-2.11	Pass

\* - Margin, dB = Pmeas, dBm – Limit, dBm

Table 7.2.29 Conducted output power spectral density test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 6.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 5.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 5 MHz  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel, MHz	Pmeas, dBm	Limit, dBm	Margin, dB	Verdict
5260.0	10.23	11.00	-0.77	Pass
5300.0	10.45	11.00	-0.55	Pass
5340.0	10.71	11.00	-0.29	Pass

\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz

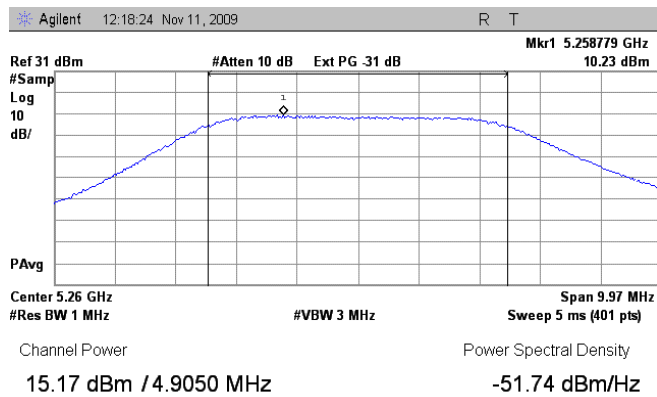


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/11/2009 1:10:18 PM			
<b>Temperature:</b> 25.3 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

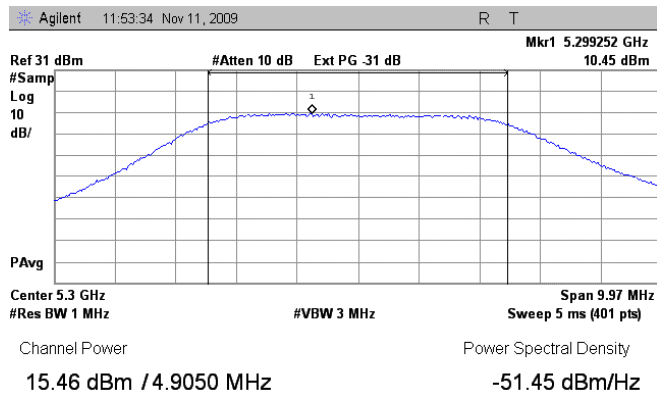
Plot 7.2.61 Peak output power and spectral power density, Antenna 1, 6.5 dBi, SISO mode, 5 MHz EBW

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.2.62 Peak output power and spectral power density, Antenna 1, 6.5 dBi, SISO mode, 5 MHz EBW

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



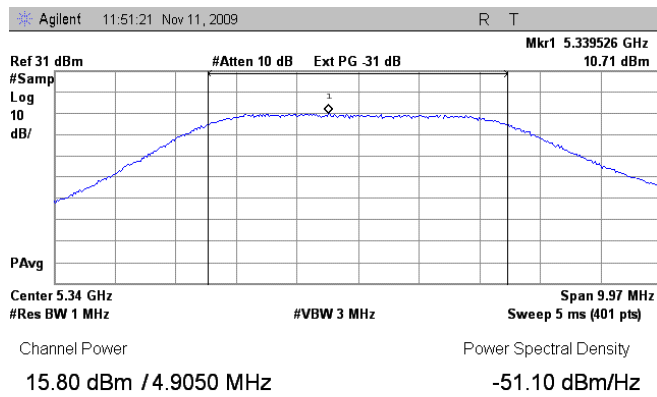


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

Plot 7.2.63 Peak output power and spectral power density, Antenna 1, 6.5 dBi, SISO mode, 5 MHz EBW

Frequency:	5340 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM







<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/11/2009 1:10:18 PM			
<b>Temperature:</b> 25.3 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

**Table 7.2.30 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 6.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 5.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: MIMO

Channel MHz	26 dB BW, MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> *, dBm	Limit, dBm	Margin, dB	Verdict
5265.00	9.51	15.19	15.26	18.24	20.78	-2.55	Pass
5300.00	9.51	15.54	14.37	18.00	20.78	-2.78	Pass
5335.00	9.51	15.22	15.65	18.45	20.78	-2.33	Pass

\* - P<sub>meas</sub>, dBm = 10 log(10<sup>((P(dBm,Ant1)/10)+ 10<sup>((P(dBm,Ant2)/10))</sup></sup>

\*\*\* - Limit, dBm = 11+10LOG(26 dB BW, MHz) + 6 dBi

\*\*\*\* - Margin, dB, P<sub>meas</sub> dBm – Limit, dBm

**Table 7.2.31 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 6.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 5.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 10 MHz  
 MODE: MIMO

Channel, MHz	Pmeas (Ant.1), dBm	Pmeas (Ant.2), dBm	P <sub>meas</sub> *,dBm	Limit, dBm	Margin**, dB	Verdict
5265.00	7.63	7.84	10.75	11.00	-0.25	Pass
5300.00	8.16	7.10	10.67	11.00	-0.33	Pass
5335.00	7.53	7.75	10.65	11.00	-0.35	Pass

\* - P<sub>meas</sub>, dBm/MHz = 10 log(10<sup>((P(dBm/MHz,Ant1)/10)+ 10<sup>((P(dBm/MHz,Ant2)/10))</sup></sup>

\*\* - Margin, dB = P<sub>meas</sub> (A),dBm - Limit, dBm

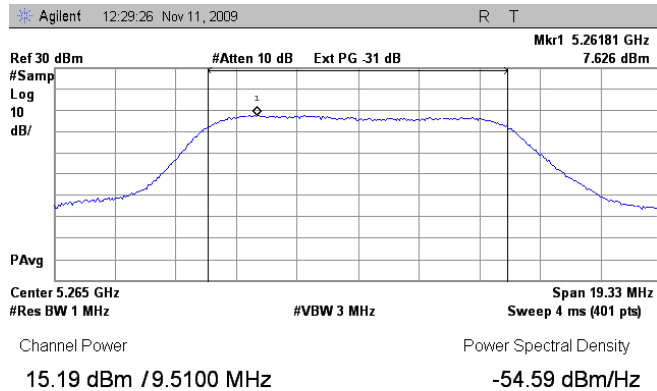


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

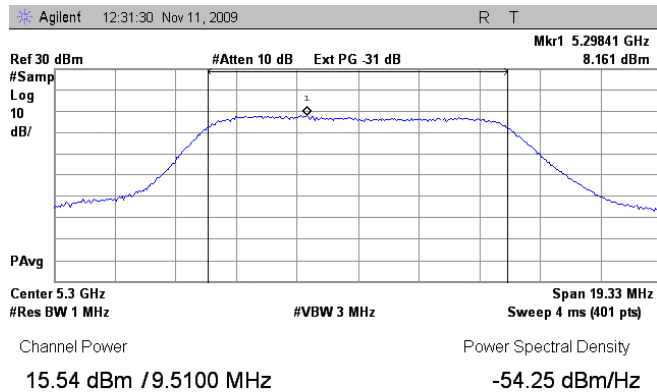
Plot 7.2.64 Peak output power and spectral power density, Antenna 1, 6.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.65 Peak output power and spectral power density, Antenna 1, 6.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



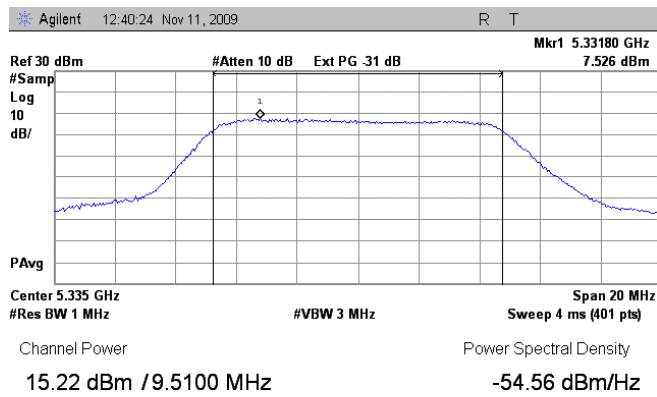


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

Plot 7.2.66 Peak output power and spectral power density, Antenna 1, 6.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



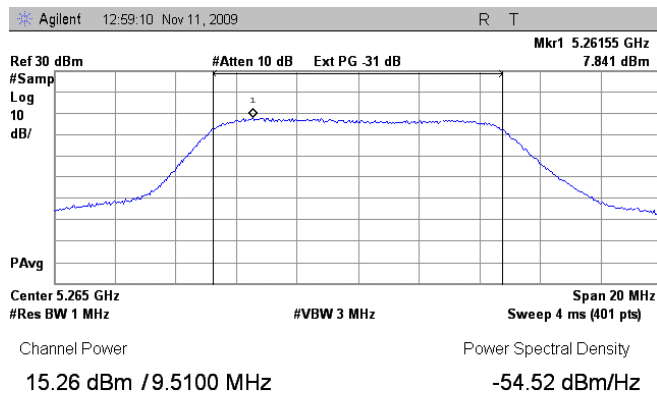


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

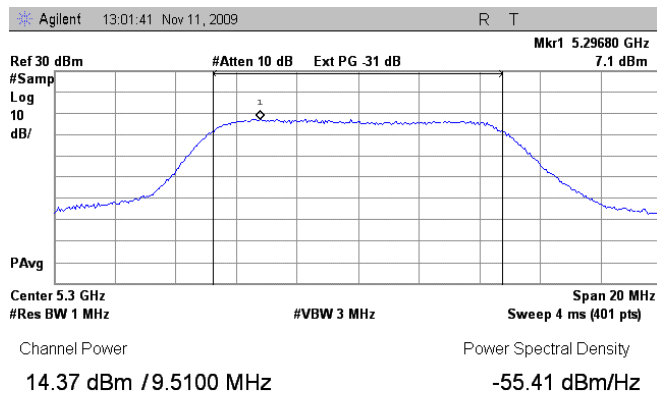
Plot 7.2.67 Peak output power and spectral power density, Antenna 2, 6.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.68 Peak output power and spectral power density, Antenna 2, 6.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



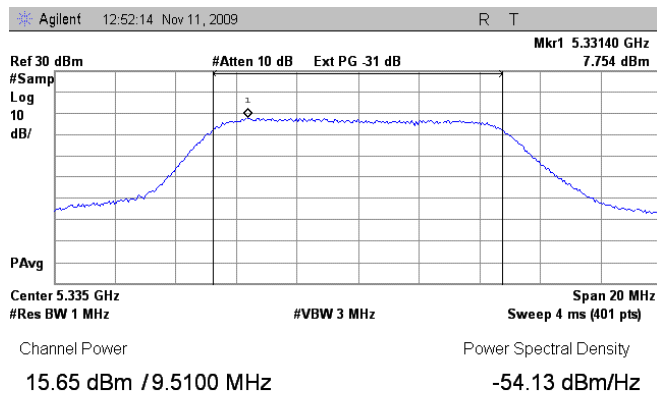


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

Plot 7.2.69 Peak output power and spectral power density, Antenna 2, 6.5 dBi, MIMO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM





<b>Test specification:</b> FCC section 15. 407(a)(2), Peak output power and peak power spectral density			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/11/2009 1:10:18 PM			
<b>Temperature:</b> 25.3 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 44 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

**Table 7.2.32 Conducted output power test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 1  
 ANTENNA GAIN: 6.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 5.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel MHz	26 dB BW, MHz	Pmeas, dBm	Limit, dBm	Margin*, dB	Verdict
5265.00	9.51	18.20	20.78	-2.58	Pass
5300.00	9.51	18.67	20.78	-2.11	Pass
5335.00	9.51	18.75	20.78	-2.03	Pass

\* - Margin, dB = Pmeas, dBm – Limit, dBm

**Table 7.2.33 Conducted output power spectral density test results**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DETECTOR USED: Sample  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 POWER MEASUREMENT OPTION: 2  
 ANTENNA GAIN: 6.5 dBi  
 FEEDER LOSS: 0.7 dB  
 ANTENNA ASSEMBLY GAIN: 5.8 dBi (Antenna gain, dBi – feeder loss, dB )  
 EBW: 10 MHz  
 MODE: SISO  
 ANTENNA PORT: Antenna 1 (worst case power and power density)

Channel, MHz	Pmeas, dBm	Limit, dBm	Margin, dB	Verdict
5265.00	10.53	11.00	-0.47	Pass
5300.00	10.88	11.00	-0.12	Pass
5335.00	10.66	11.00	-0.34	Pass

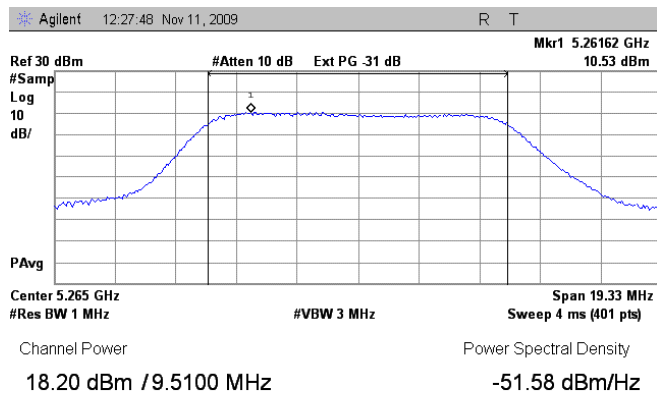
\* - Margin, dB = EIRP total, dBm/MHz – Limit EIRP, dBm/MHz



<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

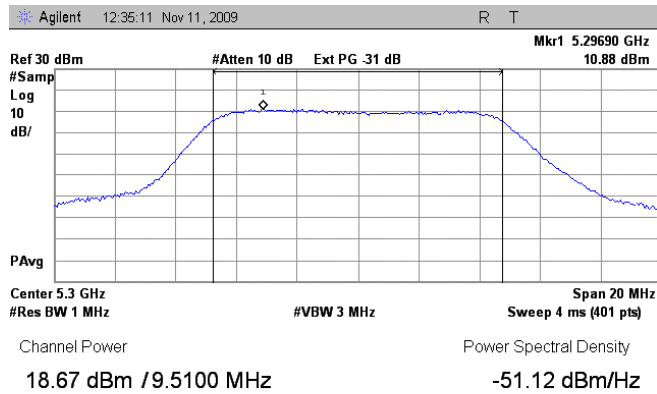
Plot 7.2.70 Peak output power and spectral power density, Antenna 1, 6.5 dBi, SISO mode, 10 MHz EBW

Frequency:	5265 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



Plot 7.2.71 Peak output power and spectral power density, Antenna 1, 6.5 dBi, SISO mode, 10 MHz EBW

Frequency:	5300 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM



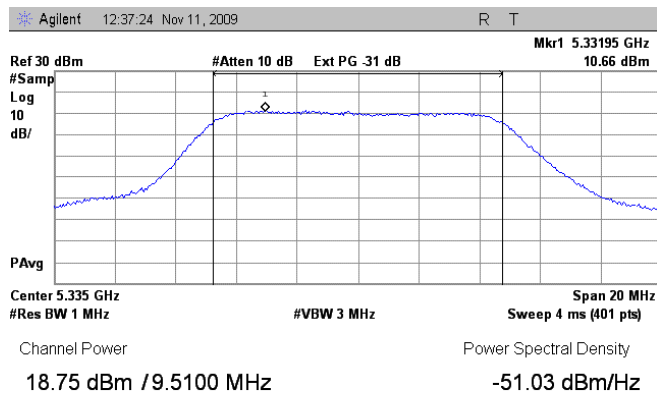


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<b>Test specification: FCC section 15. 407(a)(2), Peak output power and peak power spectral density</b>			
Test procedure: FCC Public Notice DA 02-2138, Appendix A			
Test mode: Compliance		Verdict: PASS	
Date & Time: 11/11/2009 1:10:18 PM			
Temperature: 25.3 °C	Air Pressure: 1010 hPa	Relative Humidity: 44 %	Power Supply: 120 VAC
Remarks: 6.5 dBi antenna			

Plot 7.2.72 Peak output power and spectral power density, Antenna 1, 6.5 dBi, SISO mode, 10 MHz EBW

Frequency:	5335 MHz
Channel BW:	10 MHz
Modulation parameters:	64QAM







<b>Test specification:</b> FCC section 15. 407(f), RF exposure			
<b>Test procedure:</b> 47 CFR, Section 1.1307(b)1			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/21/2009 4:19:02 PM			
<b>Temperature:</b> 25°C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 40 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

## 7.3 RF exposure

### 7.3.1 General

This test was performed to determine the minimum safe distance between the transmitter antenna and human to avoid public exposure in excess of limits for general population (uncontrolled exposure). Specification test limits are given in Table 7.3.1.

Table 7.3.1 RF exposure limits

Frequency range, MHz	Power density	
	mW/cm <sup>2</sup>	W/m <sup>2</sup>
5250.0 – 5350.0 MHz	1.00	10.0

\* - Power density limit within 300 - 1500 MHz was calculated according to the following equation:  $S = F / 1500$ , where S is power density in mW/cm<sup>2</sup> and F is frequency in MHz.

### 7.3.2 Safe distance calculation for fixed transmitter

The minimum safe distance was calculated from the following equation as provided in Table 7.3.2:

$$r = \sqrt{P \times G / (4 \times \pi \times S)}$$

where S is power density in W/m<sup>2</sup>, P is the transmitter output power in W, G is the transmitter antenna numeric gain and r is distance to transmit antenna in m.

With power density equal to the RF exposure limit the minimum safe distance was calculated according to the following equation:  $r = \sqrt{P \times G / (4 \times \pi \times S)}$

Table 7.3.2 Safe distance calculation

ASSIGNED FREQUENCY:	5250.0 – 5350.0 MHz
EQUIPMENT INTENDED USE:	Fixed*
EBW:	10 MHz
MODE:	Low Channel MIMO mode with 9.5 dBi antenna Mid Channel SISO mode with 17 dBi antenna High Channel SISO mode with 9.5 dBi antenna

Carrier frequency MHz	Peak output power, dBm	Antenna gain, dBi	EIRP		Power density limit, W/m <sup>2</sup>	Safe distance, m**	Intended separation, r	Verdict
			dBm	W				
5265.0	15.03	9.5	24.53	0.2838	10.00	0.05	2.0	Pass
5300.0	7.7	17	24.70	0.2951	10.00	0.05	2.0	Pass
5335.0	14.97	9.5	24.47	0.2799	10.00	0.05	2.0	Pass
5265.00	18.20	6.50	24.70	0.30	10.00	0.05	2.0	Pass
5300.00	18.67	6.50	25.17	0.33	10.00	0.05	2.0	Pass
5335.00	18.75	6.50	25.25	0.33	10.00	0.05	2.0	Pass

\* - The equipment deemed fixed as intended for use at a distance of more than 2.0 m from humans.



<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	PASS
<b>Date &amp; Time:</b>	9/21/2009 3:50:54 PM		
<b>Temperature:</b> 25 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 38 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

## 7.4 Ratio of the peak excursion of the modulation envelope to the peak transmit power

### 7.4.1 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 7.4.1.

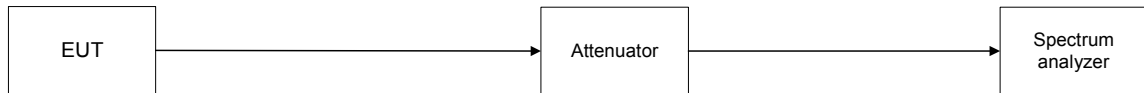
Table 7.4.1 Peak excursion limits

Assigned frequency, MHz	Maximum peak excursion, dB/MHz
5250 - 5350	13.0

### 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 to 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 frequency range.
- 7.4.2.4 The maximum peak excursion of modulation envelope was measured as a difference between 2 traces.
- 7.4.2.5 The test results were recorded in, and shown in the associated plots.

Figure 7.4.1 Peak excursion ratio measurement setup





<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/21/2009 3:50:54 PM			
<b>Temperature:</b> 25 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 38 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

Table 7.4.2 Peak excursion test results

ASSIGNED FREQUENCY RANGE: 5250.0 – 5350.0 MHz  
DETECTOR USED: 1-st trace : Peak, Max Hold  
2-nd trace : Sample, 100 Power Averaging  
TRANSMITTER OUTPUT POWER: Maximum for each EBW  
RESOLUTION BANDWIDTH: 1 MHz  
VIDEO BANDWIDTH: 3 MHz  
EBW: 5 MHz

Frequency, MHz	Modulation	1-st trace, dBm	2-nd trace, dBm	Peak excursion, dB	Limit, dB	Margin, dB	Verdict
<b>Low channel</b>							
5260.0	64QAM	17.42	7.974	9.45	13.0	-3.55	Pass
<b>Mid channel</b>							
5300.0	64QAM	18.28	7.804	10.48	13.0	-2.52	Pass
<b>High channel</b>							
5340.0	64QAM	18.27	8.179	10.09	13.0	-2.91	Pass

EBW: 10 MHz

Frequency, MHz	Modulation	1-st trace, dBm	2-nd trace, dBm	Peak excursion, dB	Limit, dB	Margin, dB	Verdict
<b>Low channel</b>							
5265.0	64QAM	17.24	6.129	11.11	13.0	-1.89	Pass
<b>Mid channel</b>							
5300.0	64QAM	17.81	8.362	9.45	13.0	-3.55	Pass
<b>High channel</b>							
5335.0	64QAM	17.52	7.757	9.76	13.0	-2.24	Pass

Reference numbers of test equipment used

HL 2909	HL 2952	HL 3440					
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Full description is given in Appendix A.

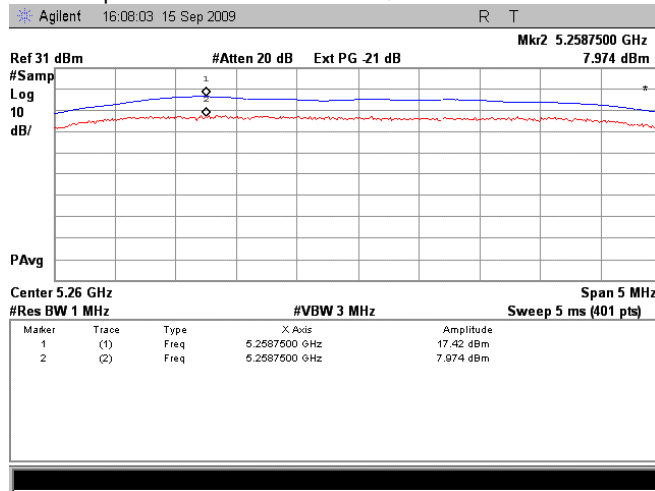


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<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:50:54 PM			
<b>Temperature:</b> 25 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 38 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

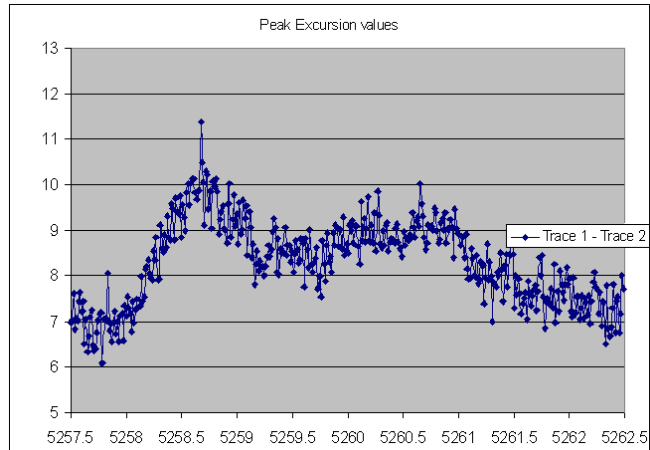
Plot 7.4.1 Peak excursion measurement

Frequency: 5260 MHz  
Channel BW: 5 MHz  
Modulation parameters: 64QAM



Plot 7.4.2 Peak excursion values

Frequency: 5260 MHz  
Channel BW: 5 MHz  
Modulation parameters: 64QAM



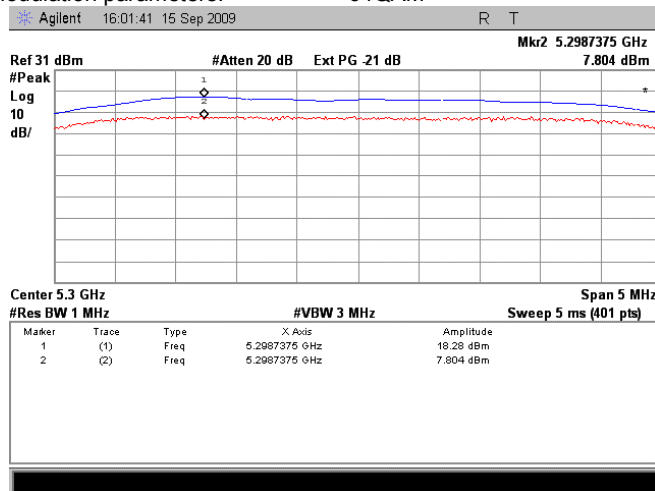


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:50:54 PM			
<b>Temperature:</b> 25 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 38 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

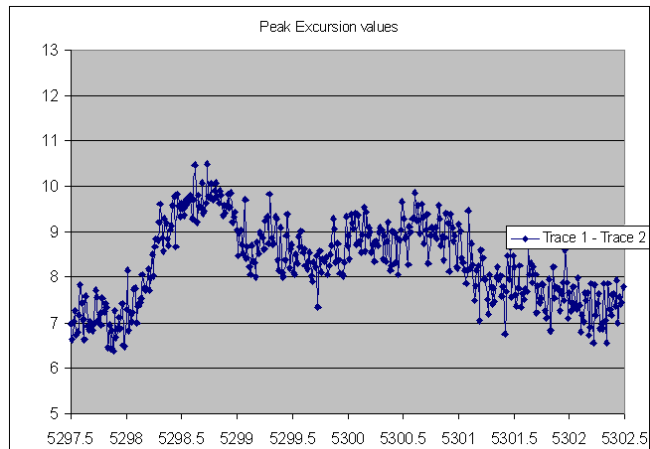
Plot 7.4.3 Peak excursion measurement

Frequency: 5300 MHz  
Channel BW: 5 MHz  
Modulation parameters: 64QAM



Plot 7.4.4 Peak excursion values

Frequency: 5300 MHz  
Channel BW: 5 MHz  
Modulation parameters: 64QAM



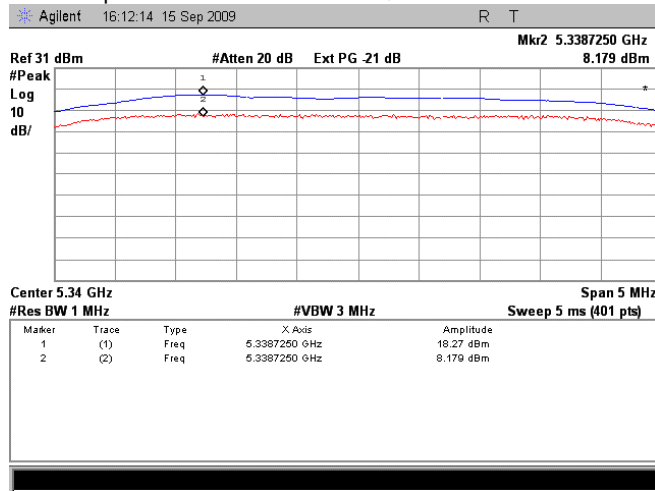


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:50:54 PM			
<b>Temperature:</b> 25 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 38 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

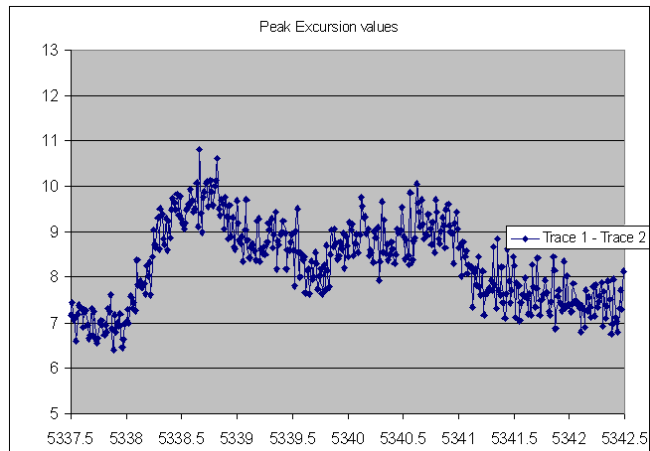
Plot 7.4.5 Peak excursion measurement

Frequency: 5340 MHz  
Channel BW: 5 MHz  
Modulation parameters: 64QAM



Plot 7.4.6 Peak excursion values

Frequency: 5340 MHz  
Channel BW: 5 MHz  
Modulation parameters: 64QAM



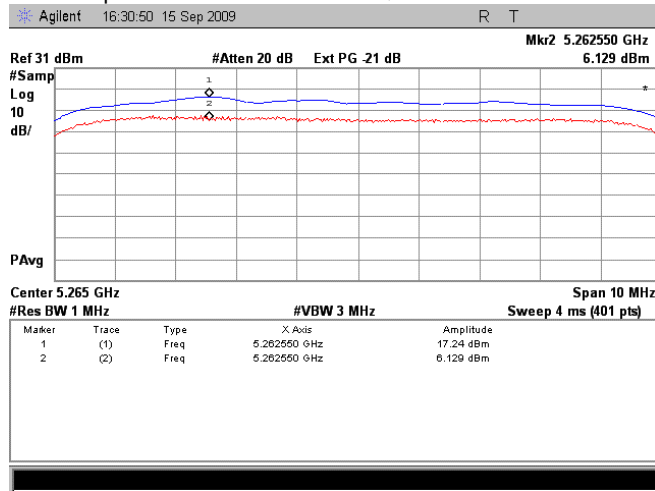


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:50:54 PM			
<b>Temperature:</b> 25 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 38 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

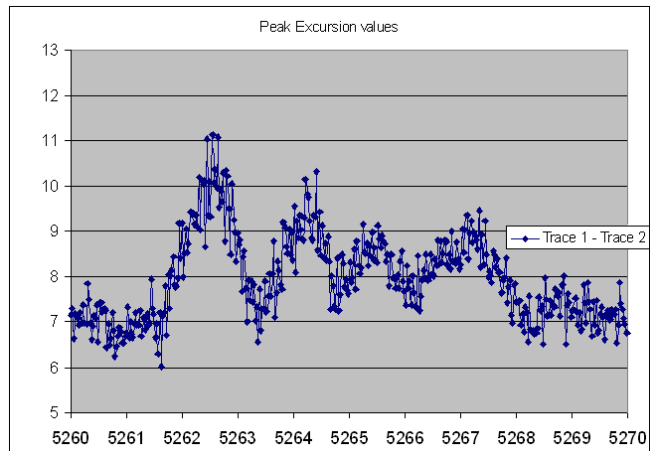
Plot 7.4.7 Peak excursion measurement

Frequency: 5265 MHz  
Channel BW: 10 MHz  
Modulation parameters: 64QAM



Plot 7.4.8 Peak excursion values

Frequency: 5265 MHz  
Channel BW: 10 MHz  
Modulation parameters: 64QAM



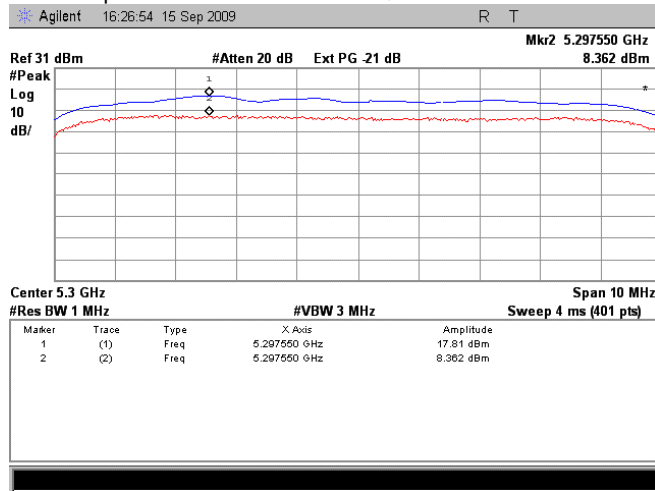


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<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:50:54 PM			
<b>Temperature:</b> 25 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 38 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

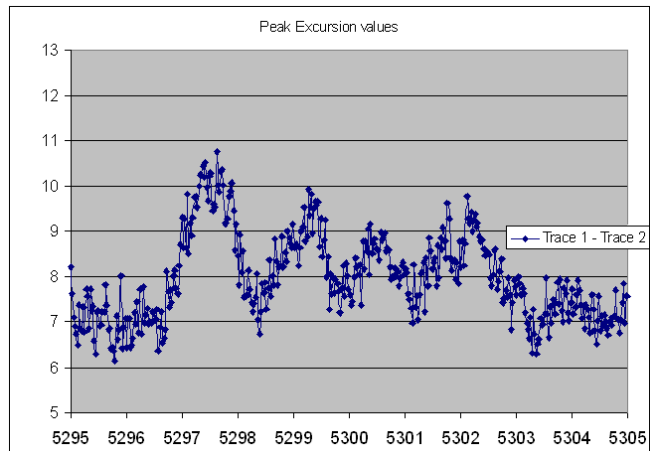
Plot 7.4.9 Peak excursion measurement

Frequency: 5300 MHz  
Channel BW: 10 MHz  
Modulation parameters: 64QAM



Plot 7.4.10 Peak excursion values

Frequency: 5300 MHz  
Channel BW: 10 MHz  
Modulation parameters: 64QAM





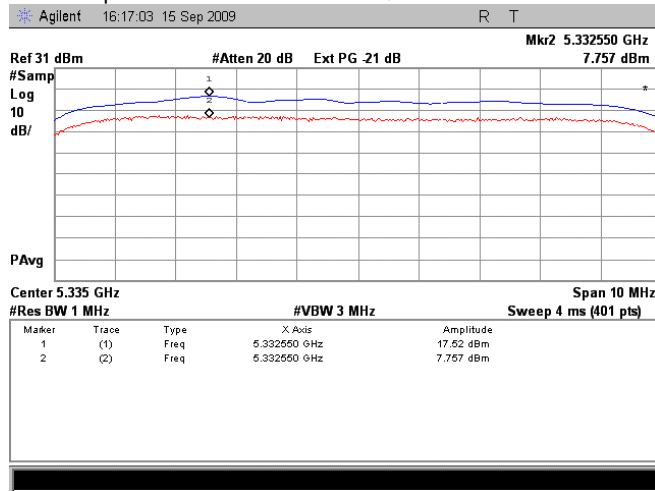


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/21/2009 3:50:54 PM			
<b>Temperature:</b> 25 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 38 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b>			

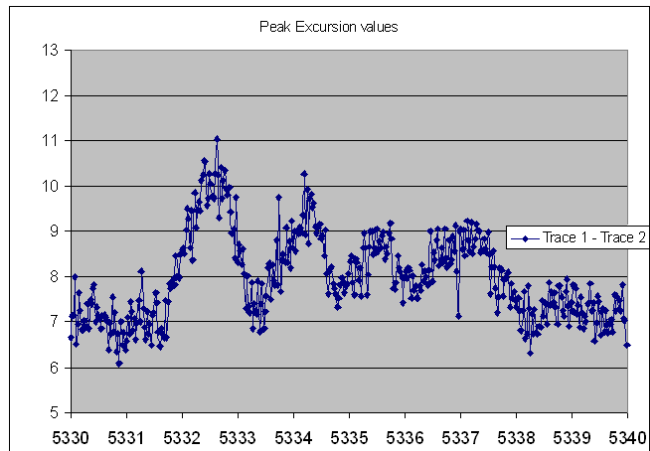
Plot 7.4.11 Peak excursion measurement

Frequency: 5335 MHz  
Channel BW: 10 MHz  
Modulation parameters: 64QAM



Plot 7.4.12 Peak excursion values

Frequency: 5335 MHz  
Channel BW: 10 MHz  
Modulation parameters: 64QAM





<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/11/2009 2:08:29 PM			
<b>Temperature:</b> 25.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 46 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

Table 7.4.3 Peak excursion test results

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 DETECTOR USED: 1-st trace : Peak, Max Hold  
 2-nd trace : Sample, 100 Power Averaging  
 TRANSMITTER OUTPUT POWER: Maximum for each EBW  
 RESOLUTION BANDWIDTH: 1 MHz  
 VIDEO BANDWIDTH: 3 MHz  
 EBW: 5 MHz

Frequency, MHz	Modulation	1-st trace, dBm	2-nd trace, dBm	Peak excursion, dB	Limit, dB	Margin, dB	Verdict
<b>Low channel</b>							
5260.0	64QAM	19.52	9.81	9.71	13.0	-3.29	Pass
<b>Mid channel</b>							
5300.0	64QAM	19.91	10.16	9.75	13.0	-3.25	Pass
<b>High channel</b>							
5340.0	64QAM	19.58	10.03	9.55	13.0	-3.45	Pass

EBW: 10 MHz

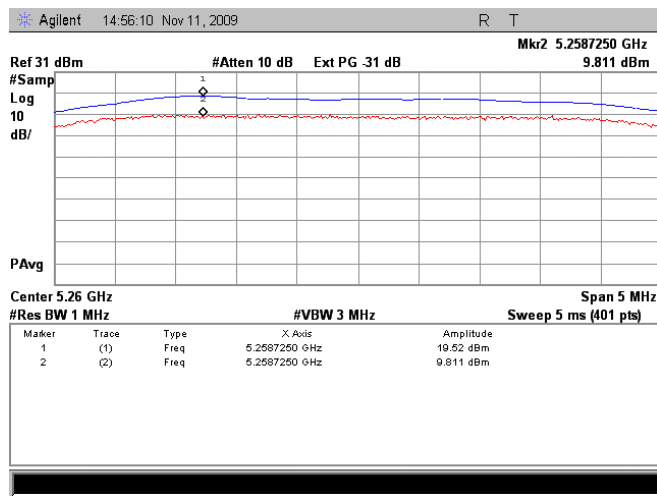
Frequency, MHz	Modulation	1-st trace, dBm	2-nd trace, dBm	Peak excursion, dB	Limit, dB	Margin, dB	Verdict
<b>Low channel</b>							
5260.0	64QAM	19.88	9.85	10.03	13.0	-2.97	Pass
<b>Mid channel</b>							
5300.0	64QAM	20.58	10.78	9.80	13.0	-3.20	Pass
<b>High channel</b>							
5340.0	64QAM	20.08	9.98	10.10	13.0	-2.90	Pass



<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/11/2009 2:08:29 PM			
<b>Temperature:</b> 25.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 46 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

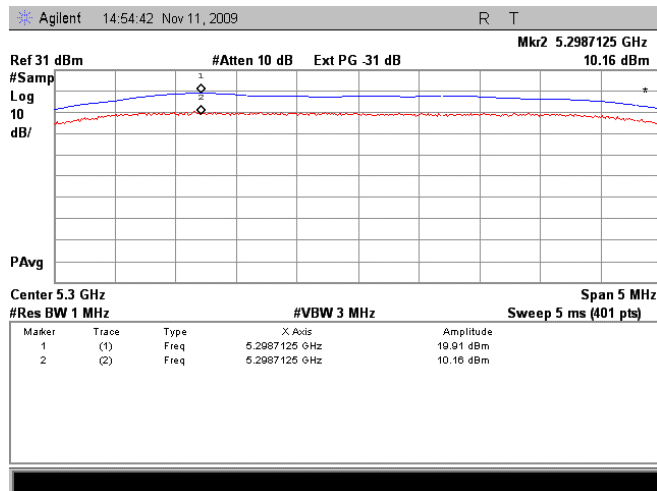
Plot 7.4.13 Peak excursion measurement

Frequency:	5260 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM



Plot 7.4.14 Peak excursion measurement

Frequency:	5300 MHz
Channel BW:	5 MHz
Modulation parameters:	64QAM

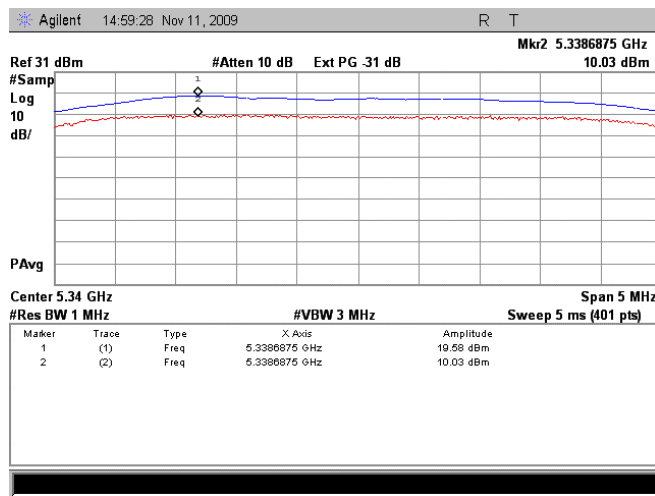




<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/11/2009 2:08:29 PM			
<b>Temperature:</b> 25.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 46 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

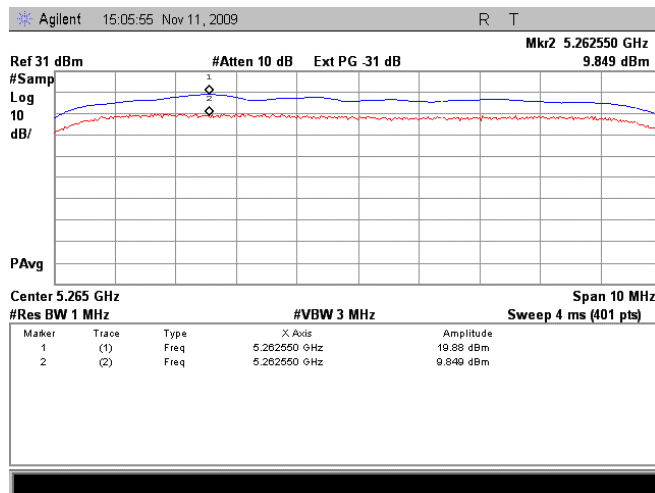
Plot 7.4.15 Peak excursion measurement

<b>Frequency:</b>	5340 MHz
<b>Channel BW:</b>	5 MHz
<b>Modulation parameters:</b>	64QAM



Plot 7.4.16 Peak excursion measurement

<b>Frequency:</b>	5265 MHz
<b>Channel BW:</b>	10 MHz
<b>Modulation parameters:</b>	64QAM



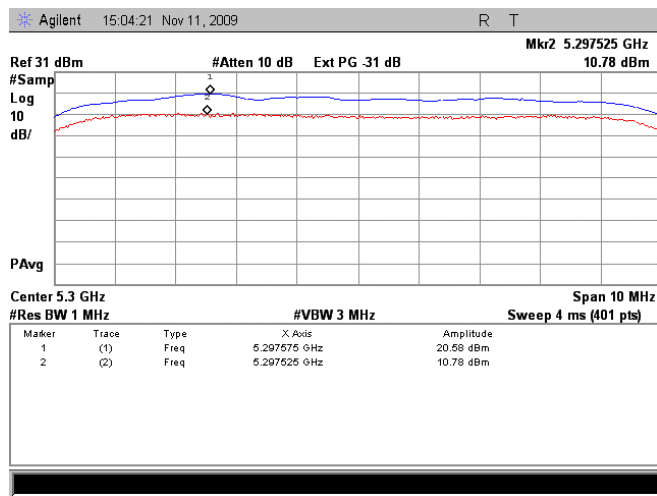


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<b>Test specification:</b> FCC section 15.407(a)(6), Ratio of the peak excursion of the modulation envelope to the peak transmit power			
<b>Test procedure:</b> FCC Public Notice DA 02-2138, Appendix A			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/11/2009 2:08:29 PM			
<b>Temperature:</b> 25.5 °C	<b>Air Pressure:</b> 1010 hPa	<b>Relative Humidity:</b> 46 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

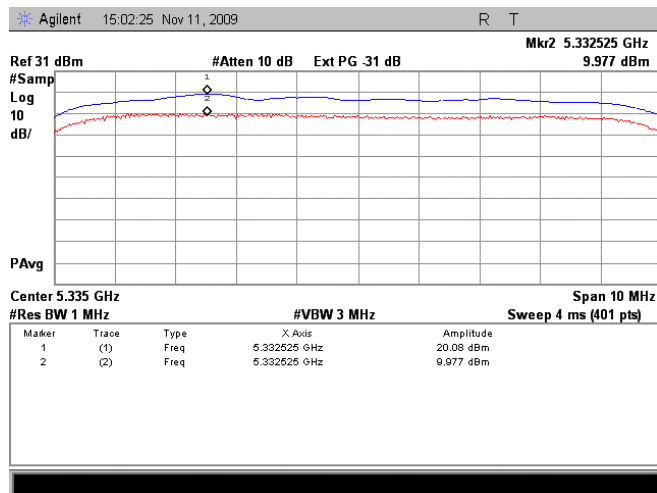
Plot 7.4.17 Peak excursion measurement

<b>Frequency:</b>	5300 MHz
<b>Channel BW:</b>	10 MHz
<b>Modulation parameters:</b>	64QAM



Plot 7.4.18 Peak excursion measurement

<b>Frequency:</b>	5335 MHz
<b>Channel BW:</b>	10 MHz
<b>Modulation parameters:</b>	64QAM





<b>Test specification:</b>	<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>		
<b>Test procedure:</b>	Public notice DA 00-705 / ANSI C63.4, Section 13.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	9/23/2009 9:27:24 AM		
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

## 7.5 Field strength of spurious emissions with integral antenna

### 7.5.1 General

This test was performed to measure field strength of spurious emissions from the EUT. Specification test limits are given in Table 7.5.1.

Table 7.5.1 Radiated spurious emissions limits

Frequency, MHz	Field strength at 3 m within restricted bands, dB(μV/m)*			Attenuation of field strength of spurious versus carrier outside restricted bands, dBc***
	Peak	Quasi Peak	Average	
0.009 – 0.090	148.5 – 128.5	NA	128.5 – 108.5**	20.0
0.090 – 0.110	NA	108.5 – 106.8**	NA	
0.110 – 0.490	126.8 – 113.8	NA	106.8 – 93.8**	
0.490 – 1.705	NA	73.8 – 63.0**	NA	
1.705 – 30.0*		69.5		
30 – 88		40.0		
88 – 216		43.5		
216 – 960		46.0		
960 – 1000		54.0		
1000 – 10 <sup>th</sup> harmonic	74.0	NA	54.0	

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

$$\text{Lim}_{S_2} = \text{Lim}_{S_1} + 40 \log(S_1/S_2),$$

where  $S_1$  and  $S_2$  – 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.

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

**7.5.2.1** The EUT was set up as shown in Figure 7.5.1, energized and the performance check was conducted.

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

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

### 7.5.3 Test procedure for spurious emission field strength measurements above 30 MHz

**7.5.3.1** The EUT was set up as shown in Figure 7.5.2, energized and the performance check was conducted.

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

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



<b>Test specification:</b>	<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>		
<b>Test procedure:</b>	Public notice DA 00-705 / ANSI C63.4, Section 13.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	9/23/2009 9:27:24 AM		
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

Figure 7.5.1 Setup for spurious emission field strength measurements below 30 MHz

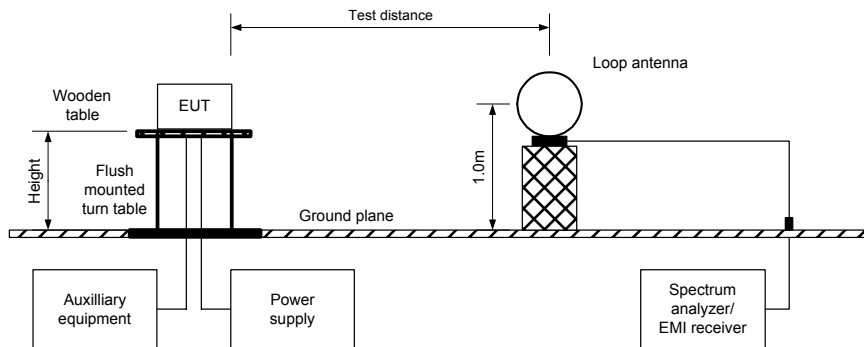
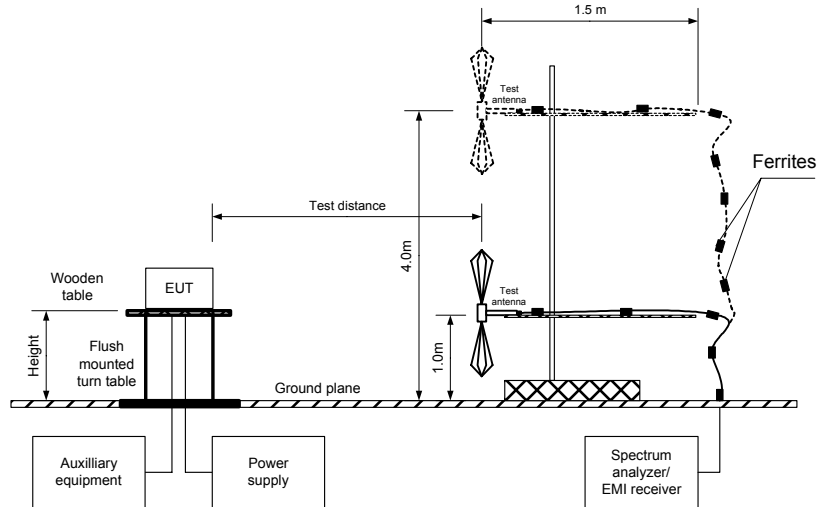


Figure 7.5.2 Setup for spurious emission field strength measurements above 30 MHz





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<b>Test specification:</b>		<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>	
<b>Test procedure:</b>		Public notice DA 00-705 / ANSI C63.4, Section 13.1.4	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	9/23/2009 9:27:24 AM		
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

**Table 7.5.2 Field strength of emissions outside restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: Maximum  
 DETECTOR USED: Peak  
 RESOLUTION BANDWIDTH: 100 kHz  
 VIDEO BANDWIDTH: 300 kHz  
 EBW: 10 MHz (maximum, aggregate power)

Frequency MHz	Field strength of spurious, dB(µV/m)	Antenna polarization	Antenna height, m	Azimuth, degrees*	Field strength of carrier, dB(µV/m)	Attenuation below carrier, dBc	Limit, dBc	Margin, dB**	Verdict
<b>Low carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass
<b>Mid carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass
<b>High carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass

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





<b>Test specification:</b>		<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>	
<b>Test procedure:</b>		Public notice DA 00-705 / ANSI C63.4, Section 13.1.4	
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	9/23/2009 9:27:24 AM		
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

**Table 7.5.3 Field strength of spurious emissions above 1 GHz within restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum  
 TRANSMITTER OUTPUT POWER: Maximum  
 DETECTOR USED: Peak  
 RESOLUTION BANDWIDTH: 1000 kHz  
 TEST ANTENNA TYPE: Double ridged guide  
 EBW: 10 MHz (maximum, aggregate power)

Frequency MHz	Antenna		Azimuth degrees	Peak field strength(VBW=3 MHz)			Average field strength(VBW=10 Hz)			Verdict	
	Polarization	Height m		Measured dB(μV/m)	Limit, dB(μV/m)	Margin, dB**	Measured dB(μV/m)	Calculated dB(μV/m)	Limit, dB(μV/m)		Margin dB***
<b>Low carrier frequency</b>											
1440.000	Horizontal	1.2	30	46.62	74.0	-27.38	43.95	39.52	54.0	-14.48	Pass
<b>Mid carrier frequency</b>											
1440.003	Horizontal	1.2	30	46.60	74.0	-27.4	43.95	39.52	54.0	-14.48	Pass
<b>High carrier frequency</b>											
1440.000	Horizontal	1.2	30	46.55	74.0	-27.35	43.97	39.54	54.0	-14.46	Pass

\*- EUT front panel refers to 0 degrees position of turntable.  
 \*\*- Margin = Measured field strength - specification limit.  
 \*\*\*- Margin = Calculated field strength - specification limit,  
 where Calculated field strength = Measured field strength + average factor.

**Table 7.5.4 Average factor calculation**

Transmission pulse		Transmission burst		Transmission train duration, ms	Average factor, dB
Duration, ms	Period, ms	Duration, ms	Period, ms		
3	5	-	-	-	-4.43

\*- Average factor was calculated as follows  
 for pulse train shorter than 100 ms:

$$Average\ factor = 20 \times \log_{10} \left( \frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{Train\ duration} \times Number\ of\ bursts\ within\ pulse\ train \right)$$

for pulse train longer than 100 ms:

$$Average\ factor = 20 \times \log_{10} \left( \frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{100\ ms} \times Number\ of\ bursts\ within\ 100\ ms \right)$$



<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

**Table 7.5.5 Field strength of spurious emissions below 1 GHz within restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum  
 TRANSMITTER OUTPUT POWER: Maximum  
 RESOLUTION BANDWIDTH: 1 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)  
 Biconical (30 MHz – 200 MHz)  
 Log periodic (200 MHz – 1000 MHz)  
 Biconilog (30 MHz – 1000 MHz)  
 10 MHz (maximum, aggregate power)

EBW:

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'				
<b>Low carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass
<b>Mid carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass
<b>High carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass

\*- Margin = Measured emission - specification limit.

\*\*- EUT front panel refer to 0 degrees position of turntable.

**Table 7.5.6 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	

**Reference numbers of test equipment used**

HL 0446	HL 0521	HL 0604	HL 0768	HL 0769	HL 1424	HL 1425	HL 2254
HL 2387	HL 2432	HL 2697	HL 2883	HL 2909	HL 2952	HL 3123	HL 3286
HL 3351	HL 3352	HL 3616					

Full description is given in Appendix A.

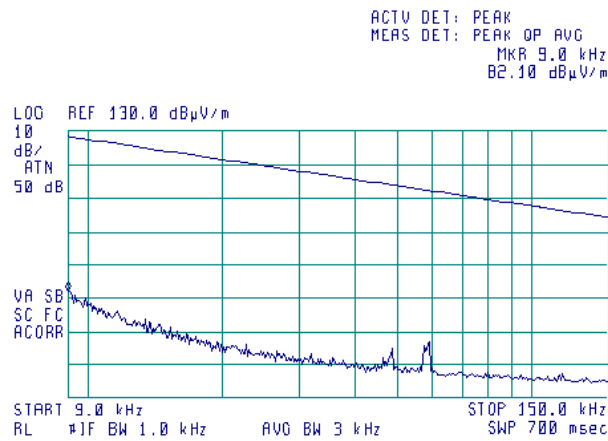


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

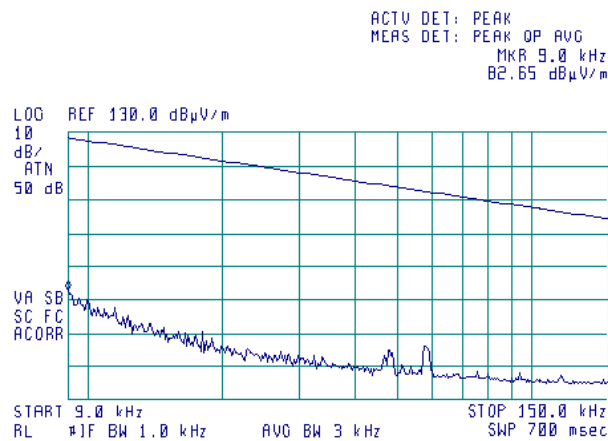
**Plot 7.5.1 Radiated emission measurements from 9 to 150 kHz at the low carrier frequency**

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



**Plot 7.5.2 Radiated emission measurements from 9 to 150 kHz at the mid carrier frequency**

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



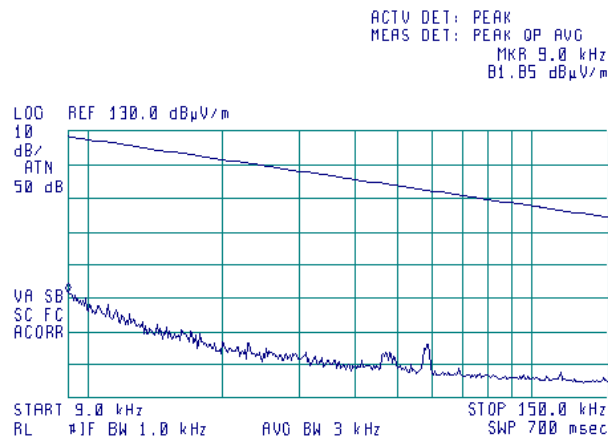


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

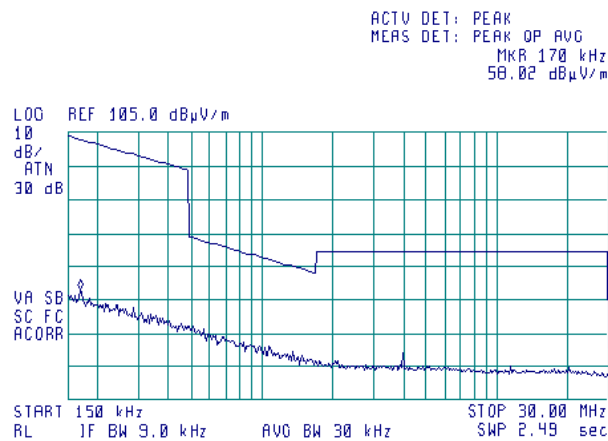
**Plot 7.5.3 Radiated emission measurements from 9 to 150 kHz at the high carrier frequency**

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



**Plot 7.5.4 Radiated emission measurements from 0.15 to 30 MHz at the low carrier frequency**

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



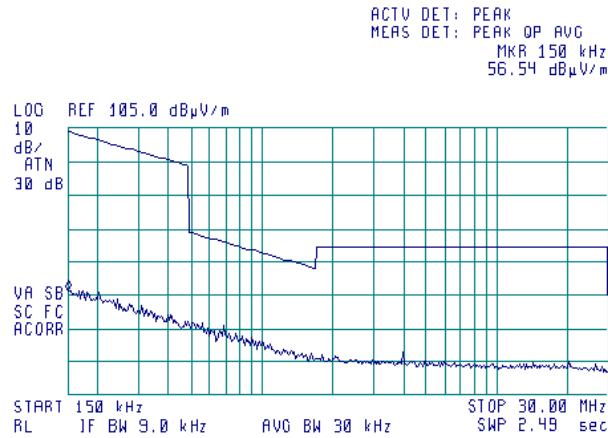


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

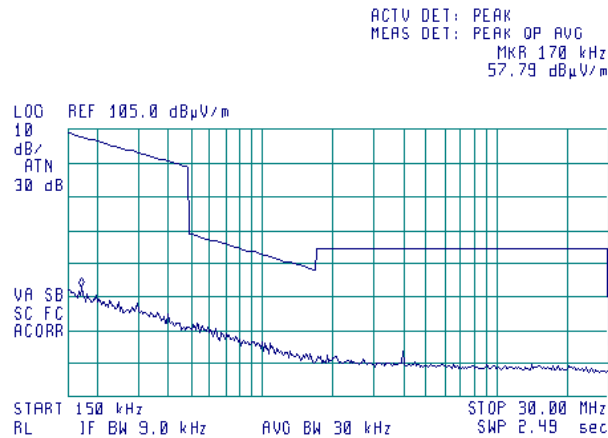
**Plot 7.5.5 Radiated emission measurements from 0.15 to 30 MHz at the mid carrier frequency**

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



**Plot 7.5.6 Radiated emission measurements from 0.15 to 30 MHz at the high carrier frequency**

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



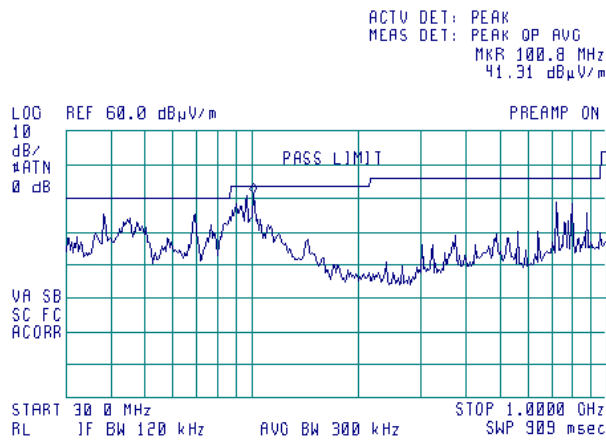


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

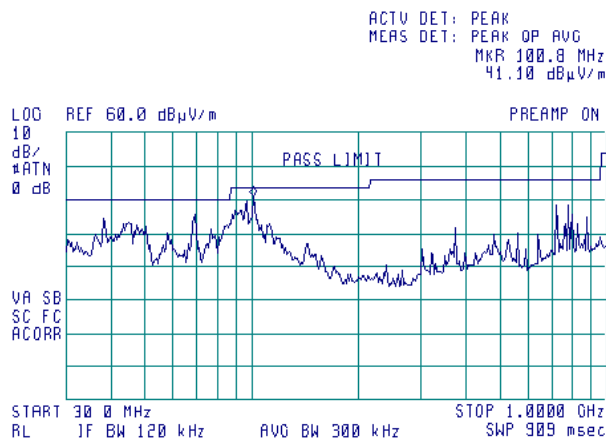
**Plot 7.5.7 Radiated emission measurements from 30 to 1000 MHz at the low carrier frequency**

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



**Plot 7.5.8 Radiated emission measurements from 30 to 1000 MHz at the mid carrier frequency**

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



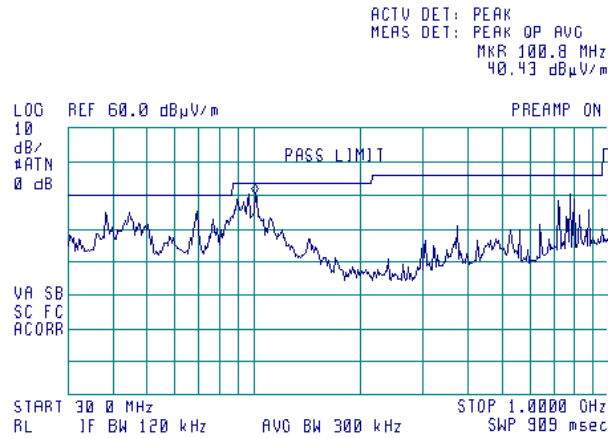


HERMON LABORATORIES

<b>Test specification:</b>	<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>		
<b>Test procedure:</b>	Public notice DA 00-705 / ANSI C63.4, Section 13.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	9/23/2009 9:27:24 AM		
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

**Plot 7.5.9 Radiated emission measurements from 30 to 1000 MHz at the high carrier frequency**

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



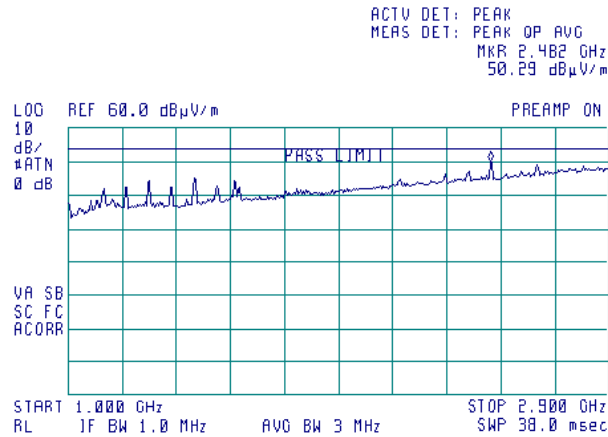


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

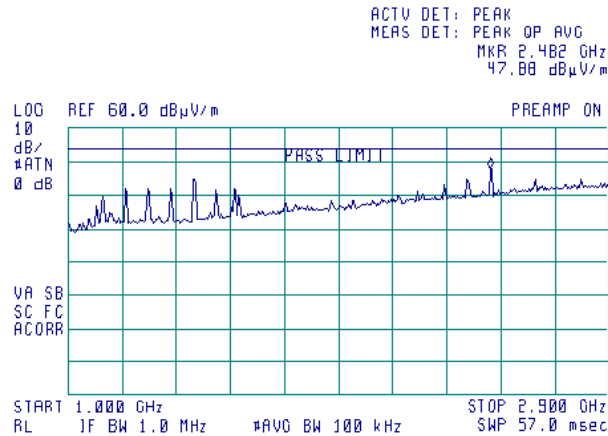
**Plot 7.5.10 Radiated emission measurements from 1000 to 2900 MHz at the low carrier frequency**

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



**Plot 7.5.11 Radiated emission measurements from 1000 to 2900 MHz at the low carrier frequency**

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





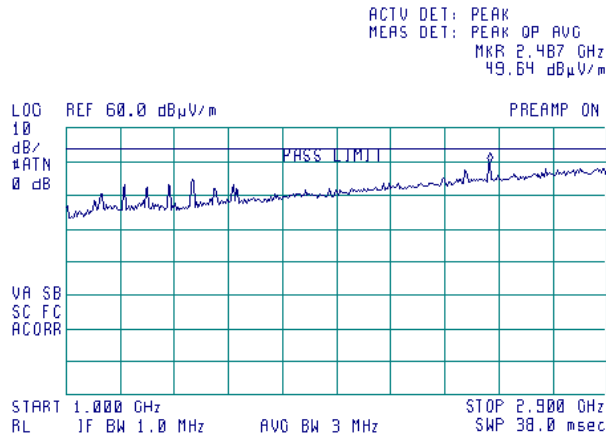


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

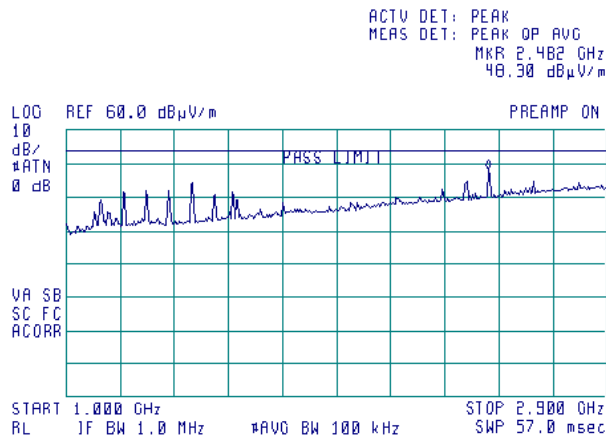
Plot 7.5.12 Radiated emission measurements from 1000 to 2900 MHz at the mid carrier frequency

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



Plot 7.5.13 Radiated emission measurements from 1000 to 2900 MHz at the mid carrier frequency

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



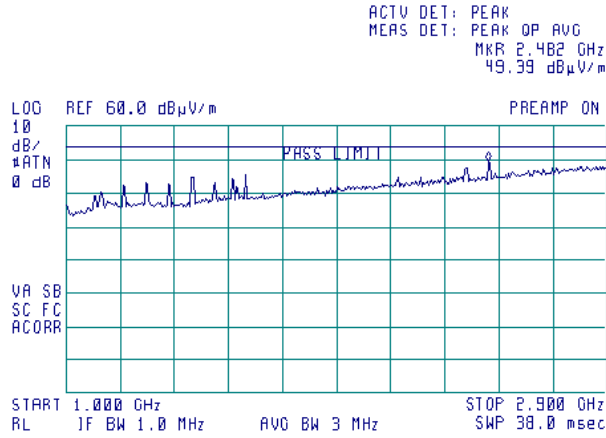


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

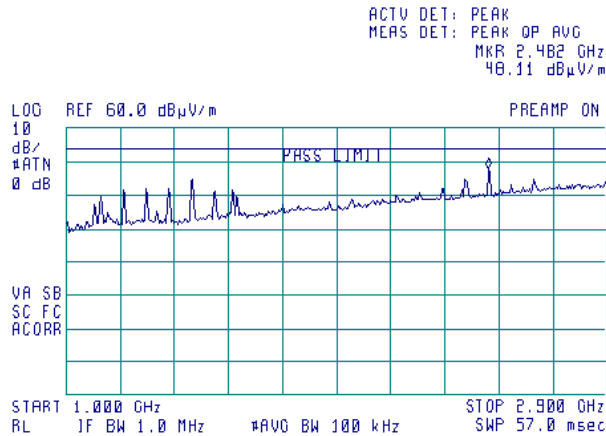
**Plot 7.5.14 Radiated emission measurements from 1000 to 2900 MHz at the high carrier frequency**

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



**Plot 7.5.15 Radiated emission measurements from 1000 to 2900 MHz at the high carrier frequency**

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



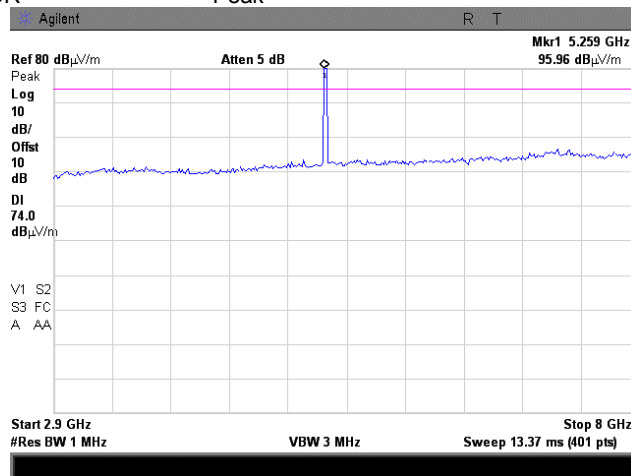


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

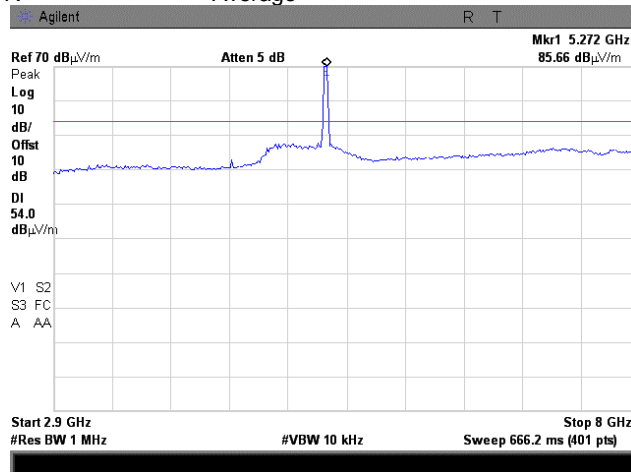
Plot 7.5.16 Radiated emission measurements from 2900 to 8000 MHz at the low carrier frequency

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



Plot 7.5.17 Radiated emission measurements from 2900 to 8000 MHz at the low carrier frequency

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



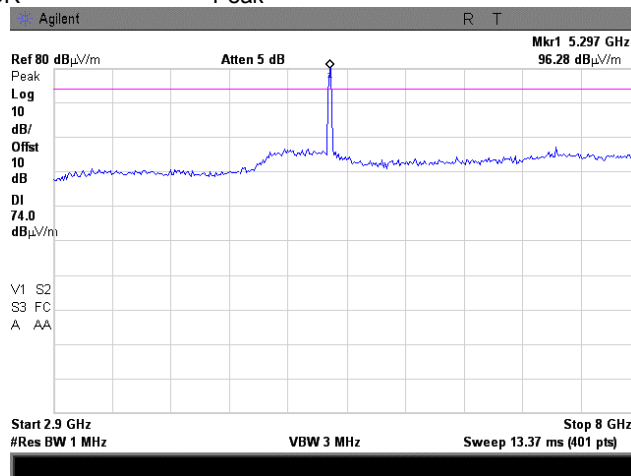


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

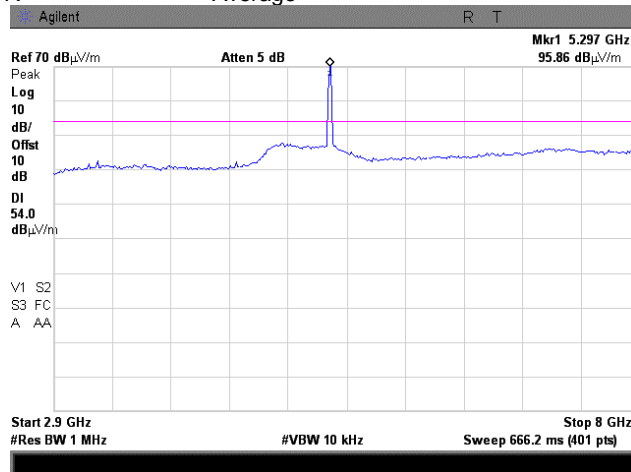
Plot 7.5.18 Radiated emission measurements from 2900 to 8000 MHz at the mid carrier frequency

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



Plot 7.5.19 Radiated emission measurements from 2900 to 8000 MHz at the mid carrier frequency

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



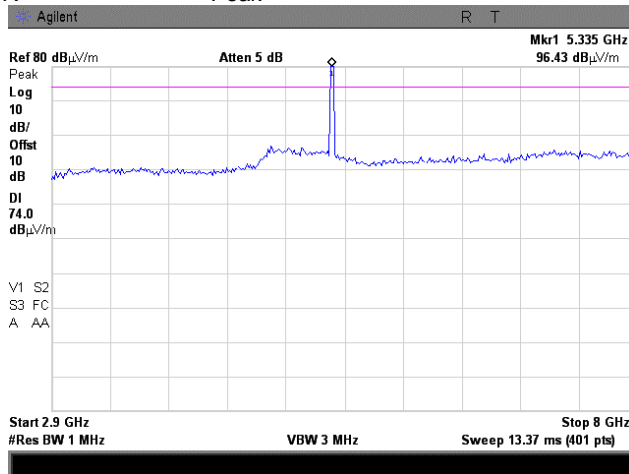


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

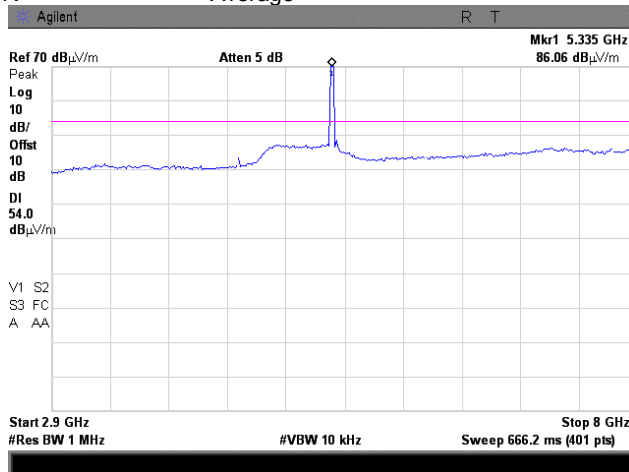
Plot 7.5.20 Radiated emission measurements from 2900 to 8000 MHz at the high carrier frequency

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



Plot 7.5.21 Radiated emission measurements from 2900 to 8000 MHz at the high carrier frequency

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



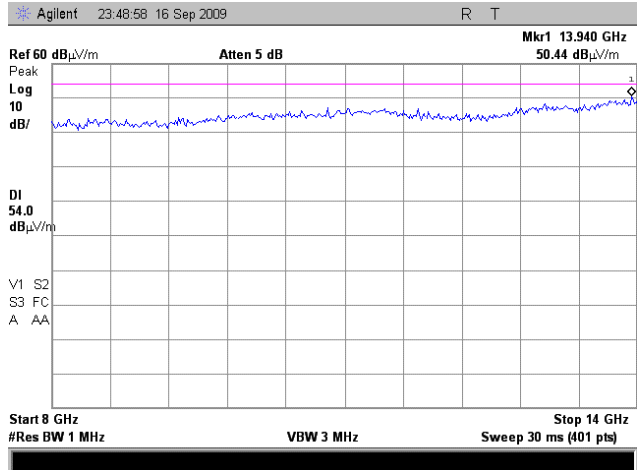


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

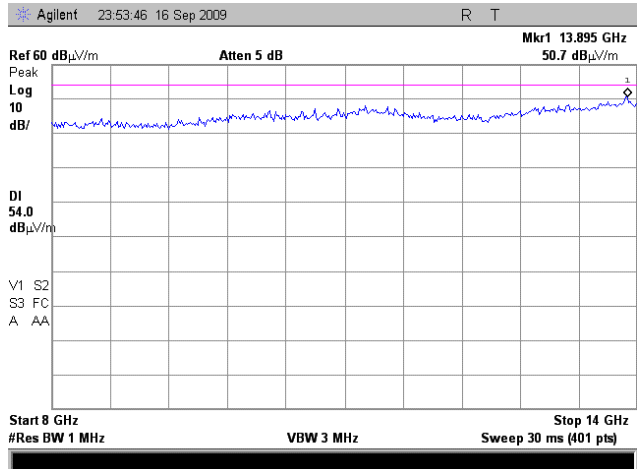
Plot 7.5.22 Radiated emission measurements from 8000 to 14000 MHz at the low carrier frequency

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



Plot 7.5.23 Radiated emission measurements from 8000 to 14000 MHz at the mid carrier frequency

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



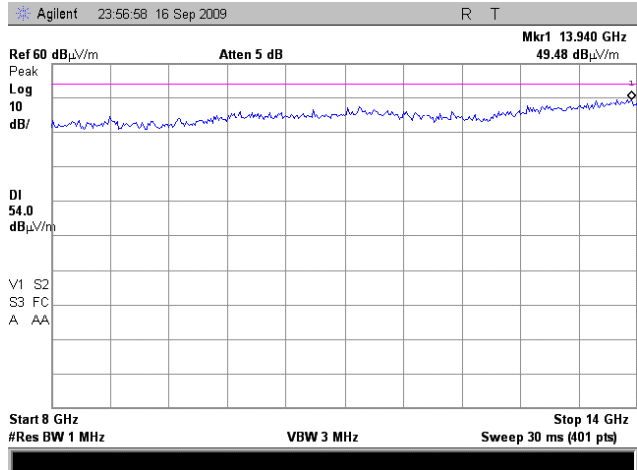


HERMON LABORATORIES

<b>Test specification:</b>	<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>		
<b>Test procedure:</b>	Public notice DA 00-705 / ANSI C63.4, Section 13.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	9/23/2009 9:27:24 AM		
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

**Plot 7.5.24 Radiated emission measurements from 8000 to 14000 MHz at the high carrier frequency**

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



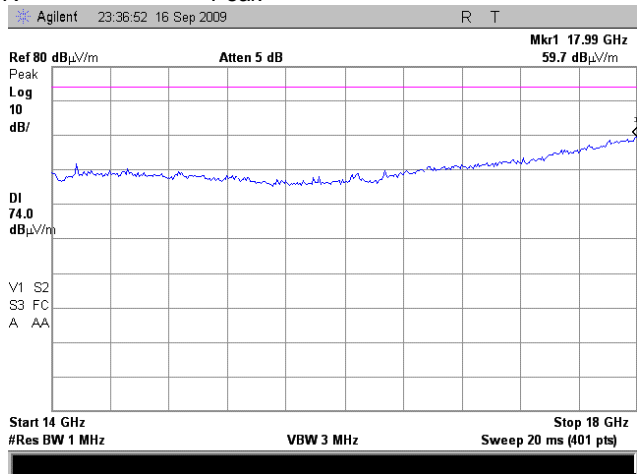


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

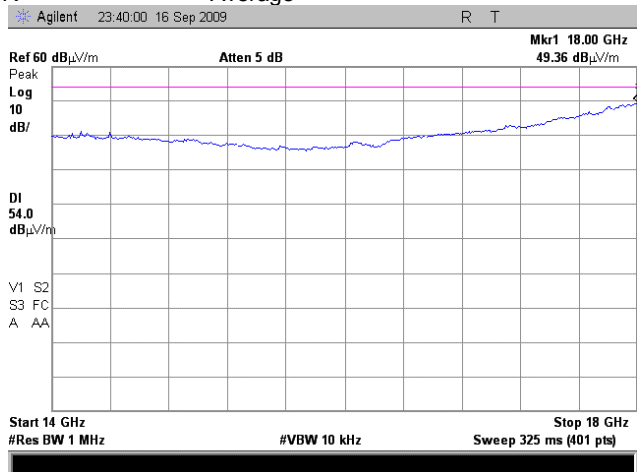
Plot 7.5.25 Radiated emission measurements from 14000 to 18000 MHz at the low carrier frequency

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



Plot 7.5.26 Radiated emission measurements from 14000 to 18000 MHz at the low carrier frequency

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





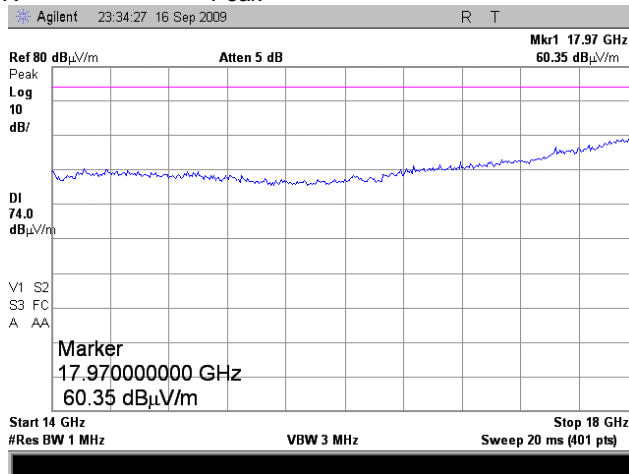


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

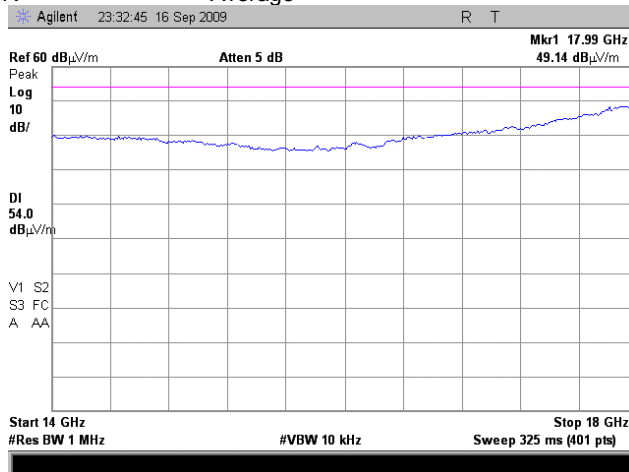
Plot 7.5.27 Radiated emission measurements from 14000 to 18000 MHz at the mid carrier frequency

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



Plot 7.5.28 Radiated emission measurements from 14000 to 18000 MHz at the mid carrier frequency

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



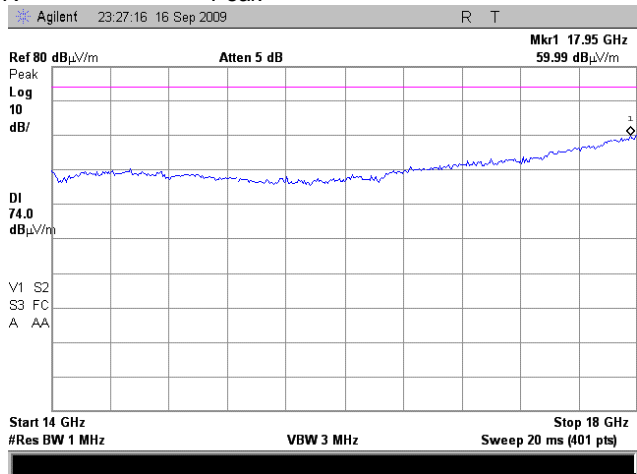


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

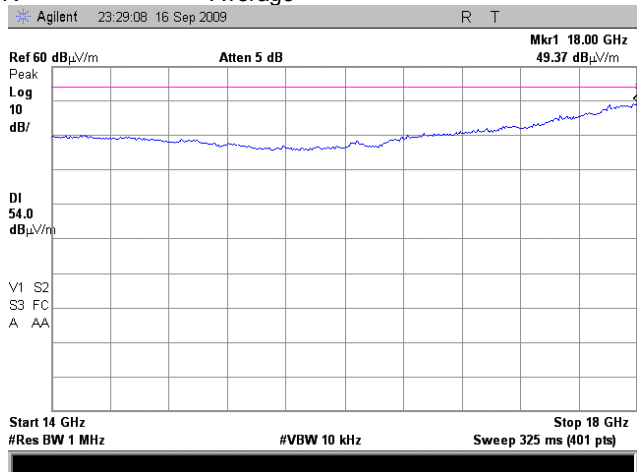
Plot 7.5.29 Radiated emission measurements from 14000 to 18000 MHz at the high carrier frequency

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



Plot 7.5.30 Radiated emission measurements from 14000 to 18000 MHz at the high carrier frequency

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



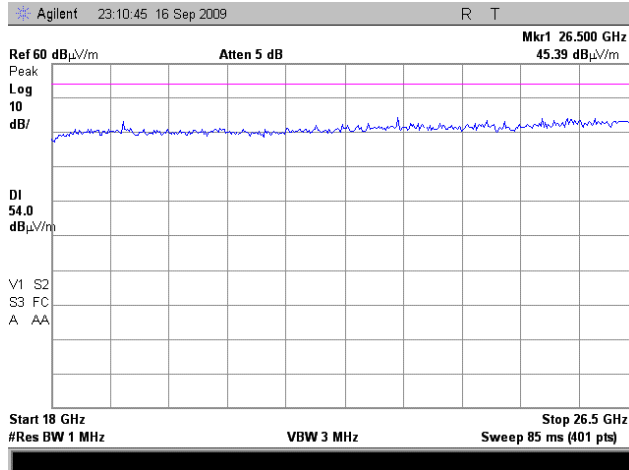


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

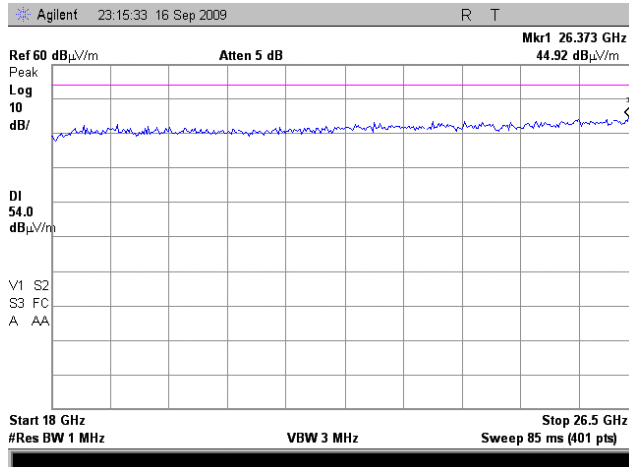
Plot 7.5.31 Radiated emission measurements from 18000 to 26500 MHz at the low carrier frequency

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



Plot 7.5.32 Radiated emission measurements from 18000 to 26500 MHz at the mid carrier frequency

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



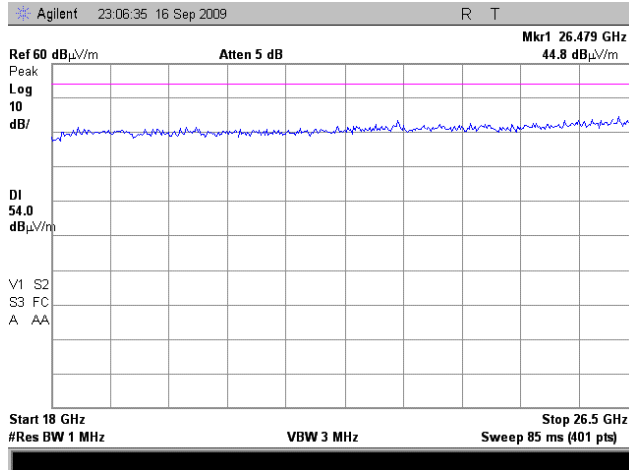


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

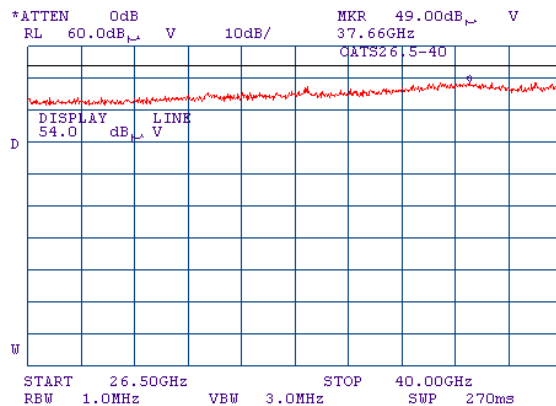
Plot 7.5.33 Radiated emission measurements from 18000 to 26500 MHz at the high carrier frequency

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



Plot 7.5.34 Radiated emission measurements from 26500 to 40000 MHz at the low carrier frequency

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



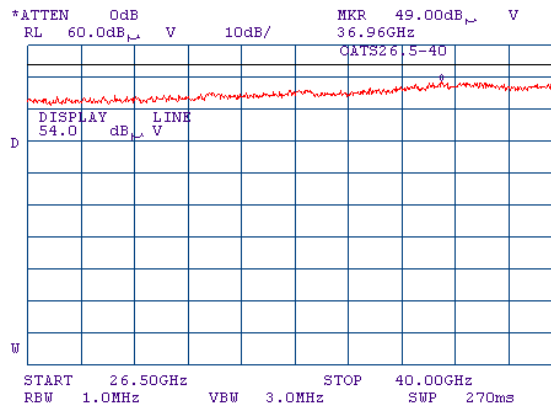


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:27:24 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> Integral antenna			

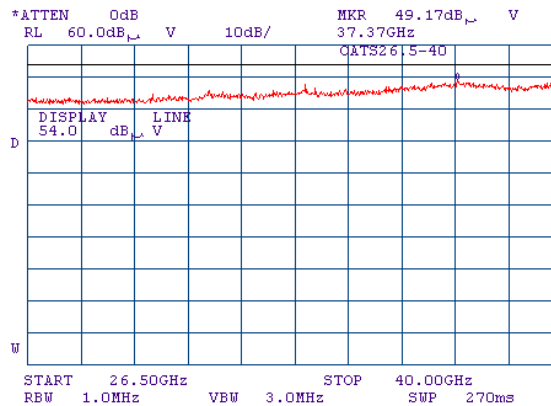
**Plot 7.5.35 Radiated emission measurements from 26500 to 40000 MHz at the mid carrier frequency**

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



**Plot 7.5.36 Radiated emission measurements from 26500 to 40000 MHz at the high carrier frequency**

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





<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

## 7.6 Field strength of spurious emissions with 9.5 dBi external antenna

### 7.6.1 General

This test was performed to measure field strength of spurious emissions from the EUT. Specification test limits are given in Table 7.6.1.

Table 7.6.1 Radiated spurious emissions limits

Frequency, MHz	Field strength at 3 m within restricted bands, dB(μV/m)*			Attenuation of field strength of spurious versus carrier outside restricted bands, dBc***
	Peak	Quasi Peak	Average	
0.009 – 0.090	148.5 – 128.5	NA	128.5 – 108.5**	20.0
0.090 – 0.110	NA	108.5 – 106.8**	NA	
0.110 – 0.490	126.8 – 113.8	NA	106.8 – 93.8**	
0.490 – 1.705	NA	73.8 – 63.0**	NA	
1.705 – 30.0*		69.5		
30 – 88		40.0		
88 – 216		43.5		
216 – 960		46.0		
960 – 1000		54.0		
1000 – 10 <sup>th</sup> harmonic	74.0	NA	54.0	

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

$$\text{Lim}_{S_2} = \text{Lim}_{S_1} + 40 \log(S_1/S_2),$$

where S<sub>1</sub> and S<sub>2</sub> – 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.

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

7.6.2.1 The EUT was set up as shown in Figure 7.6.1, energized and the performance check was conducted.

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

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

### 7.6.3 Test procedure for spurious emission field strength measurements above 30 MHz

7.6.3.1 The EUT was set up as shown in Figure 7.6.2, energized and the performance check was conducted.

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

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



<b>Test specification:</b>	<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>		
<b>Test procedure:</b>	Public notice DA 00-705 / ANSI C63.4, Section 13.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	9/23/2009 9:28:56 AM		
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

Figure 7.6.1 Setup for spurious emission field strength measurements below 30 MHz

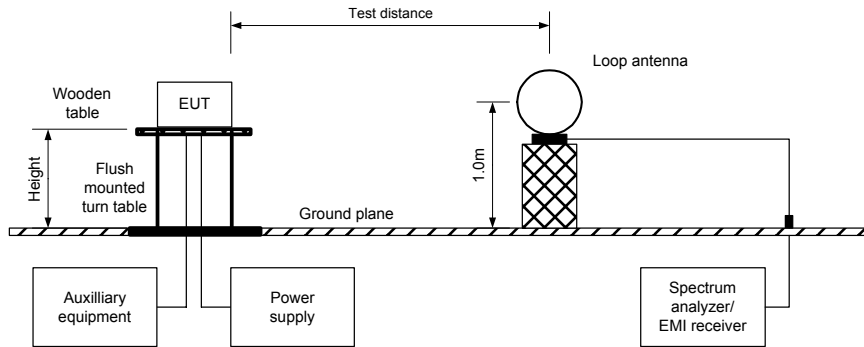
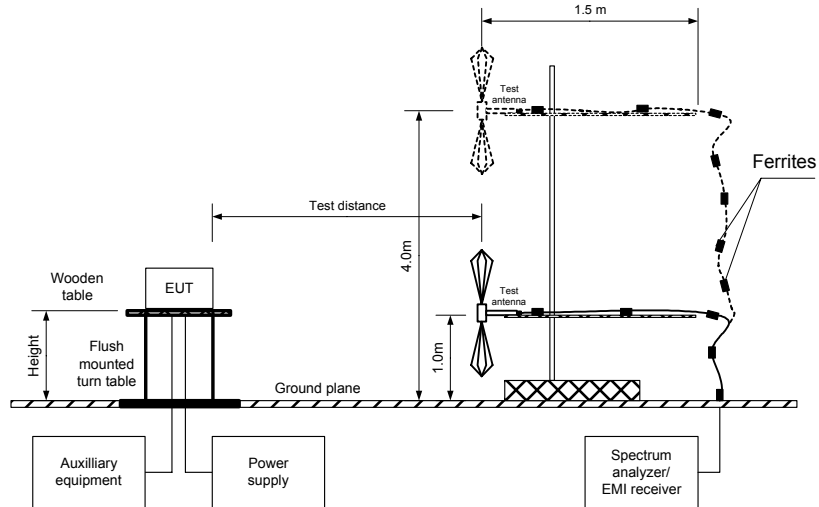


Figure 7.6.2 Setup for spurious emission field strength measurements above 30 MHz





<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions	
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4	
<b>Test mode:</b> Compliance	<b>Verdict: PASS</b>
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM	
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa
<b>Relative Humidity:</b> 39 %	
<b>Power Supply:</b> 120VAC	
<b>Remarks:</b> External 9.5 dBi antenna	

**Table 7.6.2 Field strength of emissions outside restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: Maximum  
 DETECTOR USED: Peak  
 RESOLUTION BANDWIDTH: 100 kHz  
 VIDEO BANDWIDTH: 300 kHz  
 TEST ANTENNA TYPE: Active loop (9 kHz – 30 MHz)  
 Biconilog (30 MHz – 1000 MHz)  
 Double ridged guide (above 1000 MHz)  
 EBW: 10 MHz (maximum, aggregate power)

Frequency MHz	Field strength of spurious, dB(µV/m)	Antenna polarization	Antenna height, m	Azimuth, degrees*	Field strength of carrier, dB(µV/m)	Attenuation below carrier, dBc	Limit, dBc	Margin, dB**	Verdict
<b>Low carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass
<b>Mid carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass
<b>High carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass

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





<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

**Table 7.6.3 Field strength of spurious emissions above 1 GHz within restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: Maximum  
 DETECTOR USED: Peak  
 RESOLUTION BANDWIDTH: 1000 kHz  
 TEST ANTENNA TYPE: Double ridged guide  
 EBW: 10 MHz (maximum, aggregate power)

Frequency MHz	Antenna		Azimuth degrees	Peak field strength (VBW=3 MHz)			Average field strength (VBW=10 Hz)			Verdict	
	Polarization	Height m		Measured dB(μV/m)	Limit, dB(μV/m)	Margin, dB**	Measured dB(μV/m)	Calculated dB(μV/m)	Limit, dB(μV/m)		Margin dB***
<b>Low carrier frequency</b>											
2487.003	Vertical	1.0	350	51.19	74.0	-22.81	50.09	45.86	54.0	-8.14	Pass
<b>Mid carrier frequency</b>											
2487.003	Vertical	1.0	350	51.10	74.0	-22.90	49.85	45.42	54.0	-8.58	Pass
<b>High carrier frequency</b>											
2487.003	Vertical	1.0	350	51.13	74.0	-22.87	49.27	44.84	54.0	-9.16	Pass

\*- EUT front panel refers to 0 degrees position of turntable.  
 \*\*- Margin = Measured field strength - specification limit.  
 \*\*\*- Margin = Calculated field strength - specification limit,  
 where Calculated field strength = Measured field strength + average factor.

**Table 7.6.4 Average factor calculation**

Transmission pulse		Transmission burst		Transmission train duration, ms	Average factor, dB
Duration, ms	Period, ms	Duration, ms	Period, ms		
3	5	-	-	-	-4.43

\*- Average factor was calculated as follows  
 for pulse train shorter than 100 ms:  $Average\ factor = 20 \times \log_{10} \left( \frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{Train\ duration} \times Number\ of\ bursts\ within\ pulse\ train \right)$   
 for pulse train longer than 100 ms:  $Average\ factor = 20 \times \log_{10} \left( \frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{100\ ms} \times Number\ of\ bursts\ within\ 100\ ms \right)$



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<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

**Table 7.6.5 Field strength of spurious emissions below 1 GHz within restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: OFDM 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: 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)  
 Biconical (30 MHz – 200 MHz)  
 Log periodic (200 MHz – 1000 MHz)  
 Biconilog (30 MHz – 1000 MHz)  
 10 MHz (maximum, aggregate power)

EBW:

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'				
<b>Low carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass
<b>Mid carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass
<b>High carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass

\*- Margin = Measured emission - specification limit.

\*\*- EUT front panel refer to 0 degrees position of turntable.

**Table 7.6.6 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	

**Reference numbers of test equipment used**

HL 0446	HL 0521	HL 0604	HL 0768	HL 0769	HL 1424	HL 1425	HL 2254
HL 2387	HL 2432	HL 2697	HL 2883	HL 2909	HL 2952	HL 3123	HL 3286
HL 3351	HL 3352	HL 3616					

Full description is given in Appendix A.

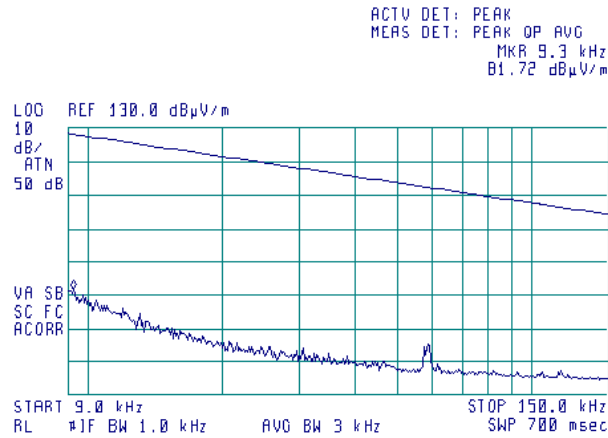


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<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

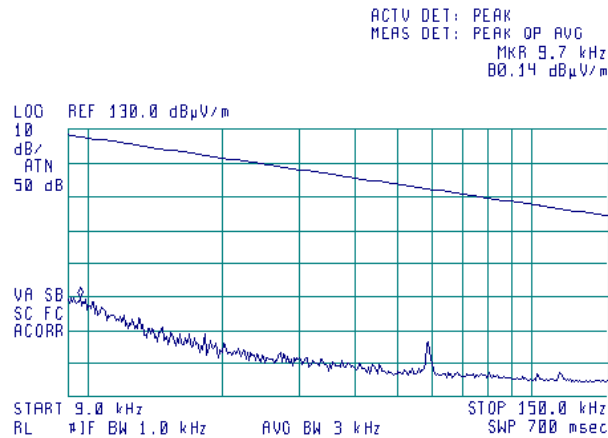
**Plot 7.6.1 Radiated emission measurements from 9 to 150 kHz at the low carrier frequency**

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



**Plot 7.6.2 Radiated emission measurements from 9 to 150 kHz at the mid carrier frequency**

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



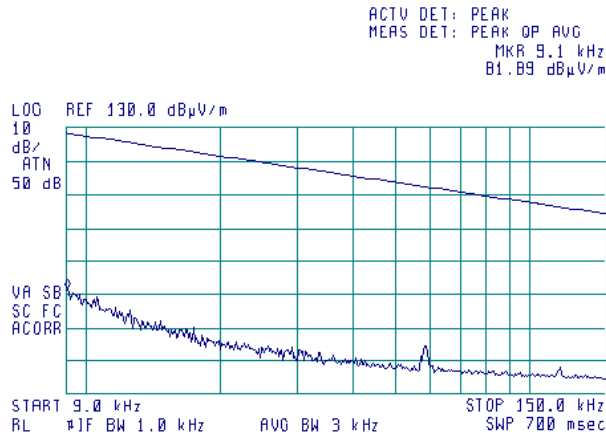


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<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

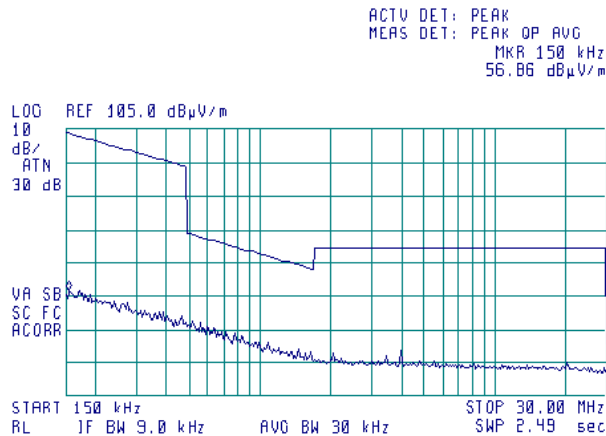
**Plot 7.6.3 Radiated emission measurements from 9 to 150 kHz at the high carrier frequency**

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



**Plot 7.6.4 Radiated emission measurements from 0.15 to 30 MHz at the low carrier frequency**

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



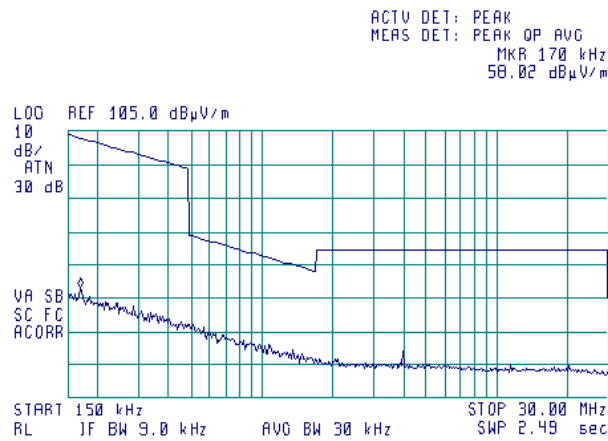


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<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

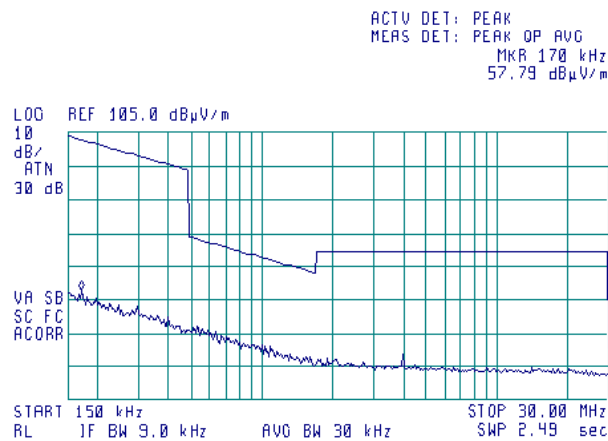
**Plot 7.6.5 Radiated emission measurements from 0.15 to 30 MHz at the mid carrier frequency**

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



**Plot 7.6.6 Radiated emission measurements from 0.15 to 30 MHz at the high carrier frequency**

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



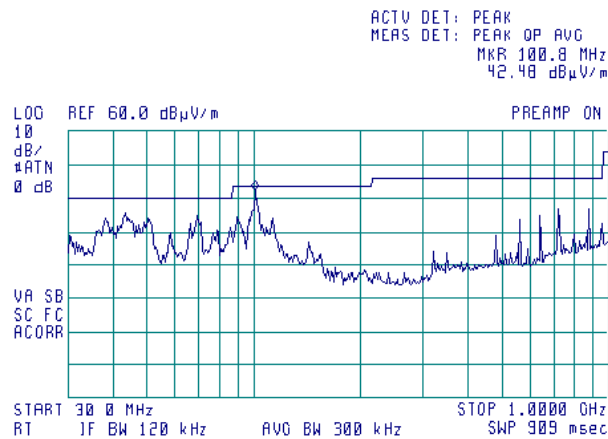


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<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

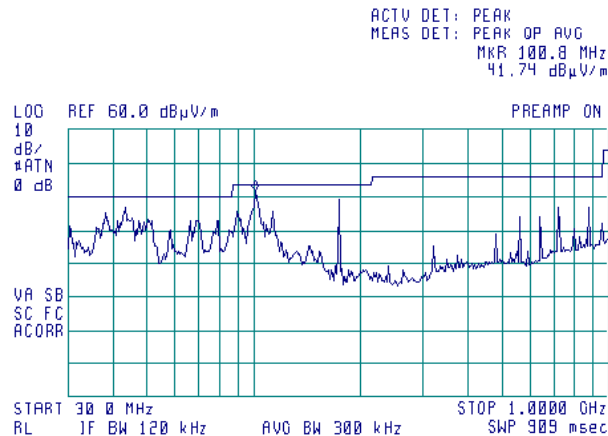
Plot 7.6.7 Radiated emission measurements from 30 to 1000 MHz at the low carrier frequency

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



Plot 7.6.8 Radiated emission measurements from 30 to 1000 MHz at the mid carrier frequency

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



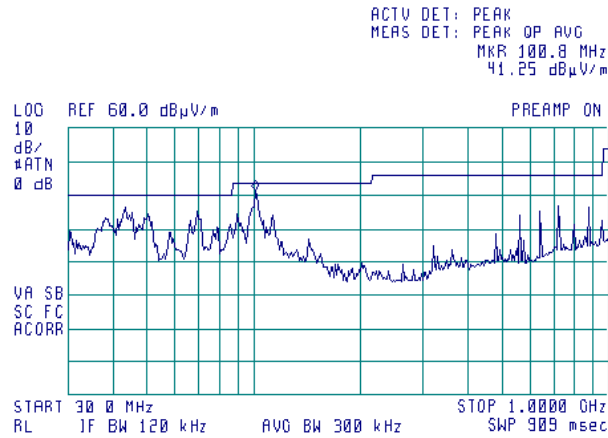


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

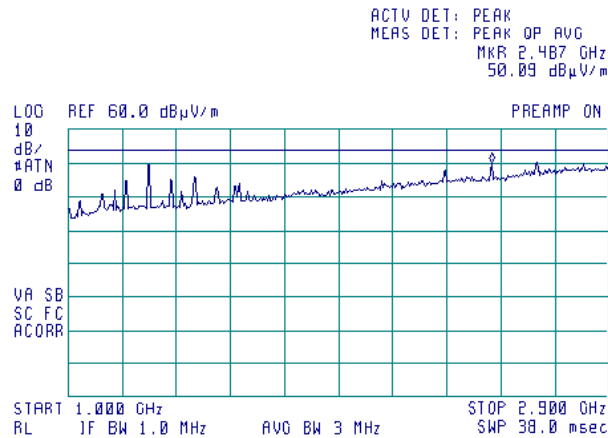
Plot 7.6.9 Radiated emission measurements from 30 to 1000 MHz at the high carrier frequency

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



Plot 7.6.10 Radiated emission measurements from 1000 to 2900 MHz at the low carrier frequency

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



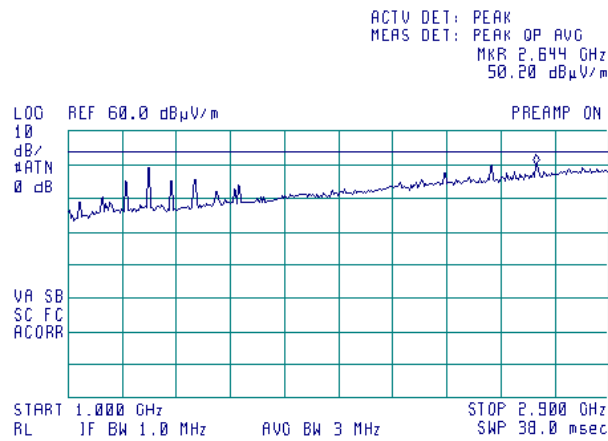


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

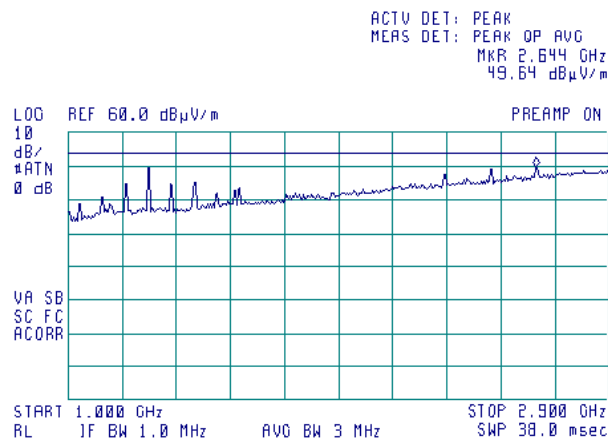
Plot 7.6.11 Radiated emission measurements from 1000 to 2900 MHz at the mid carrier frequency

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



Plot 7.6.12 Radiated emission measurements from 1000 to 2900 MHz at the high carrier frequency

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





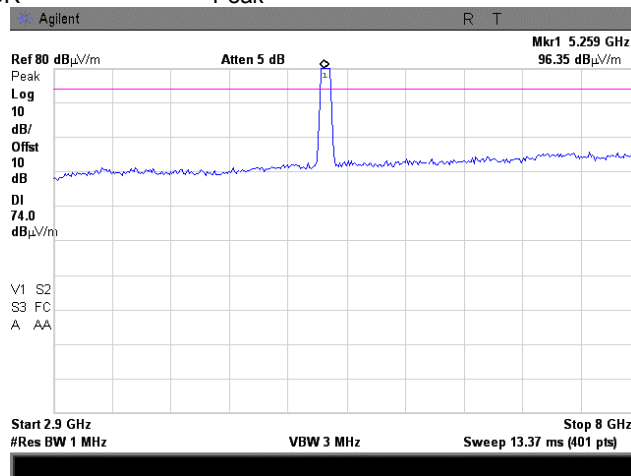


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

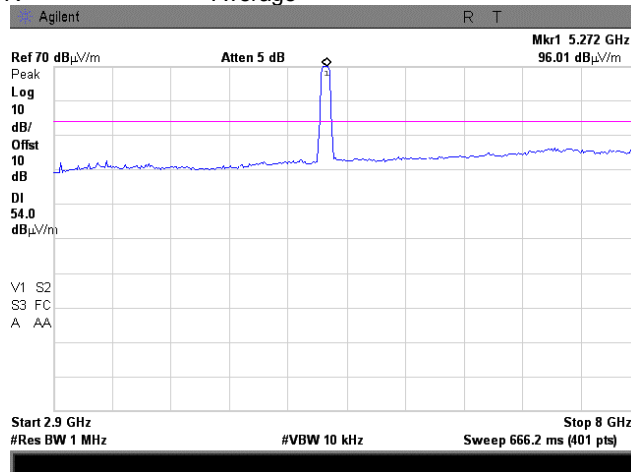
**Plot 7.6.13 Radiated emission measurements from 2900 to 8000 MHz at the low carrier frequency**

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



**Plot 7.6.14 Radiated emission measurements from 2900 to 8000 MHz at the low carrier frequency**

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



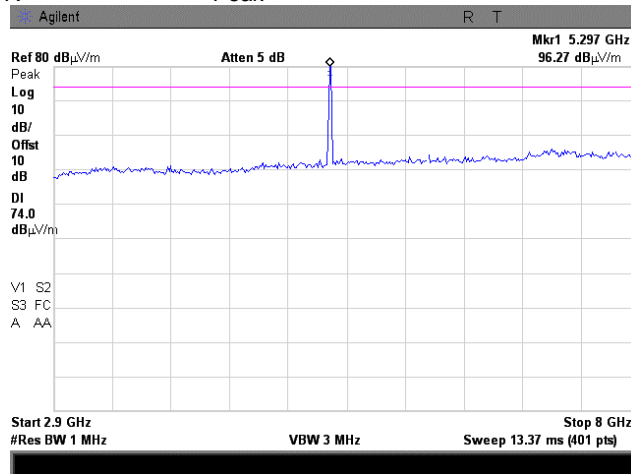


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

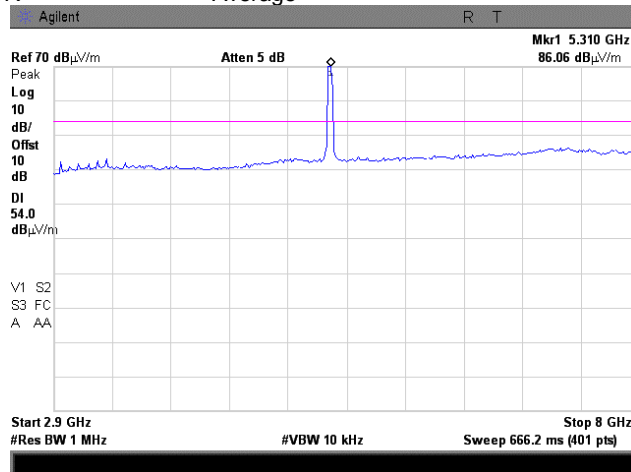
Plot 7.6.15 Radiated emission measurements from 2900 to 8000 MHz at the mid carrier frequency

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



Plot 7.6.16 Radiated emission measurements from 2900 to 8000 MHz at the mid carrier frequency

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



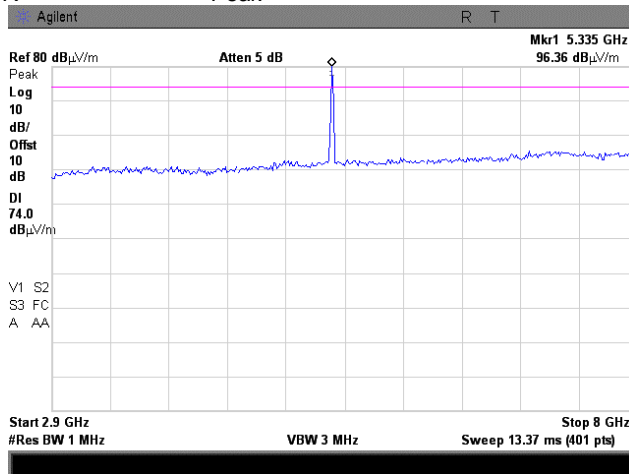


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

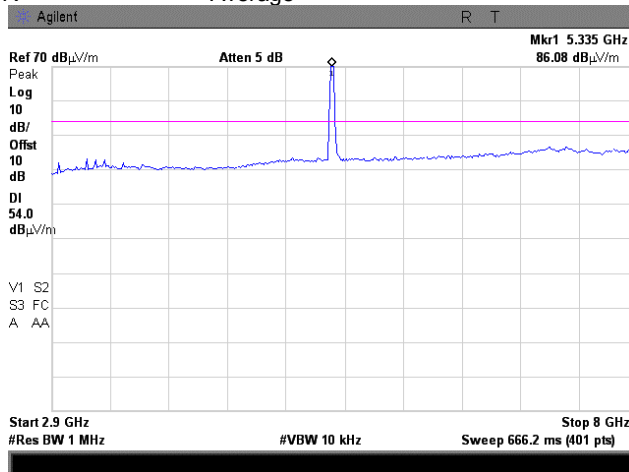
Plot 7.6.17 Radiated emission measurements from 2900 to 8000 MHz at the high carrier frequency

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



Plot 7.6.18 Radiated emission measurements from 2900 to 8000 MHz at the high carrier frequency

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



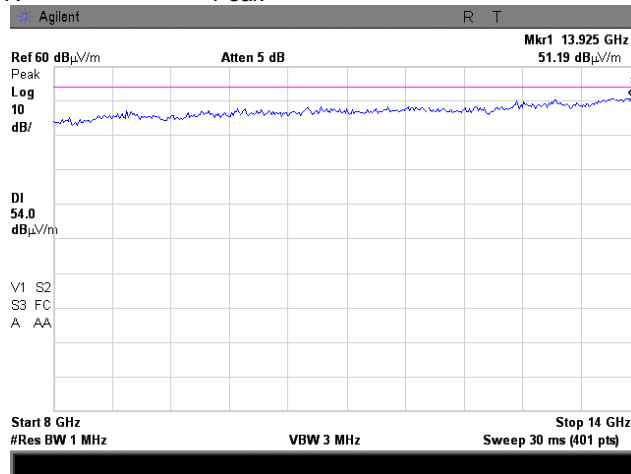


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

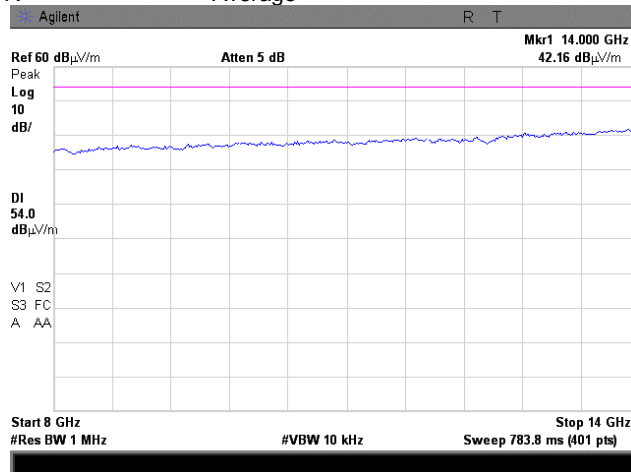
Plot 7.6.19 Radiated emission measurements from 8000 to 14000 MHz at the low carrier frequency

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



Plot 7.6.20 Radiated emission measurements from 8000 to 14000 MHz at the low carrier frequency

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



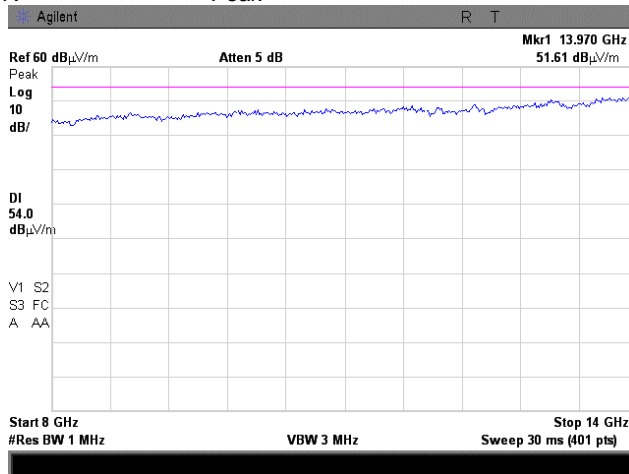


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

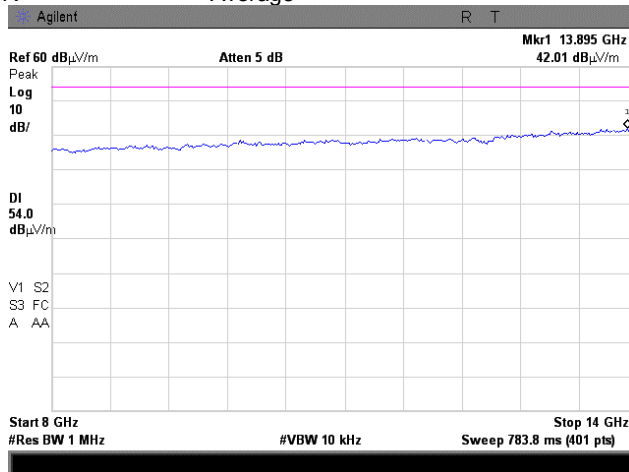
Plot 7.6.21 Radiated emission measurements from 8000 to 14000 MHz at the mid carrier frequency

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



Plot 7.6.22 Radiated emission measurements from 8000 to 14000 MHz at the mid carrier frequency

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



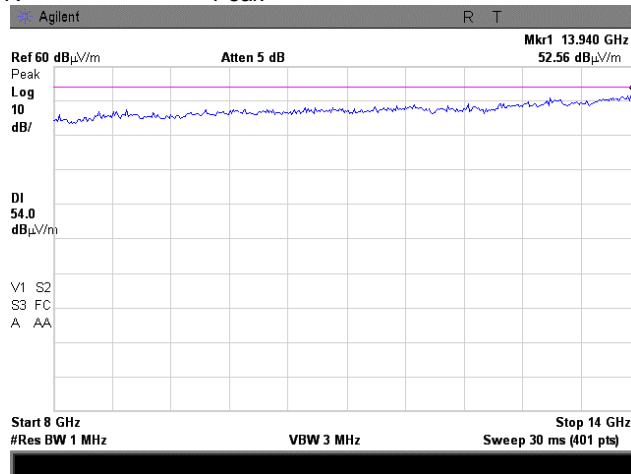


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

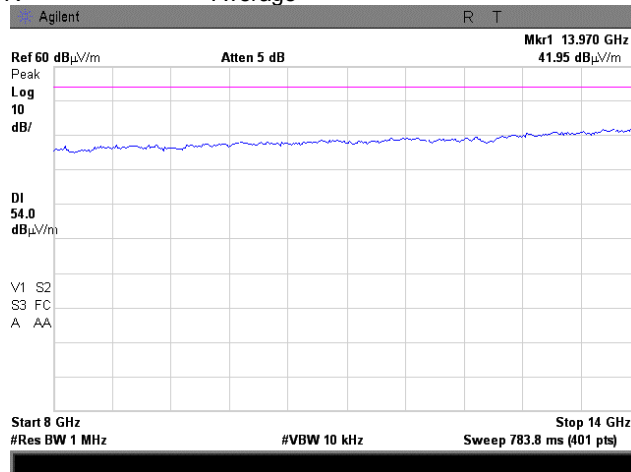
Plot 7.6.23 Radiated emission measurements from 8000 to 14000 MHz at the high carrier frequency

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



Plot 7.6.24 Radiated emission measurements from 8000 to 14000 MHz at the high carrier frequency

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



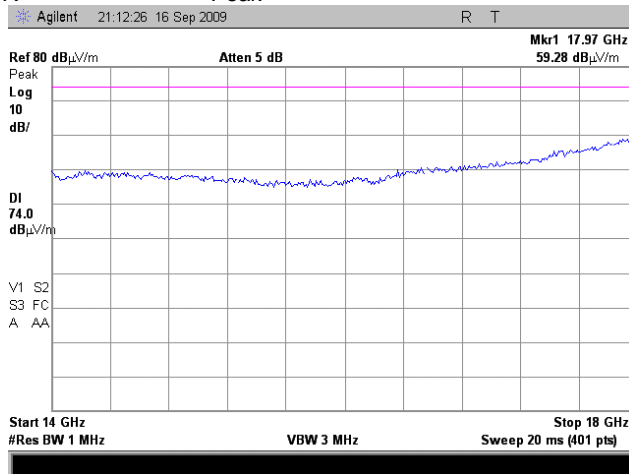


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

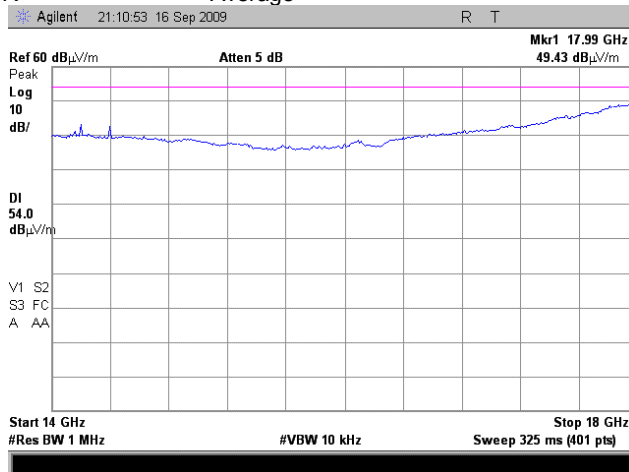
Plot 7.6.25 Radiated emission measurements from 14000 to 18000 MHz at the low carrier frequency

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



Plot 7.6.26 Radiated emission measurements from 14000 to 18000 MHz at the low carrier frequency

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



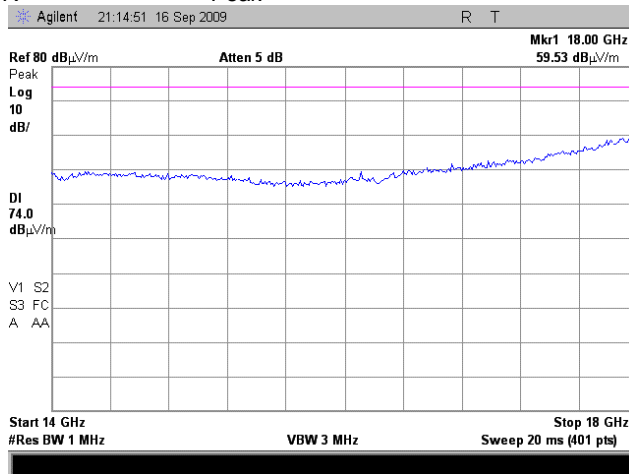


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

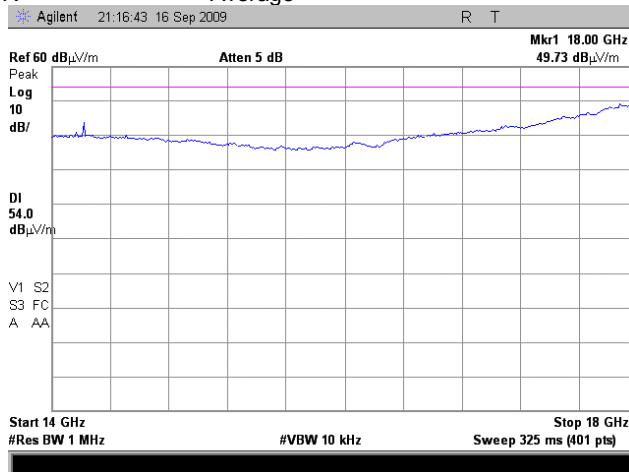
Plot 7.6.27 Radiated emission measurements from 14000 to 18000 MHz at the mid carrier frequency

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



Plot 7.6.28 Radiated emission measurements from 14000 to 18000 MHz at the mid carrier frequency

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





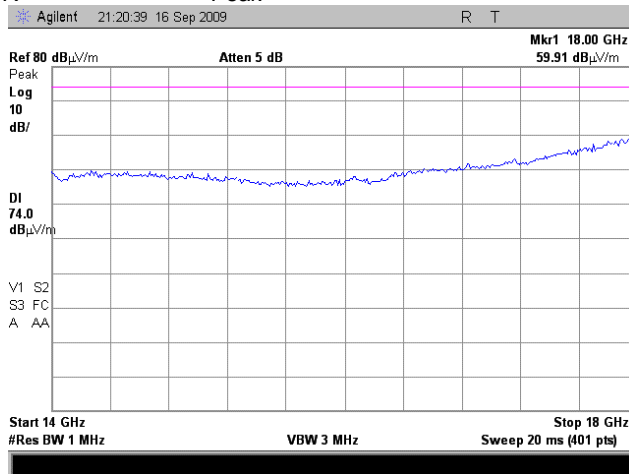


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

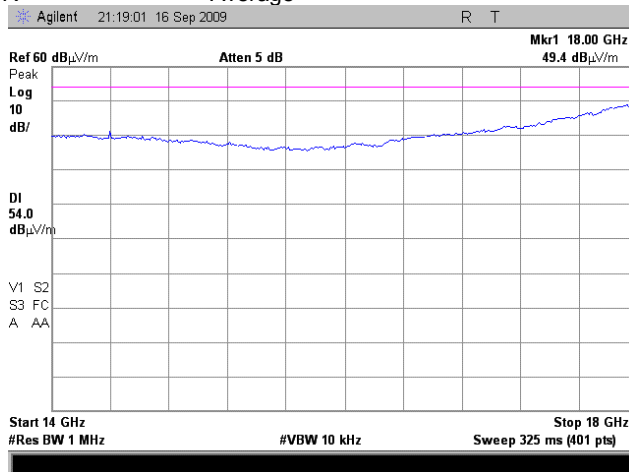
Plot 7.6.29 Radiated emission measurements from 14000 to 18000 MHz at the high carrier frequency

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



Plot 7.6.30 Radiated emission measurements from 14000 to 18000 MHz at the high carrier frequency

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



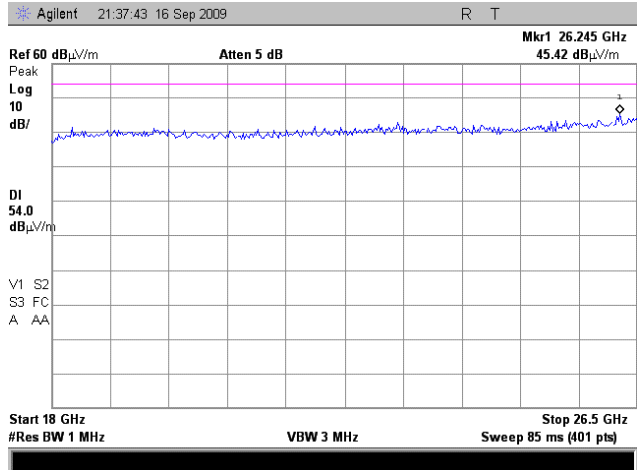


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

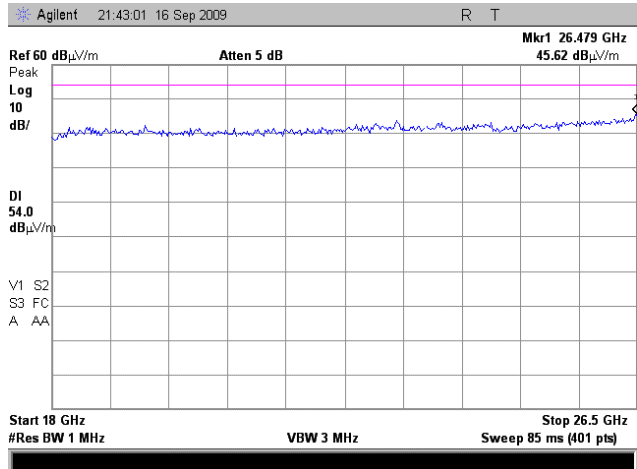
Plot 7.6.31 Radiated emission measurements from 18000 to 26500 MHz at the low carrier frequency

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



Plot 7.6.32 Radiated emission measurements from 18000 to 26500 MHz at the mid carrier frequency

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



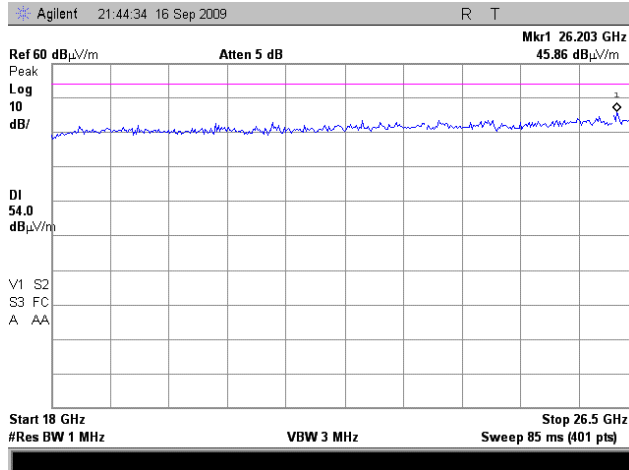


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

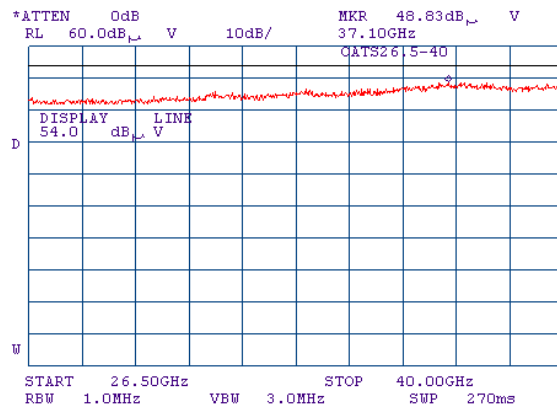
Plot 7.6.33 Radiated emission measurements from 18000 to 26500 MHz at the high carrier frequency

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



Plot 7.6.34 Radiated emission measurements from 26500 to 40000 MHz at the low carrier frequency

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



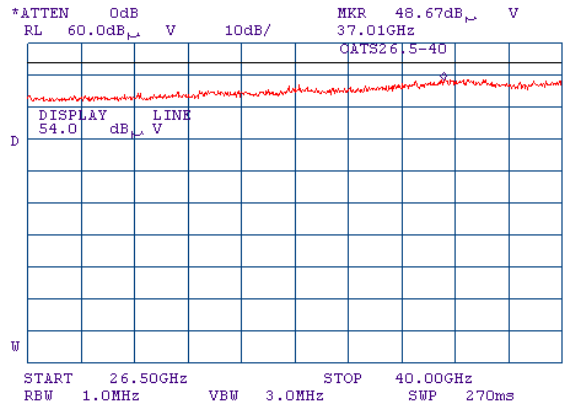


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:28:56 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120VAC
<b>Remarks:</b> External 9.5 dBi antenna			

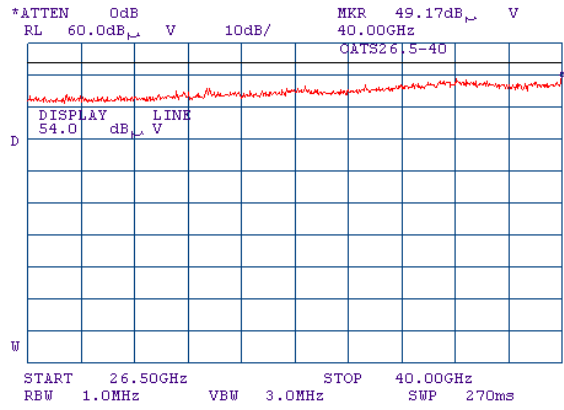
**Plot 7.6.35 Radiated emission measurements from 26500 to 40000 MHz at the mid carrier frequency**

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



**Plot 7.6.36 Radiated emission measurements from 26500 to 40000 MHz at the high carrier frequency**

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





<b>Test specification:</b>	<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>		
<b>Test procedure:</b>	Public notice DA 00-705 / ANSI C63.4, Section 13.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	9/23/2009 9:29:01 AM		
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

## 7.7 Field strength of spurious emissions with 17 dBi external antenna

### 7.7.1 General

This test was performed to measure field strength of spurious emissions from the EUT. Specification test limits are given in Table 7.7.1.

Table 7.7.1 Radiated spurious emissions limits

Frequency, MHz	Field strength at 3 m within restricted bands, dB( $\mu$ V/m)*			Attenuation of field strength of spurious versus carrier outside restricted bands, dBc***
	Peak	Quasi Peak	Average	
0.009 – 0.090	148.5 – 128.5	NA	128.5 – 108.5**	20.0
0.090 – 0.110	NA	108.5 – 106.8**	NA	
0.110 – 0.490	126.8 – 113.8	NA	106.8 – 93.8**	
0.490 – 1.705	NA	73.8 – 63.0**	NA	
1.705 – 30.0*		69.5		
30 – 88		40.0		
88 – 216		43.5		
216 – 960		46.0		
960 – 1000		54.0		
1000 – 10 <sup>th</sup> harmonic	74.0	NA	54.0	

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

$$\text{Lim}_{S_2} = \text{Lim}_{S_1} + 40 \log(S_1/S_2),$$

where  $S_1$  and  $S_2$  – 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.

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

7.7.2.1 The EUT was set up as shown in Figure 7.7.1, energized and the performance check was conducted.

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

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

### 7.7.3 Test procedure for spurious emission field strength measurements above 30 MHz

7.7.3.1 The EUT was set up as shown in Figure 7.7.2, energized and the performance check was conducted.

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

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



<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

Figure 7.7.1 Setup for spurious emission field strength measurements below 30 MHz

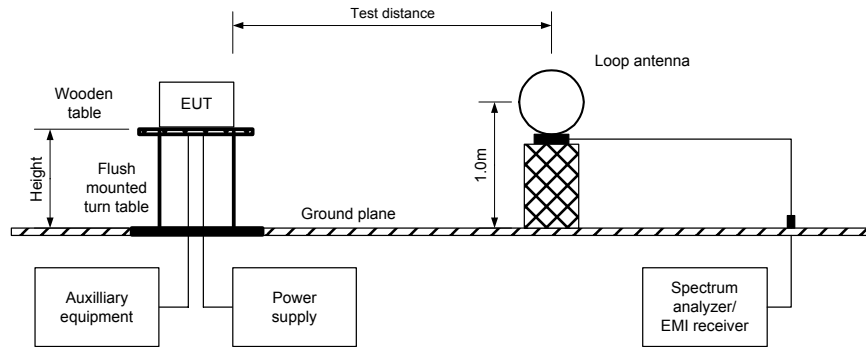
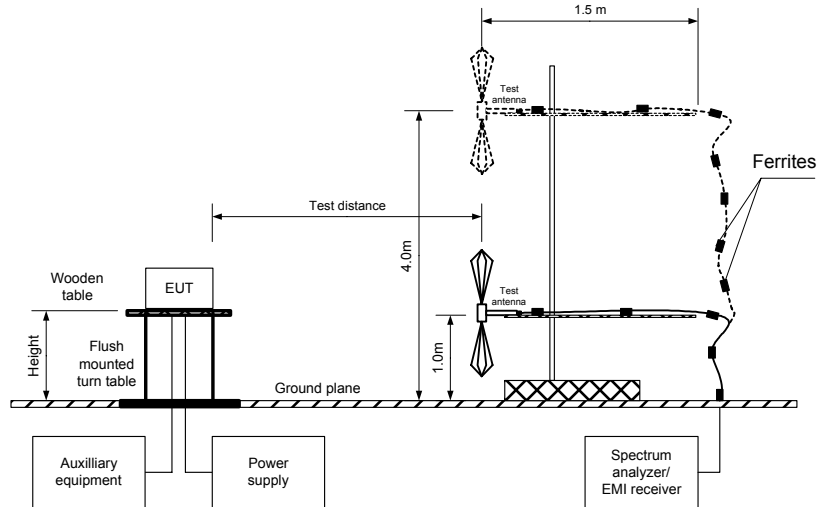


Figure 7.7.2 Setup for spurious emission field strength measurements above 30 MHz





HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions	
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4	
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM	
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa
<b>Relative Humidity:</b> 39 %	
<b>Power Supply:</b> 120 VAC	
<b>Remarks:</b> External 17 dBi antenna	

**Table 7.7.2 Field strength of emissions outside restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: OFDM 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: Maximum  
 DETECTOR USED: Peak  
 RESOLUTION BANDWIDTH: 100 kHz  
 VIDEO BANDWIDTH: 300 kHz  
 TEST ANTENNA TYPE: Active loop (9 kHz – 30 MHz)  
 Biconical (30 MHz – 200 MHz)  
 Double ridged guide (above 1000 MHz)  
 EBW: 10 MHz (maximum, aggregate power)

Frequency MHz	Field strength of spurious, dB(µV/m)	Antenna polarization	Antenna height, m	Azimuth, degrees*	Field strength of carrier, dB(µV/m)	Attenuation below carrier, dBc	Limit, dBc	Margin, dB**	Verdict
<b>Low carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass
<b>Mid carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass
<b>High carrier frequency</b>									
All emission were found more than 20 dB below the limit									Pass

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



<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

**Table 7.7.3 Field strength of spurious emissions above 1 GHz within restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: Maximum  
 DETECTOR USED: Peak  
 RESOLUTION BANDWIDTH: 1000 kHz  
 TEST ANTENNA TYPE: Double ridged guide  
 EBW: 10 MHz (maximum, aggregate power)

frequency MHz	Antenna		Azimuth degrees	Peak field strength(VBW=3 MHz)			Average field strength(VBW=10 Hz)				Verdict
	Polarization	height m		Measured dB(µV/m)	Limit, dB(µV/m)	Margin, dB**	Measured dB(µV/m)	Calculated dB(µV/m)	Limit, dB(µV/m)	Margin dB***	
<b>Low carrier frequency</b>											
1440.000	Horizontal	1.2	30	46.62	74.0	-27.38	43.95	39.52	54.0	-10.48	Pass
<b>Mid carrier frequency</b>											
1440.003	Horizontal	1.2	30	46.60	74.0	-27.4	43.95	39.52	54.0	-10.48	Pass
<b>High carrier frequency</b>											
1440.000	Horizontal	1.2	30	46.55	74.0	-27.35	43.97	39.54	54.0	-14.46	Pass

\*- EUT front panel refers to 0 degrees position of turntable.  
 \*\*- Margin = Measured field strength - specification limit.  
 \*\*\*- Margin = Calculated field strength - specification limit,  
 where Calculated field strength = Measured field strength + average factor.

**Table 7.7.4 Average factor calculation**

Transmission pulse		Transmission burst		Transmission train duration, ms	Average factor, dB
Duration, ms	Period, ms	Duration, ms	Period, ms		
3	5	-	-	-	-4.43

\*- Average factor was calculated as follows  
 for pulse train shorter than 100 ms:  $Average\ factor = 20 \times \log_{10} \left( \frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{Train\ duration} \times Number\ of\ bursts\ within\ pulse\ train \right)$   
 for pulse train longer than 100 ms:  $Average\ factor = 20 \times \log_{10} \left( \frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{100\ ms} \times Number\ of\ bursts\ within\ 100\ ms \right)$





<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

**Table 7.7.5 Field strength of spurious emissions below 1 GHz within restricted bands**

ASSIGNED FREQUENCY RANGE: 5250 - 5350 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: 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)  
 EBW: 10 MHz (maximum, aggregate power)

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'				
<b>Low carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass
<b>Mid carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass
<b>High carrier frequency</b>								
All emission were found more than 20 dB below the limit								Pass

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

**Table 7.7.6 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	

**Reference numbers of test equipment used**

HL 0446	HL 0521	HL 0604	HL 0768	HL 0769	HL 1424	HL 1425	HL 2254
HL 2387	HL 2432	HL 2697	HL 2883	HL 2909	HL 2952	HL 3123	HL 3286
HL 3351	HL 3352	HL 3616					

Full description is given in Appendix A.

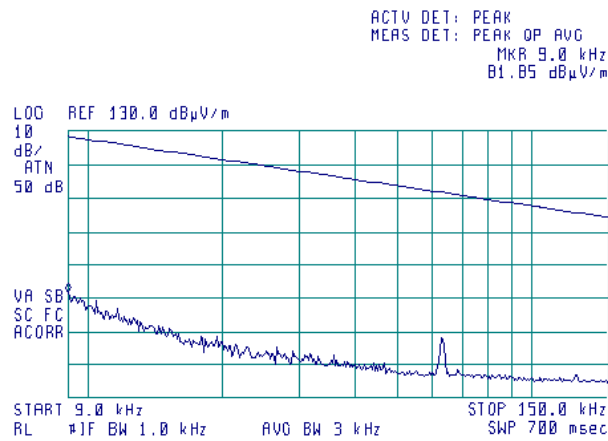


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<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

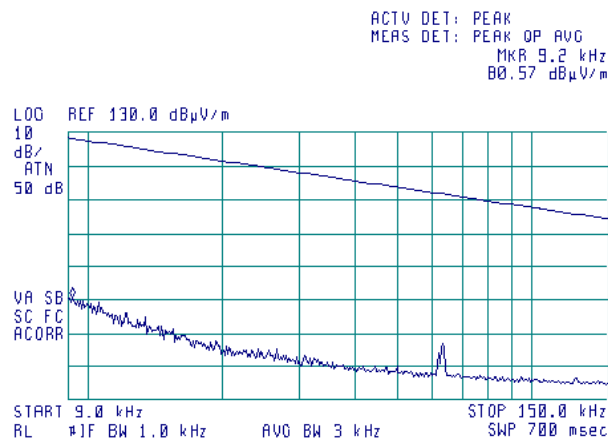
**Plot 7.7.1 Radiated emission measurements from 9 to 150 kHz at the low carrier frequency**

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



**Plot 7.7.2 Radiated emission measurements from 9 to 150 kHz at the mid carrier frequency**

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



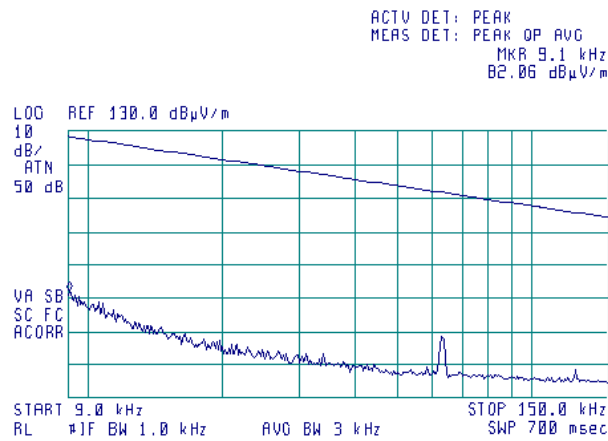


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

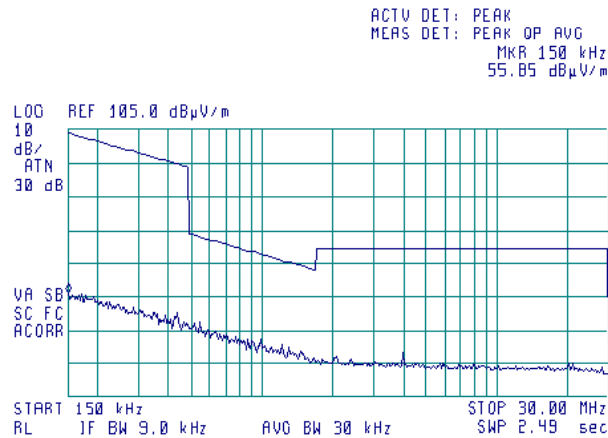
**Plot 7.7.3 Radiated emission measurements from 9 to 150 kHz at the high carrier frequency**

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



**Plot 7.7.4 Radiated emission measurements from 0.15 to 30 MHz at the low carrier frequency**

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



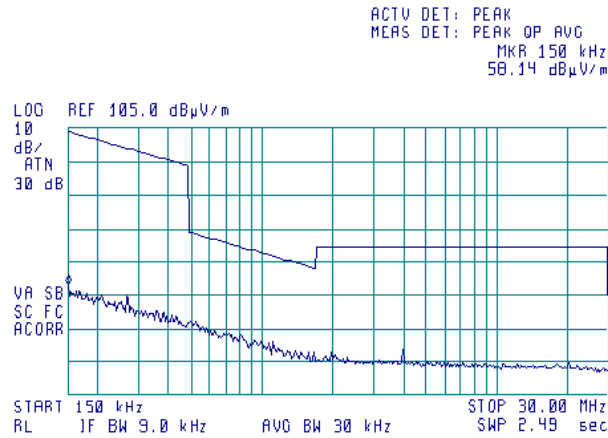


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

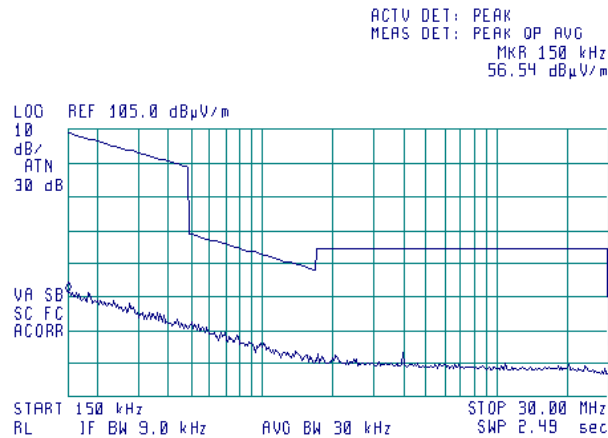
**Plot 7.7.5 Radiated emission measurements from 0.15 to 30 MHz at the mid carrier frequency**

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



**Plot 7.7.6 Radiated emission measurements from 0.15 to 30 MHz at the high carrier frequency**

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



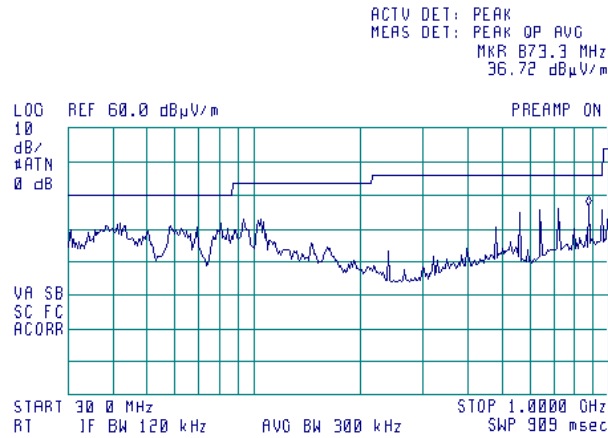


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

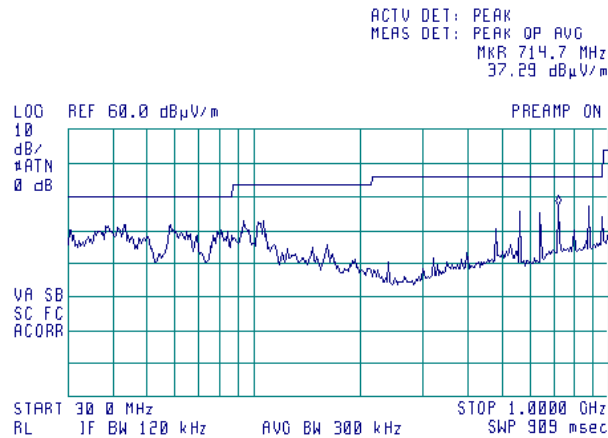
**Plot 7.7.7 Radiated emission measurements from 30 to 1000 MHz at the low carrier frequency**

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



**Plot 7.7.8 Radiated emission measurements from 30 to 1000 MHz at the mid carrier frequency**

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



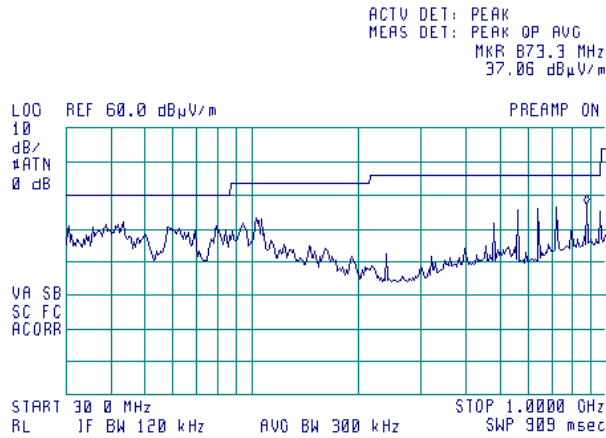


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

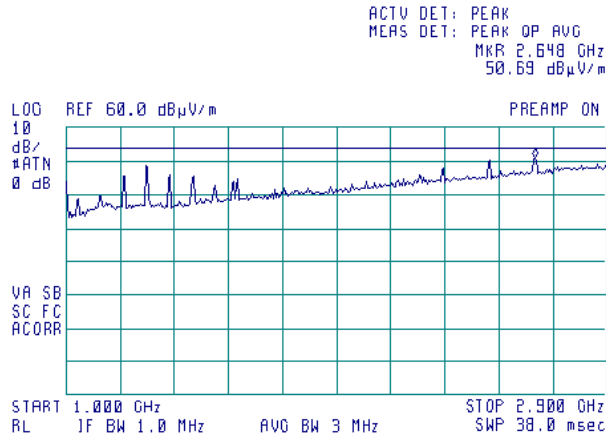
Plot 7.7.9 Radiated emission measurements from 30 to 1000 MHz at the high carrier frequency

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



Plot 7.7.10 Radiated emission measurements from 1000 to 2900 MHz at the low carrier frequency

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



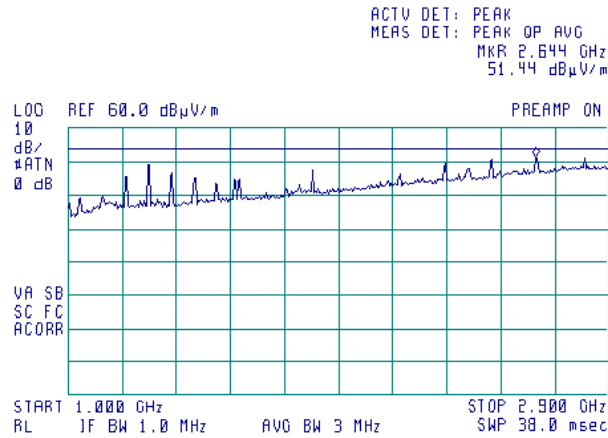


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

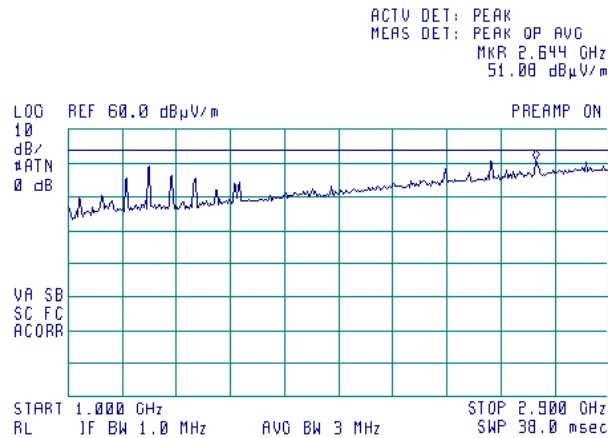
**Plot 7.7.11 Radiated emission measurements from 1000 to 2900 MHz at the mid carrier frequency**

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



**Plot 7.7.12 Radiated emission measurements from 1000 to 2900 MHz at the high carrier frequency**

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



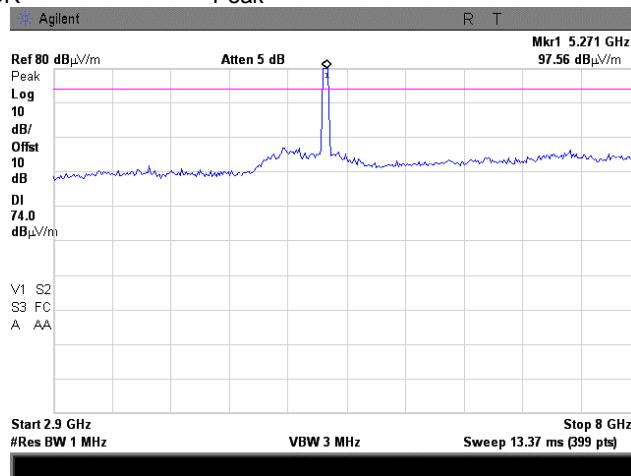


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

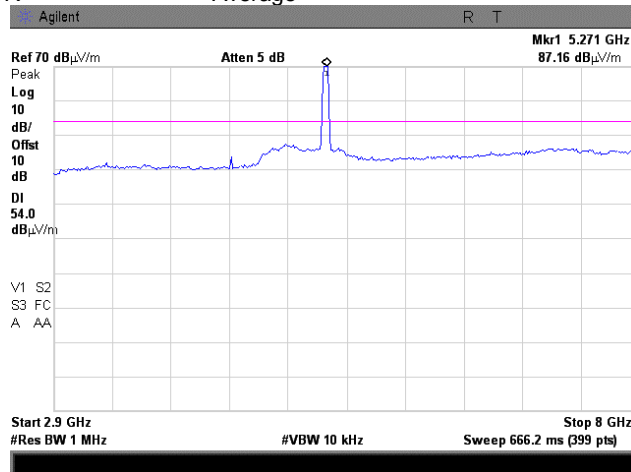
**Plot 7.7.13 Radiated emission measurements from 2900 to 8000 MHz at the low carrier frequency**

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



**Plot 7.7.14 Radiated emission measurements from 2900 to 8000 MHz at the low carrier frequency**

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





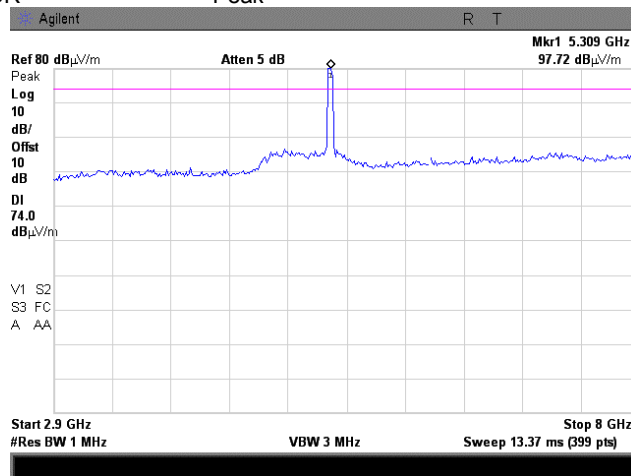


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

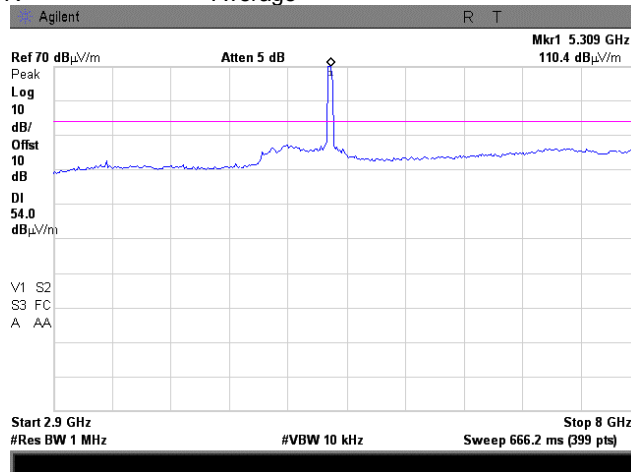
**Plot 7.7.15 Radiated emission measurements from 2900 to 8000 MHz at the mid carrier frequency**

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



**Plot 7.7.16 Radiated emission measurements from 2900 to 8000 MHz at the mid carrier frequency**

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



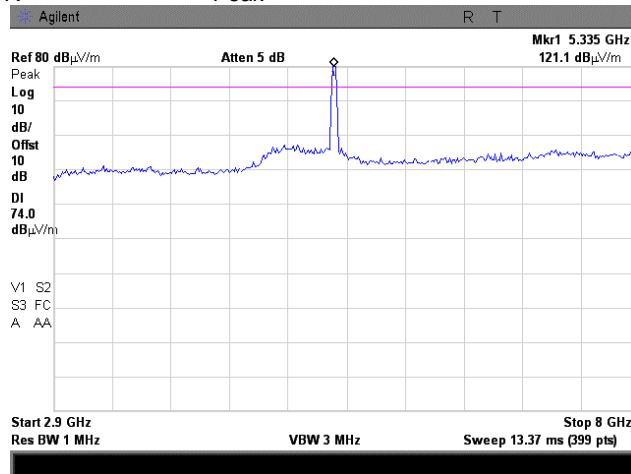


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

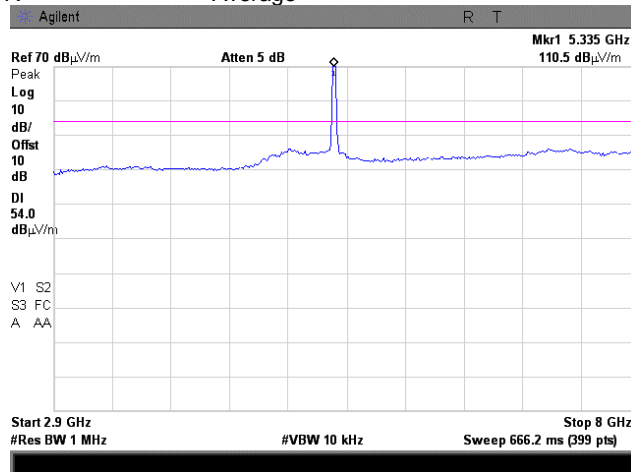
Plot 7.7.17 Radiated emission measurements from 2900 to 8000 MHz at the high carrier frequency

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



Plot 7.7.18 Radiated emission measurements from 2900 to 8000 MHz at the high carrier frequency

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



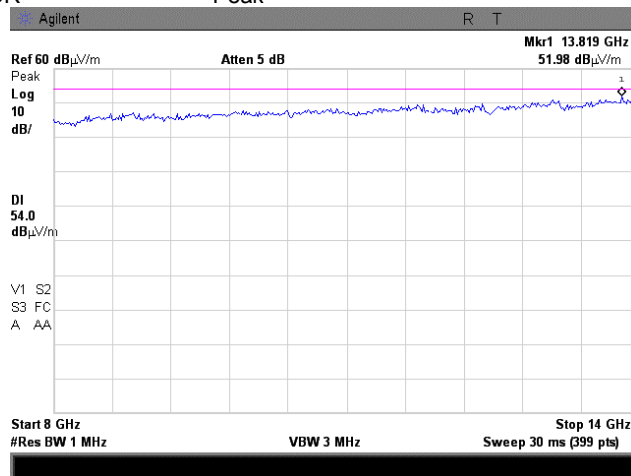


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

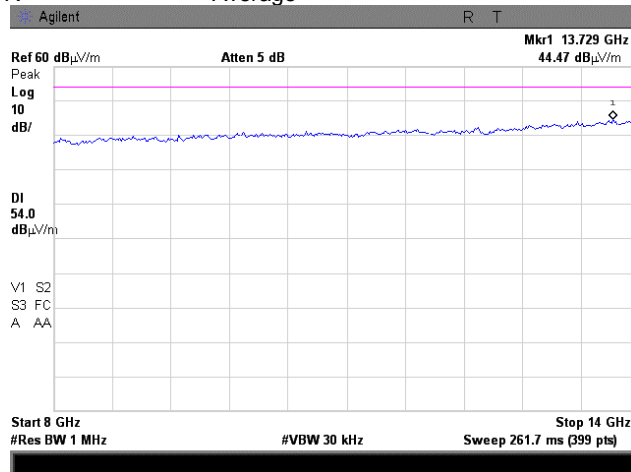
Plot 7.7.19 Radiated emission measurements from 8000 to 14000 MHz at the low carrier frequency

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



Plot 7.7.20 Radiated emission measurements from 8000 to 14000 MHz at the low carrier frequency

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



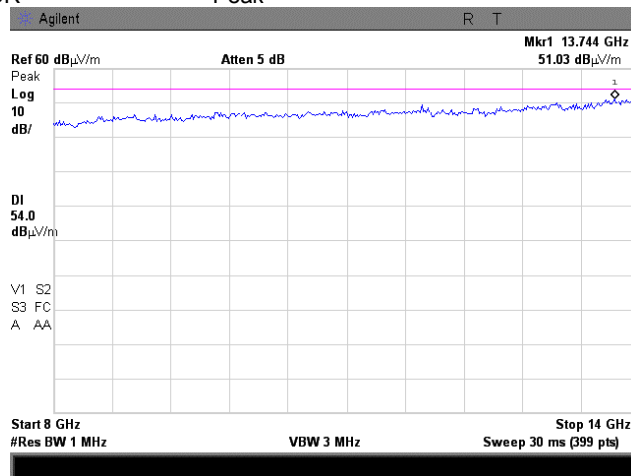


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

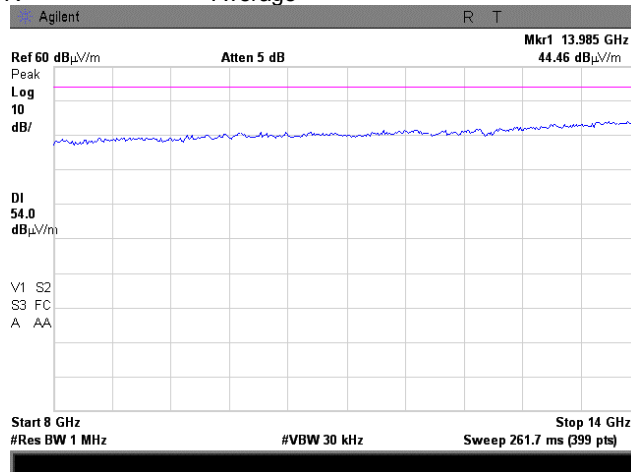
Plot 7.7.21 Radiated emission measurements from 8000 to 14000 MHz at the mid carrier frequency

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



Plot 7.7.22 Radiated emission measurements from 8000 to 14000 MHz at the mid carrier frequency

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



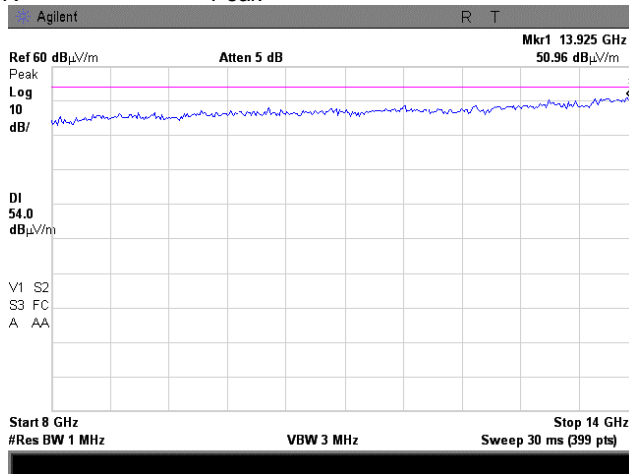


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

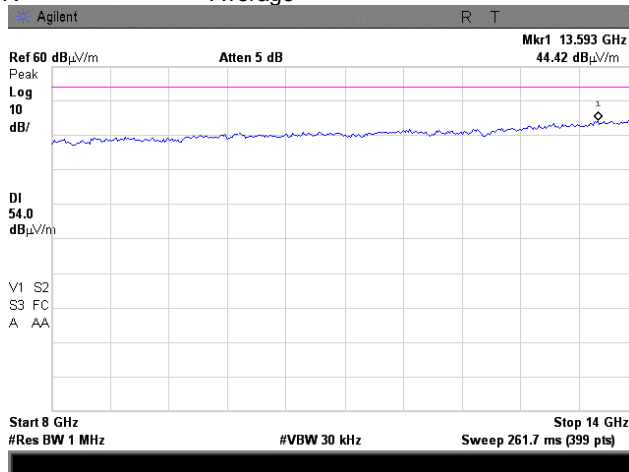
Plot 7.7.23 Radiated emission measurements from 8000 to 14000 MHz at the high carrier frequency

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



Plot 7.7.24 Radiated emission measurements from 8000 to 14000 MHz at the high carrier frequency

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



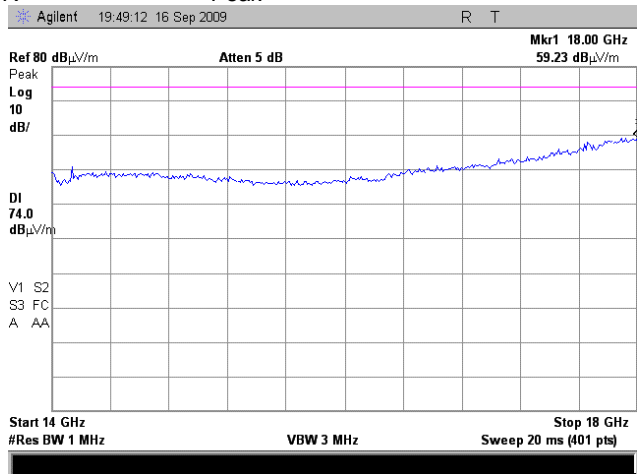


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

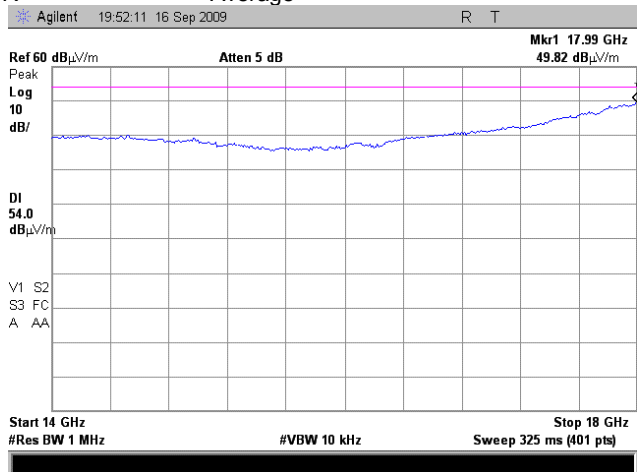
Plot 7.7.25 Radiated emission measurements from 14000 to 18000 MHz at the low carrier frequency

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



Plot 7.7.26 Radiated emission measurements from 14000 to 18000 MHz at the low carrier frequency

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



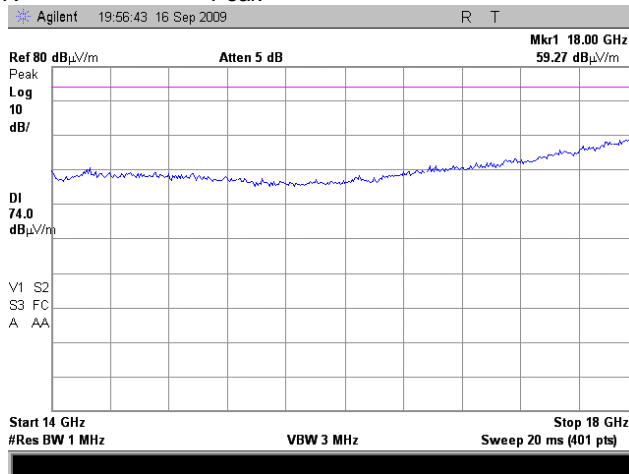


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

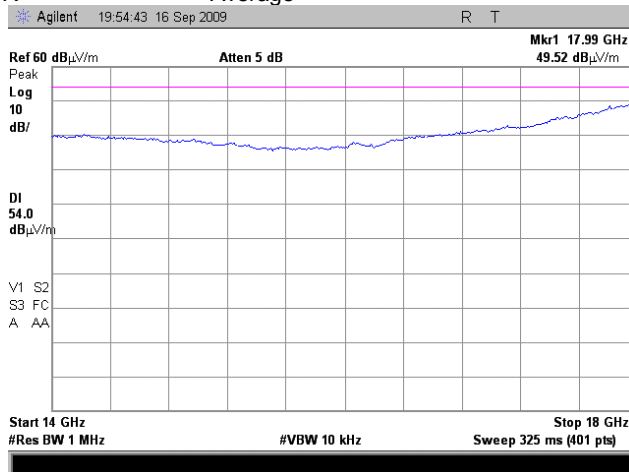
Plot 7.7.27 Radiated emission measurements from 14000 to 18000 MHz at the mid carrier frequency

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



Plot 7.7.28 Radiated emission measurements from 14000 to 18000 MHz at the mid carrier frequency

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



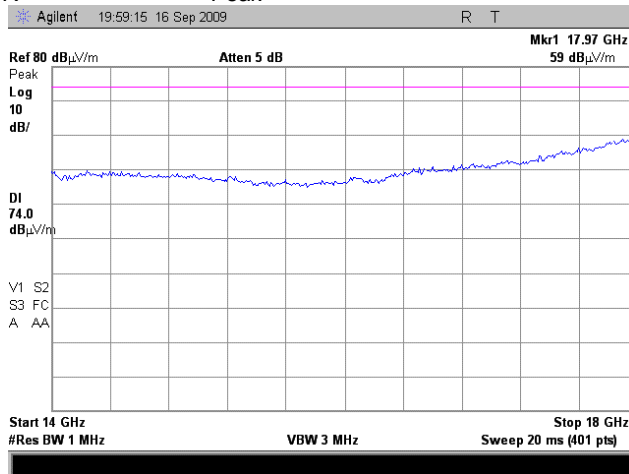


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

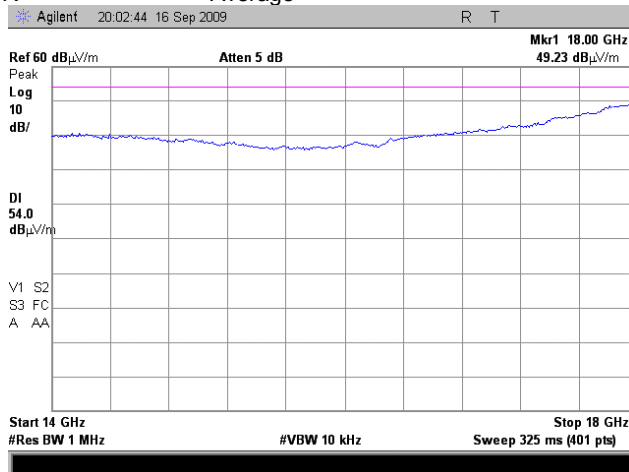
Plot 7.7.29 Radiated emission measurements from 14000 to 18000 MHz at the high carrier frequency

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



Plot 7.7.30 Radiated emission measurements from 14000 to 18000 MHz at the high carrier frequency

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





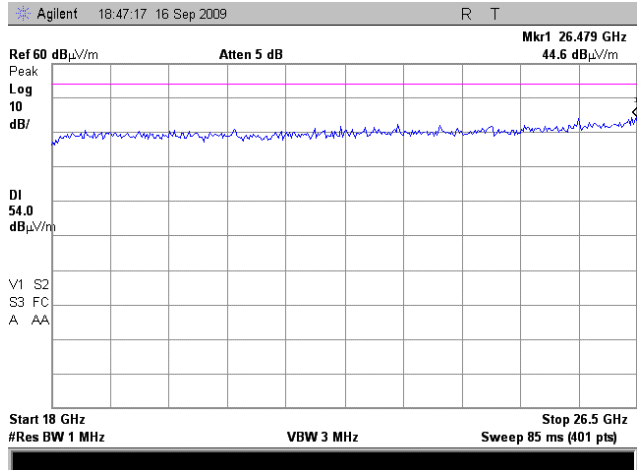


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

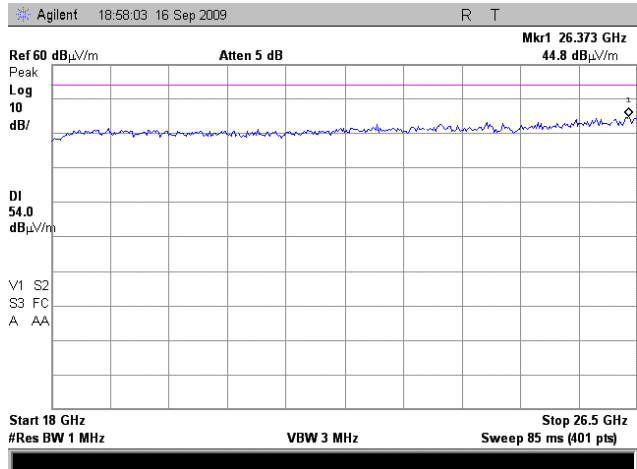
Plot 7.7.31 Radiated emission measurements from 18000 to 26500 MHz at the low carrier frequency

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



Plot 7.7.32 Radiated emission measurements from 18000 to 26500 MHz at the mid carrier frequency

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



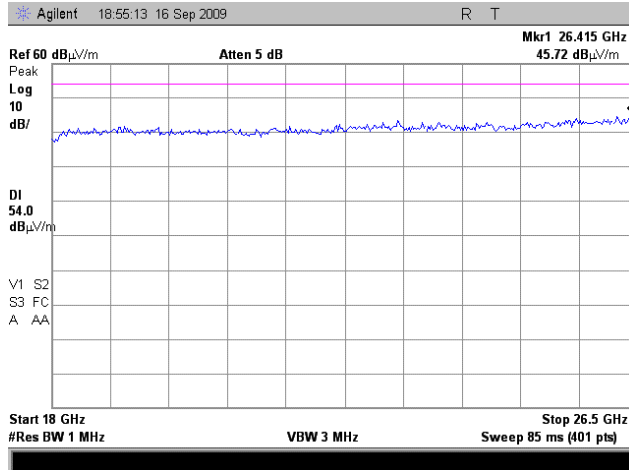


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

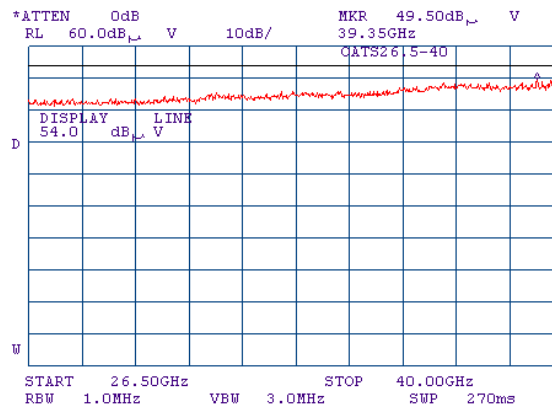
Plot 7.7.33 Radiated emission measurements from 18000 to 26500 MHz at the high carrier frequency

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



Plot 7.7.34 Radiated emission measurements from 26500 to 40000 MHz at the low carrier frequency

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



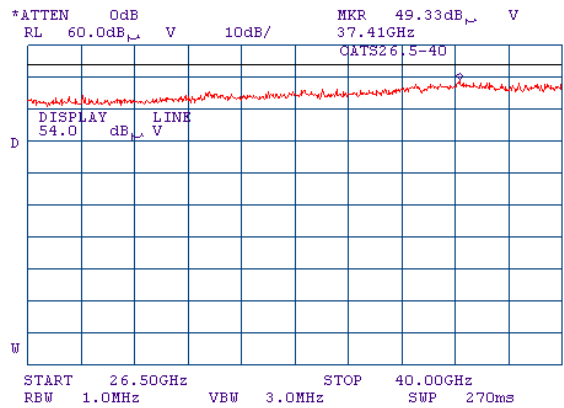


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 9/23/2009 9:29:01 AM			
<b>Temperature:</b> 24°C	<b>Air Pressure:</b> 1009 hPa	<b>Relative Humidity:</b> 39 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> External 17 dBi antenna			

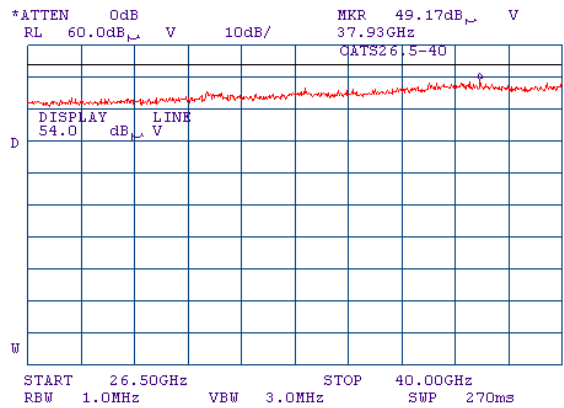
**Plot 7.7.35 Radiated emission measurements from 26500 to 40000 MHz at the mid carrier frequency**

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



**Plot 7.7.36 Radiated emission measurements from 26500 to 40000 MHz at the high carrier frequency**

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





<b>Test specification:</b>	<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>		
<b>Test procedure:</b>	Public notice DA 00-705 / ANSI C63.4, Section 13.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	11/13/2009 2:25:19 PM		
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

## 7.8 Field strength of spurious emissions with 6.5 dBi external antenna

### 7.8.1 General

This test was performed to measure field strength of spurious emissions from the EUT. Specification test limits are given in Table 7.8.1.

Table 7.8.1 Radiated spurious emissions limits

Frequency, MHz	Field strength at 3 m within restricted bands, dB( $\mu$ V/m)*			Attenuation of field strength of spurious versus carrier outside restricted bands, dBc***
	Peak	Quasi Peak	Average	
0.009 – 0.090	148.5 – 128.5	NA	128.5 – 108.5**	20.0
0.090 – 0.110	NA	108.5 – 106.8**	NA	
0.110 – 0.490	126.8 – 113.8	NA	106.8 – 93.8**	
0.490 – 1.705	NA	73.8 – 63.0**	NA	
1.705 – 30.0*		69.5		
30 – 88		40.0		
88 – 216		43.5		
216 – 960		46.0		
960 – 1000		54.0		
1000 – 10 <sup>th</sup> harmonic	74.0	NA	54.0	

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

$$\text{Lim}_{S_2} = \text{Lim}_{S_1} + 40 \log(S_1/S_2),$$

where  $S_1$  and  $S_2$  – 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.

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

7.8.2.1 The EUT was set up as shown in Figure 7.8.1, energized and the performance check was conducted.

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

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

### 7.8.3 Test procedure for spurious emission field strength measurements above 30 MHz

7.8.3.1 The EUT was set up as shown in Figure 7.8.2, energized and the performance check was conducted.

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

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



<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

Figure 7.8.1 Setup for spurious emission field strength measurements below 30 MHz

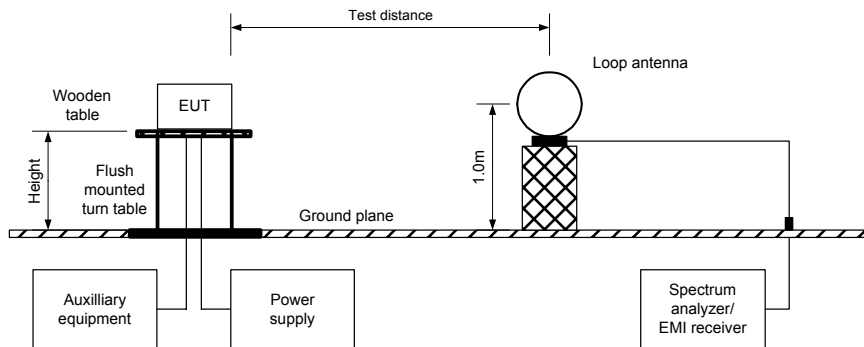
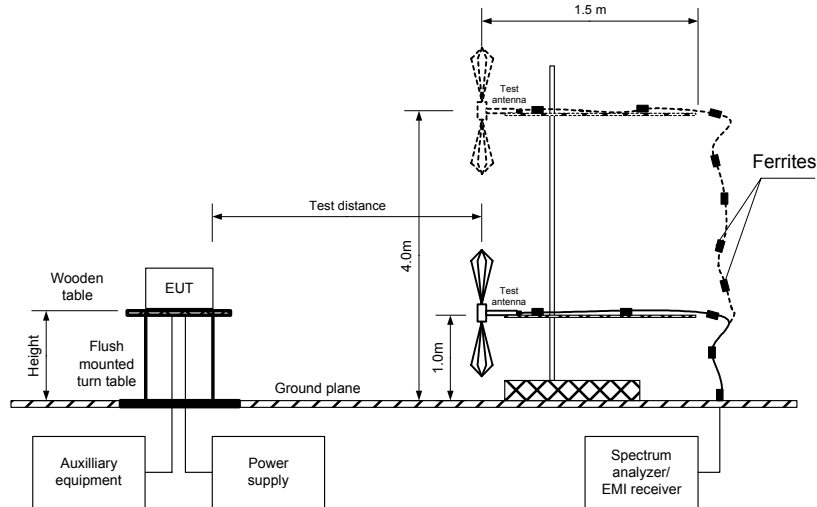


Figure 7.8.2 Setup for spurious emission field strength measurements above 30 MHz





<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions	
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4	
<b>Test mode:</b> Compliance	<b>Verdict: PASS</b>
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM	
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa
<b>Relative Humidity:</b> 45 %	
<b>Power Supply:</b> 120 VAC	
<b>Remarks:</b> 6.5 dBi antenna	

**Table 7.8.2 Field strength of emissions outside restricted bands**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: OFDM 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 BIT RATE: Maximum  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: Maximum  
 DETECTOR USED: Peak  
 RESOLUTION BANDWIDTH: 100 kHz  
 VIDEO BANDWIDTH: 300 kHz  
 TEST ANTENNA TYPE: Active loop (9 kHz – 30 MHz)  
 Biconilog (30 MHz – 1000 MHz)  
 Double ridged guide (above 1000 MHz)  
 EBW: 10 MHz (maximum, aggregate power)

Frequency MHz	Field strength of spurious, dB(µV/m)	Antenna polarization	Antenna height, m	Azimuth, degrees*	Field strength of carrier, dB(µV/m)	Attenuation below carrier, dBc	Limit, dBc	Margin, dB**	Verdict
<b>Low carrier frequency</b>									Pass
All emission were more than 20 dB below the limit									
<b>Mid carrier frequency</b>									Pass
All emission were more than 20 dB below the limit									
<b>High carrier frequency</b>									Pass
All emission were more than 20 dB below the limit									

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



<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

**Table 7.8.3 Field strength of spurious emissions above 1 GHz within restricted bands**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: OFDM 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 BIT RATE: Maximum  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: Maximum  
 DETECTOR USED: Peak  
 RESOLUTION BANDWIDTH: 1000 kHz  
 TEST ANTENNA TYPE: Double ridged guide  
 EBW: 10 MHz (maximum, aggregate power)

frequency MHz	Antenna		Azimuth degrees	Peak field strength(VBW=3 MHz)			Average field strength(VBW=10 Hz)				Verdict
	Polarization	height m		Measured dB(μV/m)	Limit, dB(μV/m)	Margin, dB**	Measured dB(μV/m)	Calculated dB(μV/m)	Limit, dB(μV/m)	Margin dB***	
<b>Low carrier frequency</b>											
2487.003	Vert	1.0	350	51.19	74.0	-22.81	50.09	45.86	54.0	-8.14	Pass
<b>Mid carrier frequency</b>											
2487.003	Vert	1.0	350	51.10	74.0	-22.90	49.85	45.42	54.0	-8.58	Pass
<b>High carrier frequency</b>											
2487.003	Vert	1.0	350	51.13	74.0	-22.87	49.27	44.84	54.0	-9.16	Pass

\*- EUT front panel refers to 0 degrees position of turntable.  
 \*\*- Margin = Measured field strength - specification limit.  
 \*\*\*- Margin = Calculated field strength - specification limit,  
 where Calculated field strength = Measured field strength + average factor.

**Table 7.8.4 Average factor calculation**

Transmission pulse		Transmission burst		Transmission train duration, ms	Average factor, dB
Duration, ms	Period, ms	Duration, ms	Period, ms		
3	5	-	-	-	-4.43

\*- Average factor was calculated as follows  
 for pulse train shorter than 100 ms:  $Average\ factor = 20 \times \log_{10} \left( \frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{Train\ duration} \times Number\ of\ bursts\ within\ pulse\ train \right)$   
 for pulse train longer than 100 ms:  $Average\ factor = 20 \times \log_{10} \left( \frac{Pulse\ duration}{Pulse\ period} \times \frac{Burst\ duration}{100\ ms} \times Number\ of\ bursts\ within\ 100\ ms \right)$



<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

**Table 7.8.5 Field strength of spurious emissions below 1 GHz within restricted bands**

ASSIGNED FREQUENCY: 5250.0 – 5350.0 MHz  
 INVESTIGATED FREQUENCY RANGE: 0.009 - 40000 MHz  
 TEST DISTANCE: 3 m  
 MODULATION: OFDM 64QAM (worst case power and power density)  
 MODULATING SIGNAL: PRBS  
 BIT RATE: Maximum  
 DUTY CYCLE: 100 %  
 TRANSMITTER OUTPUT POWER: 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)  
 Biconical (30 MHz – 200 MHz)  
 Log periodic (200 MHz – 1000 MHz)  
 Biconilog (30 MHz – 1000 MHz)  
 10 MHz (maximum, aggregate power)

EBW:

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'				
<b>Low carrier frequency</b>								
All emission were more than 20 dB below the limit								Pass
<b>Mid carrier frequency</b>								
All emission were more than 20 dB below the limit								Pass
<b>High carrier frequency</b>								
All emission were more than 20 dB below the limit								Pass

\*- Margin = Measured emission - specification limit.

\*\* - EUT front panel refer to 0 degrees position of turntable.

**Table 7.8.6 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	

**Reference numbers of test equipment used**

HL 0521	HL 0604	HL 0768	HL 0769	HL 1424	HL 1425	HL 2254	HL 2387
HL 2432	HL 2697	HL 2883	HL 2909	HL 2952	HL 3123	HL 3286	HL 3351
HL 3352	HL 3616						

Full description is given in Appendix A.



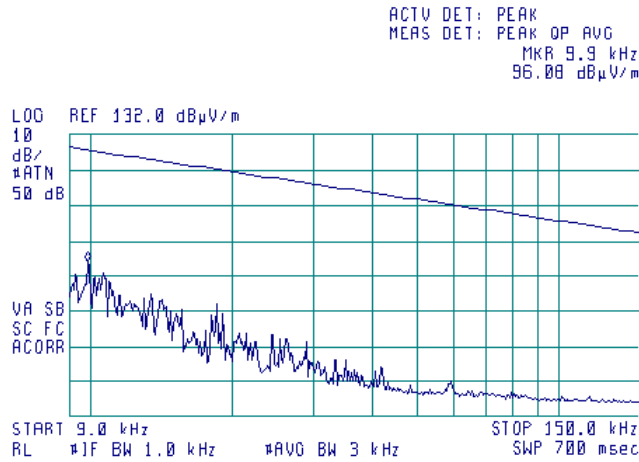


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

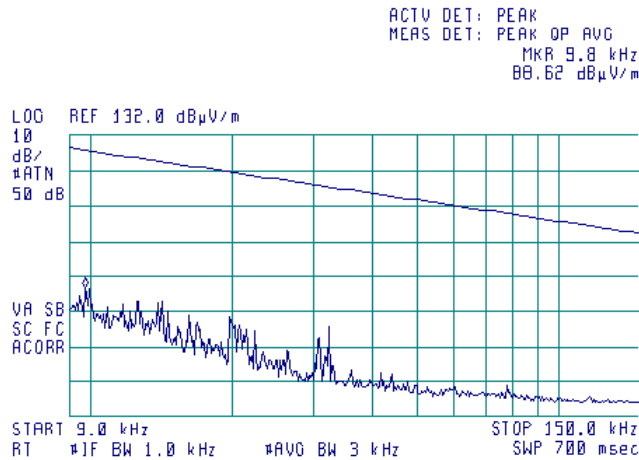
Plot 7.8.1 Radiated emission measurements from 9 to 150 kHz at the low carrier frequency

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



Plot 7.8.2 Radiated emission measurements from 9 to 150 kHz at the mid carrier frequency

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



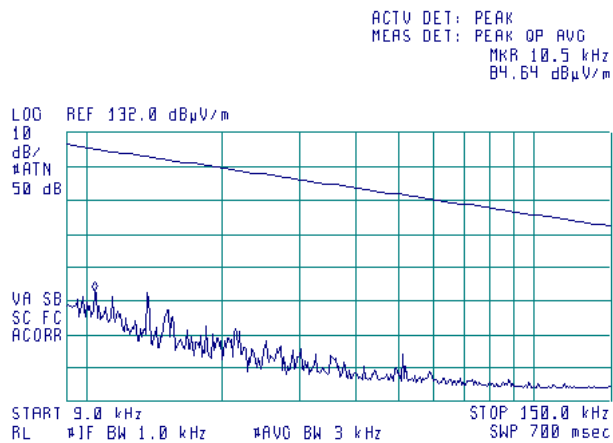


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

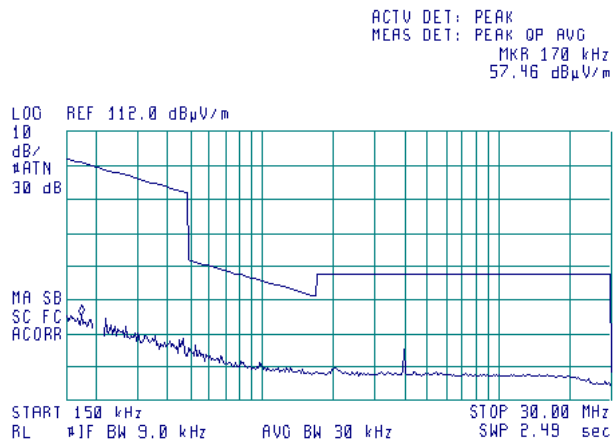
Plot 7.8.3 Radiated emission measurements from 9 to 150 kHz at the high carrier frequency

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



Plot 7.8.4 Radiated emission measurements from 0.15 to 30 MHz at the low carrier frequency

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



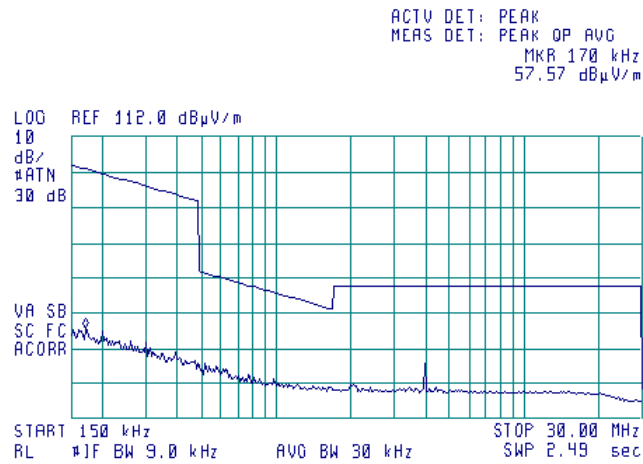


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

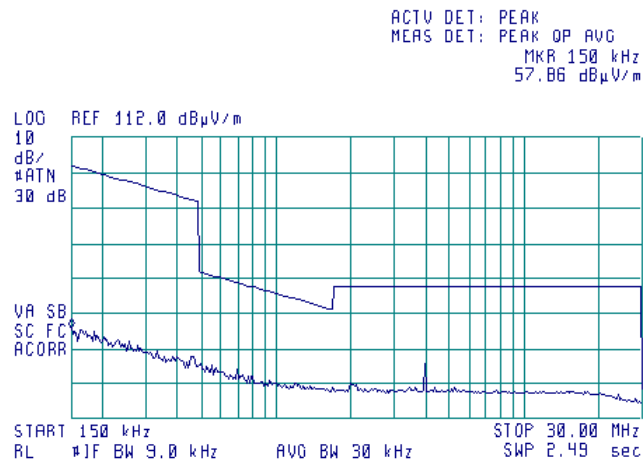
Plot 7.8.5 Radiated emission measurements from 0.15 to 30 MHz at the mid carrier frequency

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



Plot 7.8.6 Radiated emission measurements from 0.15 to 30 MHz at the high carrier frequency

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



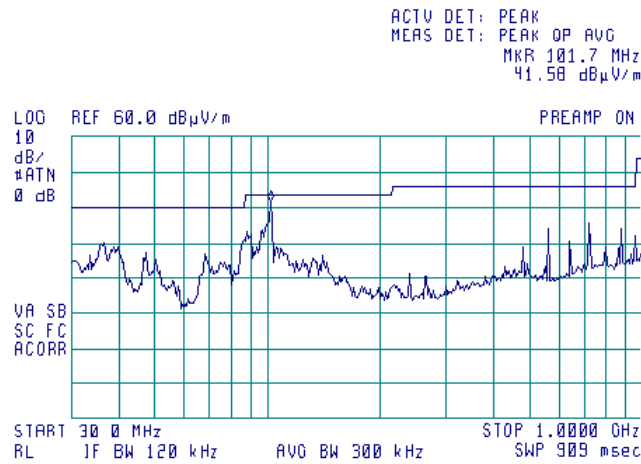


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

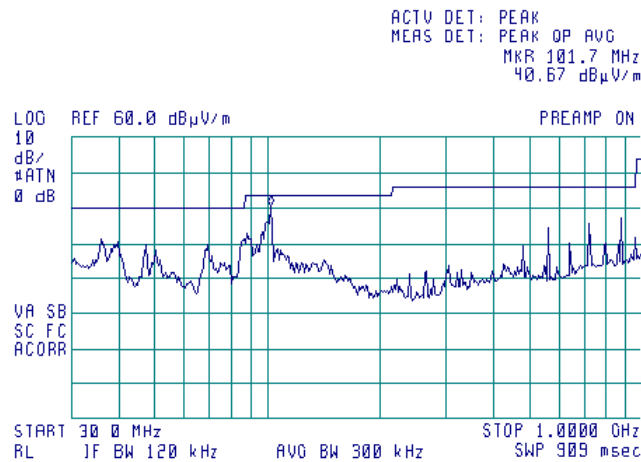
**Plot 7.8.7 Radiated emission measurements from 30 to 1000 MHz at the low carrier frequency**

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



**Plot 7.8.8 Radiated emission measurements from 30 to 1000 MHz at the mid carrier frequency**

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



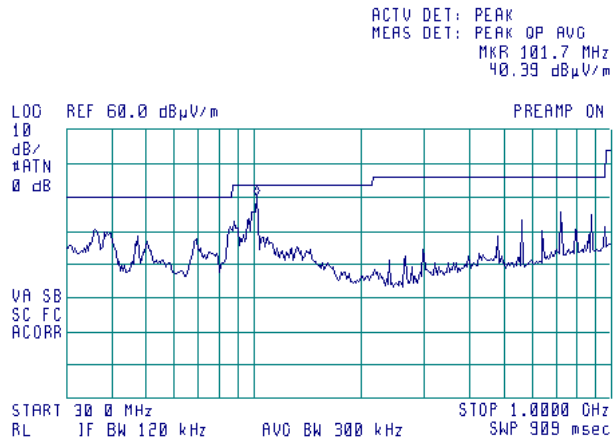


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

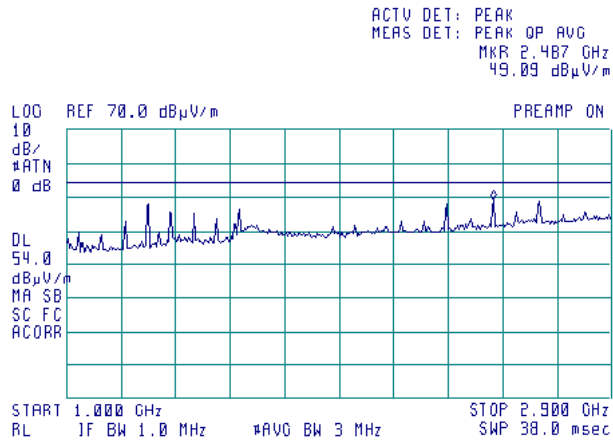
Plot 7.8.9 Radiated emission measurements from 30 to 1000 MHz at the high carrier frequency

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



Plot 7.8.10 Radiated emission measurements from 1000 to 2900 MHz at the low carrier frequency

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



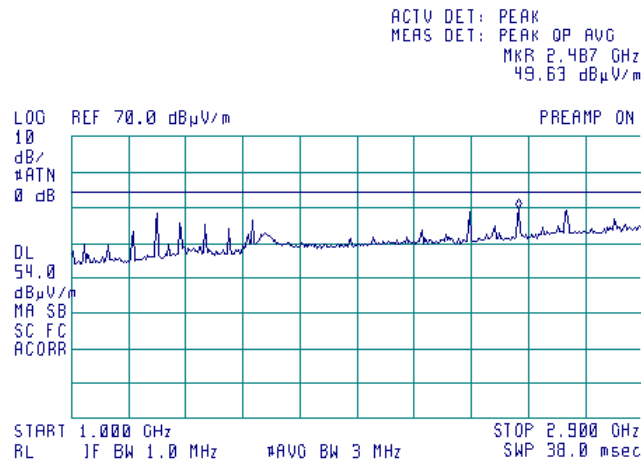


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

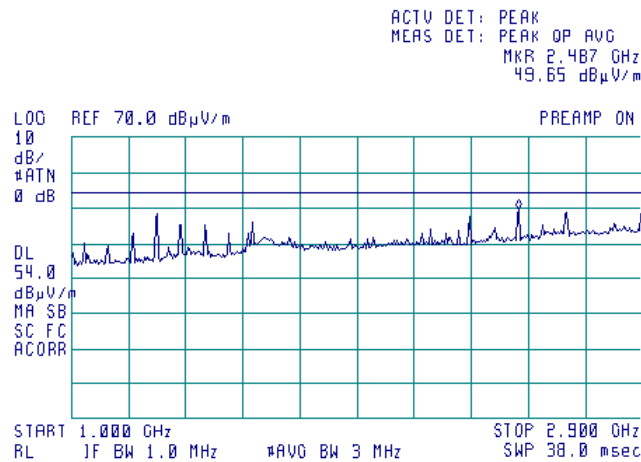
**Plot 7.8.11 Radiated emission measurements from 1000 to 2900 MHz at the mid carrier frequency**

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



**Plot 7.8.12 Radiated emission measurements from 1000 to 2900 MHz at the high carrier frequency**

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



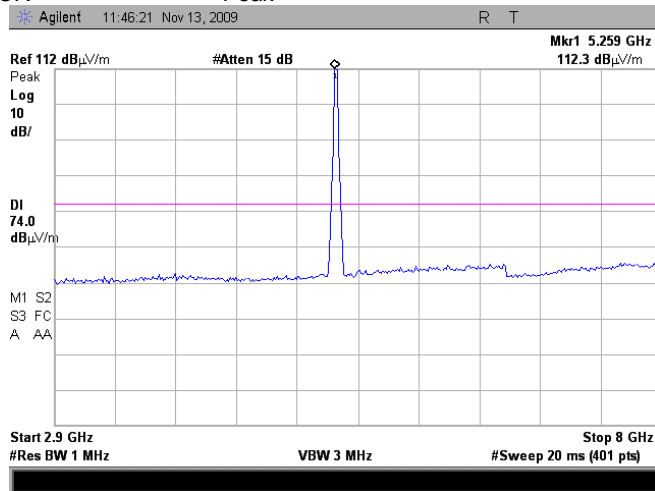


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

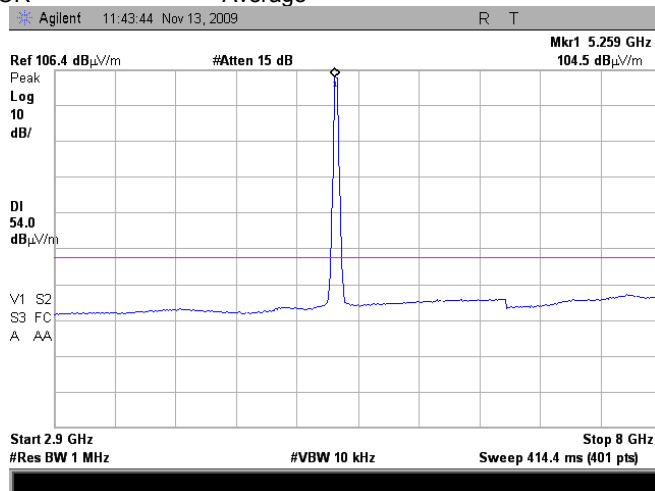
Plot 7.8.13 Radiated emission measurements from 2900 to 8000 MHz at the low carrier frequency

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



Plot 7.8.14 Radiated emission measurements from 2900 to 8000 MHz at the low carrier frequency

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



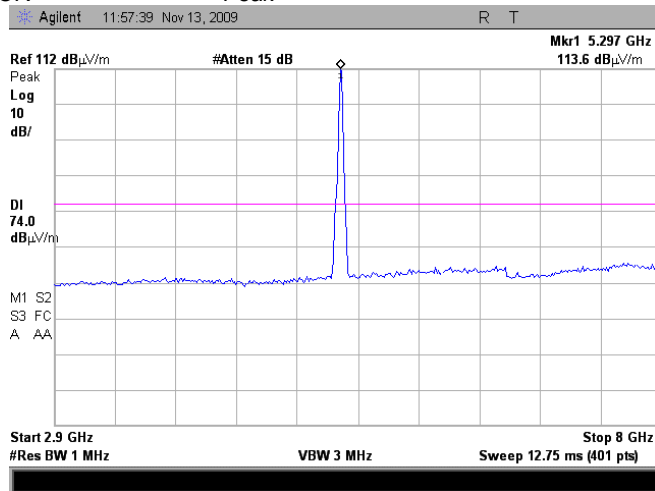


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

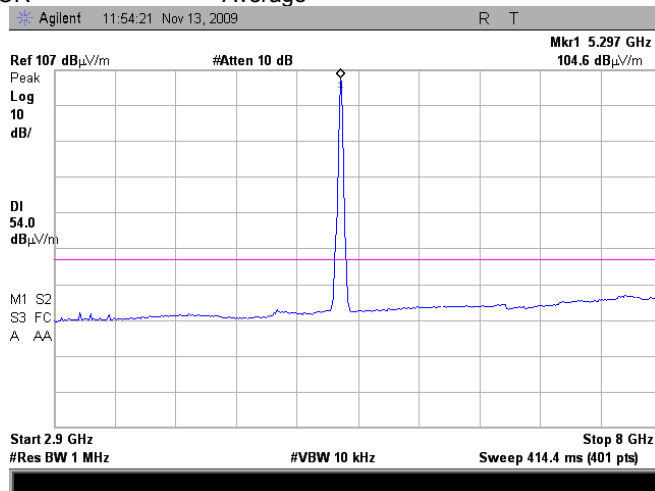
Plot 7.8.15 Radiated emission measurements from 2900 to 8000 MHz at the mid carrier frequency

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



Plot 7.8.16 Radiated emission measurements from 2900 to 8000 MHz at the mid carrier frequency

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





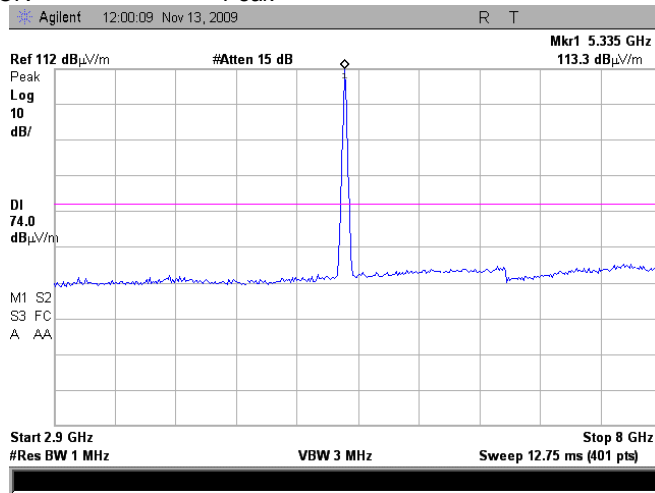


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

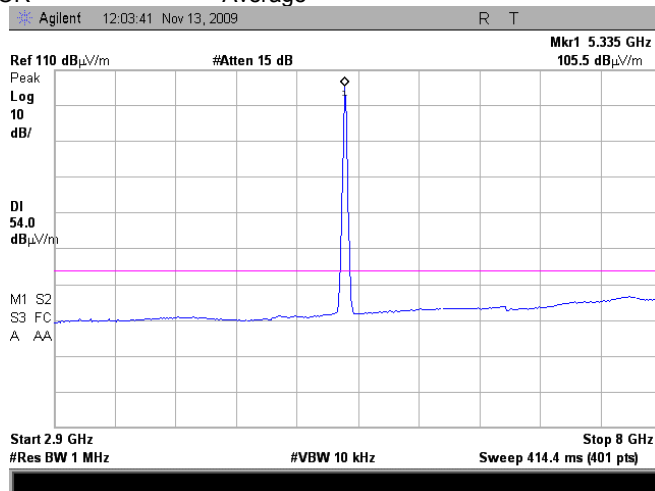
Plot 7.8.17 Radiated emission measurements from 2900 to 8000 MHz at the high carrier frequency

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



Plot 7.8.18 Radiated emission measurements from 2900 to 8000 MHz at the high carrier frequency

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



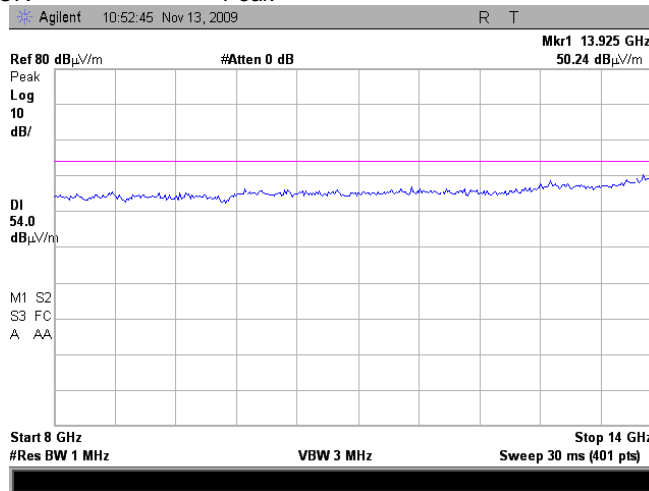


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

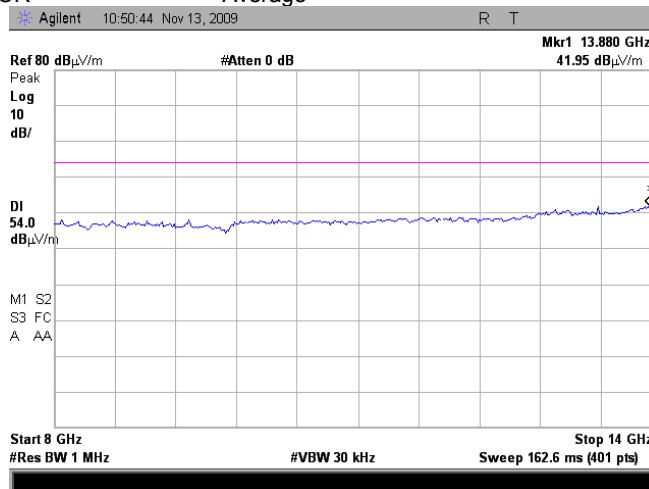
Plot 7.8.19 Radiated emission measurements from 8000 to 14000 MHz at the low carrier frequency

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



Plot 7.8.20 Radiated emission measurements from 8000 to 14000 MHz at the low carrier frequency

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



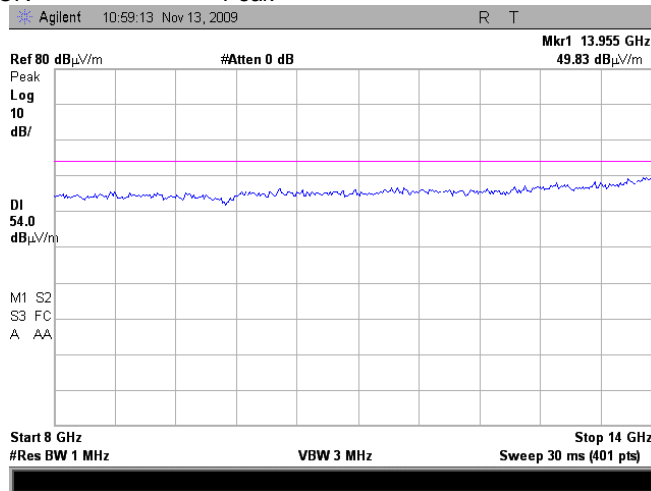


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

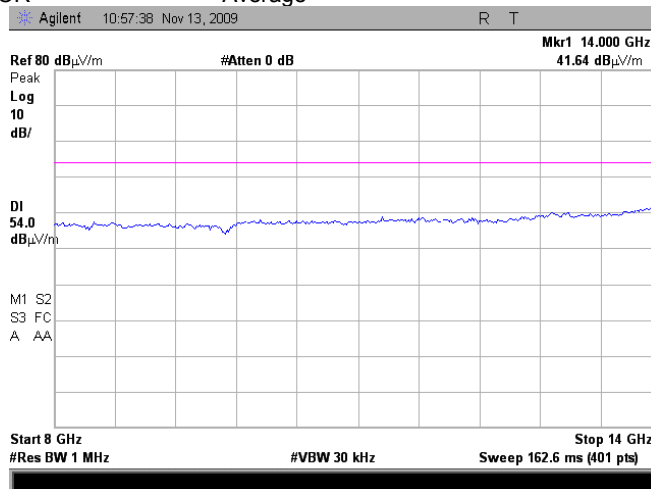
Plot 7.8.21 Radiated emission measurements from 8000 to 14000 MHz at the mid carrier frequency

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



Plot 7.8.22 Radiated emission measurements from 8000 to 14000 MHz at the mid carrier frequency

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



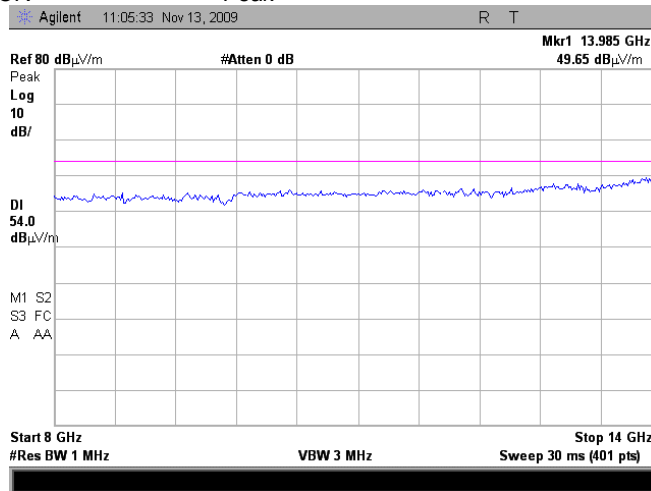


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

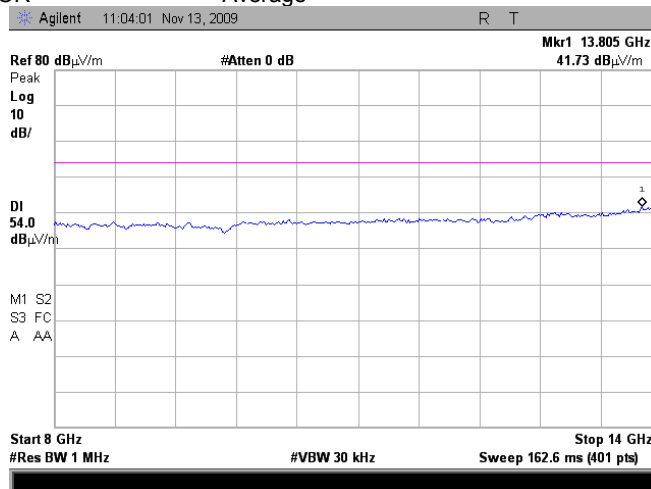
Plot 7.8.23 Radiated emission measurements from 8000 to 14000 MHz at the high carrier frequency

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



Plot 7.8.24 Radiated emission measurements from 8000 to 14000 MHz at the high carrier frequency

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



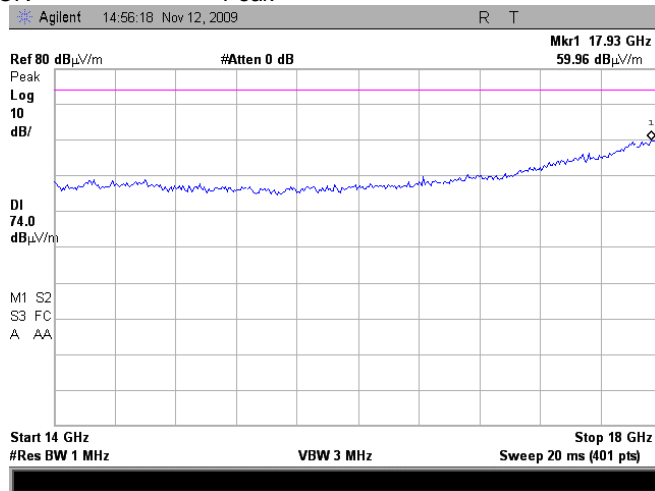


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

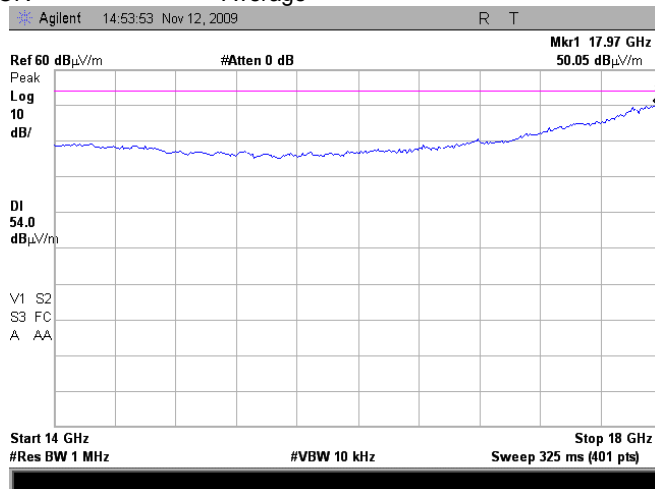
Plot 7.8.25 Radiated emission measurements from 14000 to 18000 MHz at the low carrier frequency

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



Plot 7.8.26 Radiated emission measurements from 14000 to 18000 MHz at the low carrier frequency

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



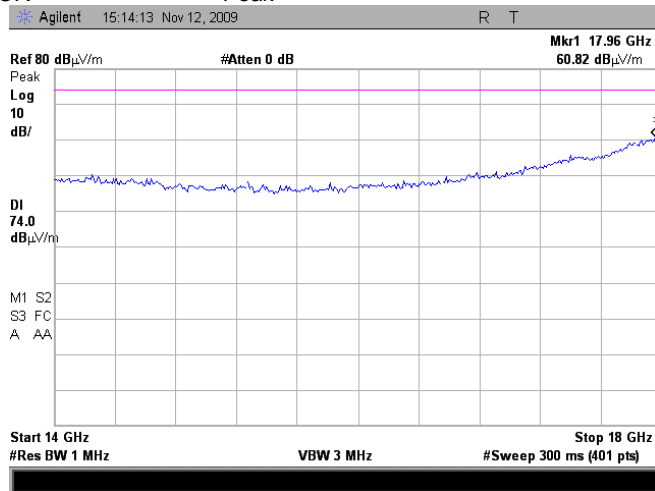


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

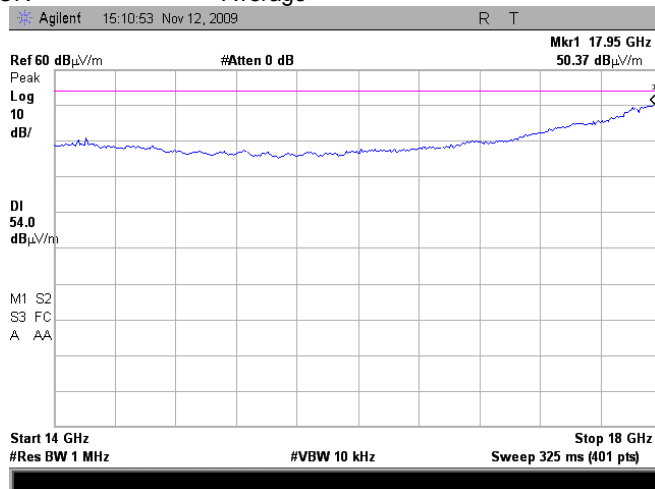
Plot 7.8.27 Radiated emission measurements from 14000 to 18000 MHz at the mid carrier frequency

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



Plot 7.8.28 Radiated emission measurements from 14000 to 18000 MHz at the mid carrier frequency

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



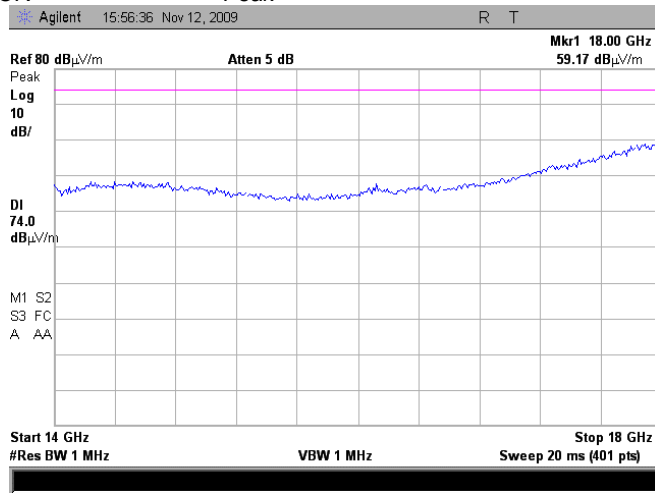


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

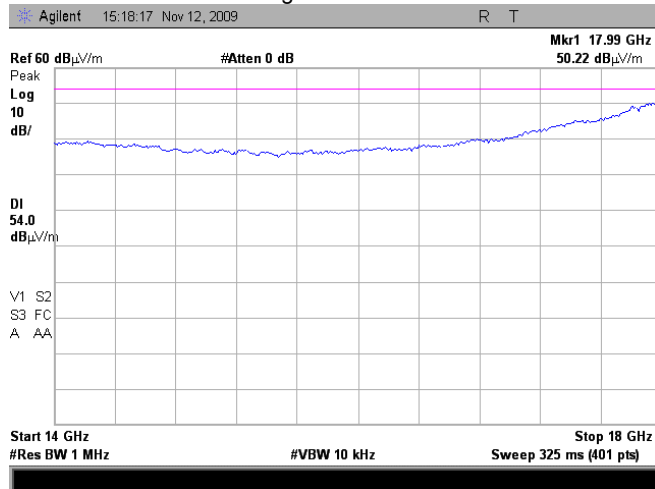
Plot 7.8.29 Radiated emission measurements from 14000 to 18000 MHz at the high carrier frequency

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



Plot 7.8.30 Radiated emission measurements from 14000 to 18000 MHz at the high carrier frequency

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



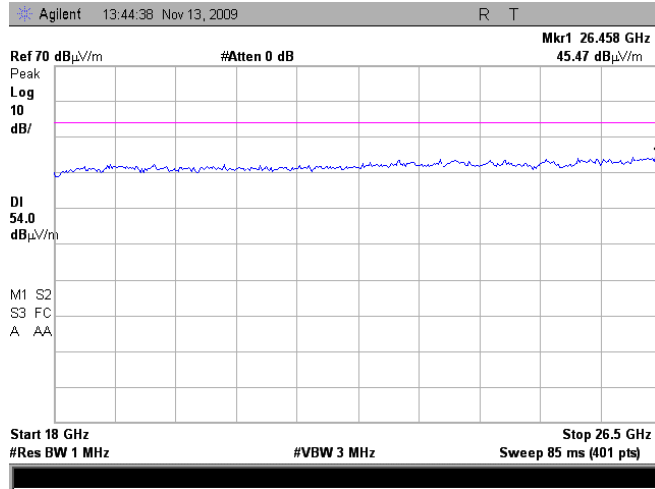


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

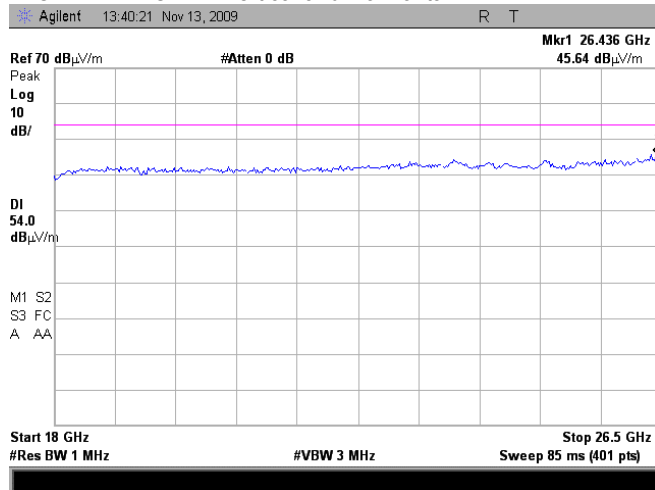
Plot 7.8.31 Radiated emission measurements from 18000 to 26500 MHz at the low carrier frequency

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



Plot 7.8.32 Radiated emission measurements from 18000 to 26500 MHz at the mid carrier frequency

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





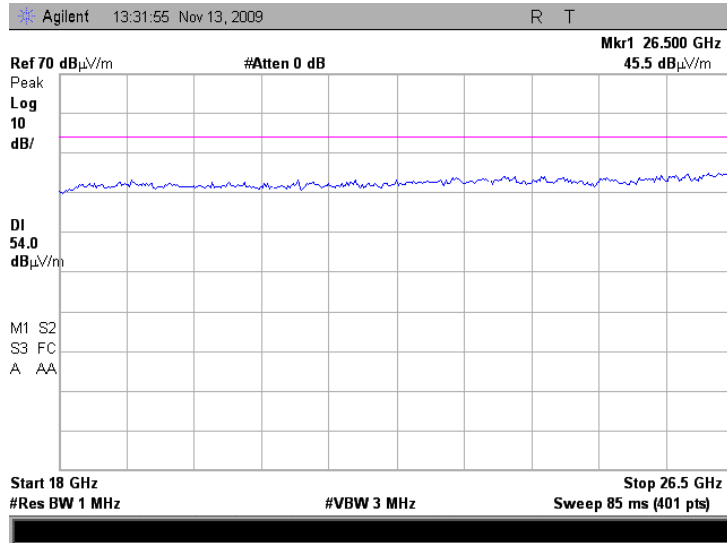


HERMON LABORATORIES

<b>Test specification:</b>	<b>FCC section 15.407(b)(2), Unwanted radiated emissions</b>		
<b>Test procedure:</b>	Public notice DA 00-705 / ANSI C63.4, Section 13.1.4		
<b>Test mode:</b>	Compliance	<b>Verdict:</b>	<b>PASS</b>
<b>Date &amp; Time:</b>	11/13/2009 2:25:19 PM		
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

**Plot 7.8.33 Radiated emission measurements from 18000 to 26500 MHz at the high carrier frequency**

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



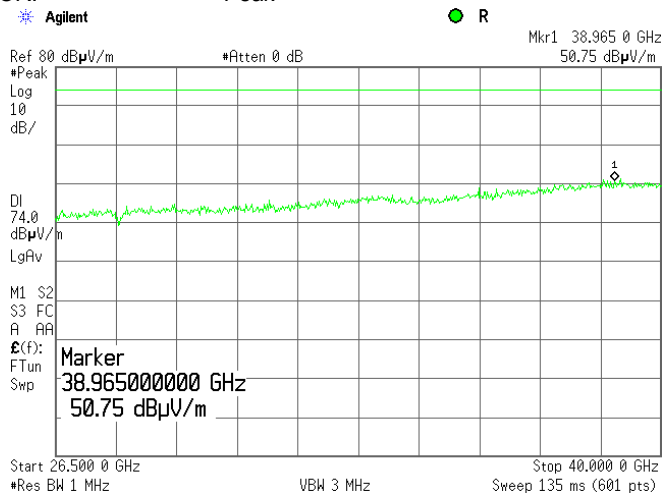


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

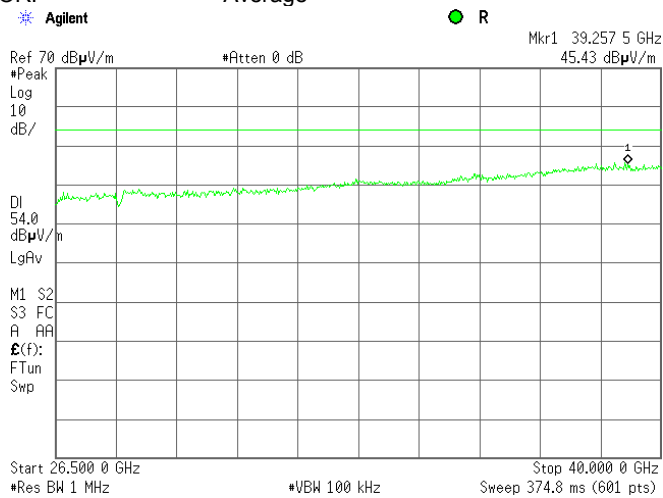
Plot 7.8.34 Radiated emission measurements from 26500 to 40000 MHz at the low carrier frequency

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



Plot 7.8.35 Radiated emission measurements from 26500 to 40000 MHz at the low carrier frequency

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



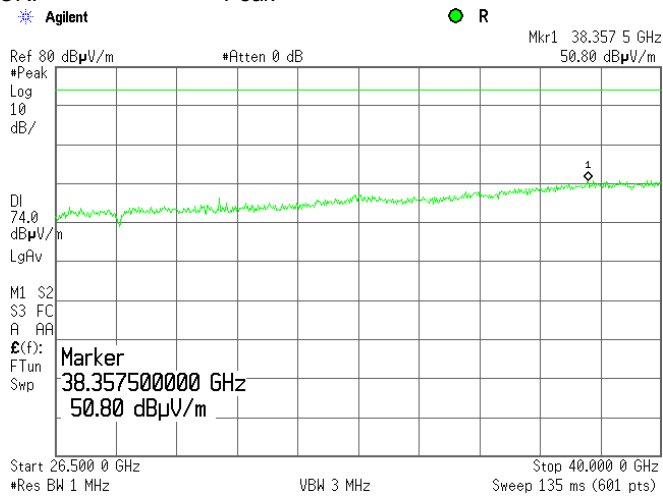


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

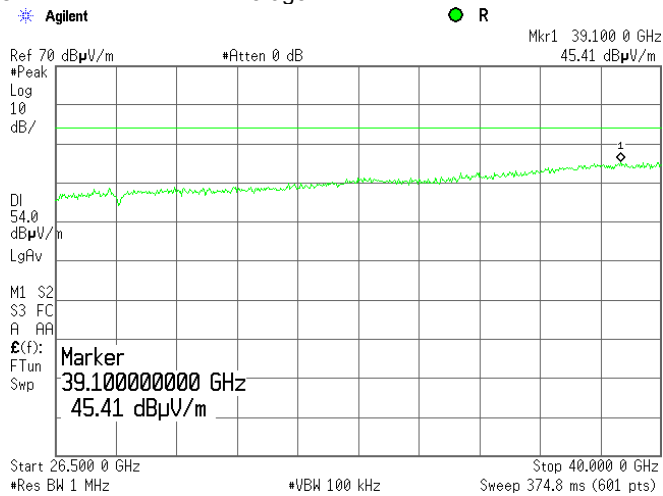
Plot 7.8.36 Radiated emission measurements from 26500 to 40000 MHz at the mid carrier frequency

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



Plot 7.8.37 Radiated emission measurements from 26500 to 40000 MHz at the mid carrier frequency

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



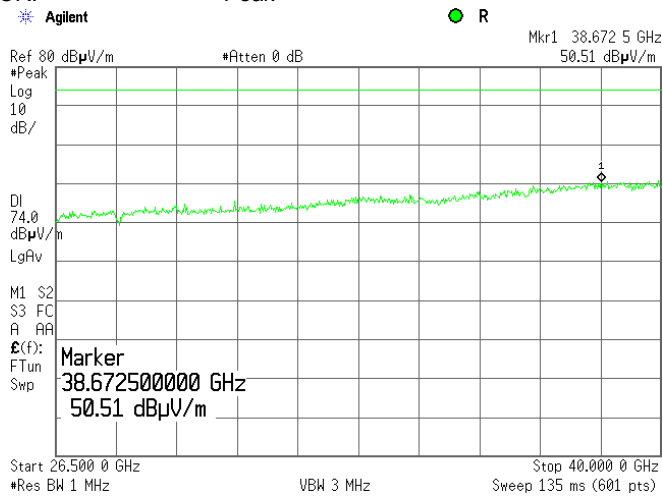


HERMON LABORATORIES

<b>Test specification:</b> FCC section 15.407(b)(2), Unwanted radiated emissions			
<b>Test procedure:</b> Public notice DA 00-705 / ANSI C63.4, Section 13.1.4			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date &amp; Time:</b> 11/13/2009 2:25:19 PM			
<b>Temperature:</b> 26 °C	<b>Air Pressure:</b> 1015 hPa	<b>Relative Humidity:</b> 45 %	<b>Power Supply:</b> 120 VAC
<b>Remarks:</b> 6.5 dBi antenna			

Plot 7.8.38 Radiated emission measurements from 26500 to 40000 MHz at the high carrier frequency

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



Plot 7.8.39 Radiated emission measurements from 26500 to 40000 MHz at the high carrier frequency

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

