## 7.6.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

## **TEST PROCEDURE**

The transmitter output is connected to a power meter.

## **RESULTS**

The cable assembly insertion loss of 17.2 dB (including 16 dB pad and 1.2 dB cable) entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5270	20.30	21.19	23.78
High	5310	13.35	13.45	16.41

#### 7.6.4. PEAK POWER SPECTRAL DENSITY

## **LIMITS**

FCC §15.407 (a) (2)

IC RSS-210 A9.2 (2)

For the 5.25-5.35 GHz band, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

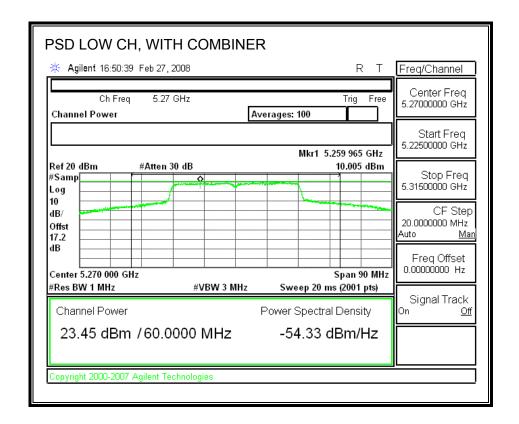
The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 11 dBm.

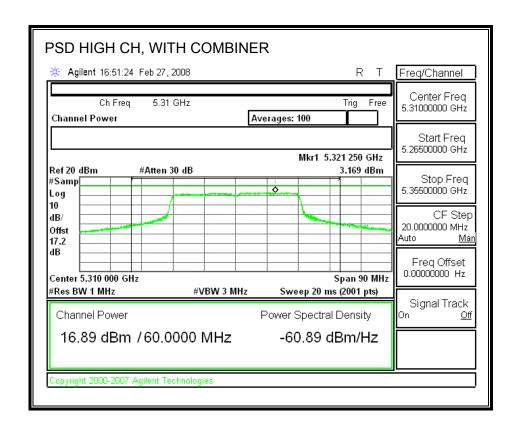
## **TEST PROCEDURE**

The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002. PPSD method #2 was used.

Channel	Frequency	PPSD With Combiner	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	5270	10.01	11	-0.99
High	5310	3.17	11	-7.83

## POWER SPECTRAL DENSITY WITH COMBINER





#### 7.6.5. PEAK EXCURSION

## **LIMITS**

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

## **TEST PROCEDURE**

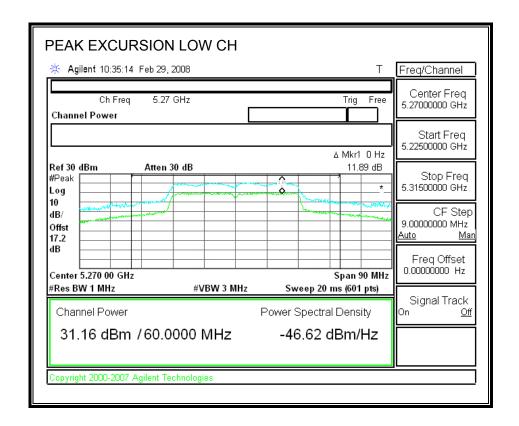
The transmitter outputs are connected to the spectrum analyzer via a combiner.

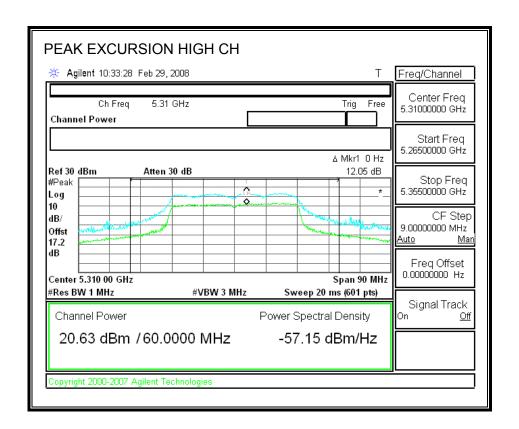
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

Since Method # 1 was used for peak power measurements, Method # 1 settings are used for the second PPSD trace.

Channel	Frequency	Peak Excursion	Limit	Margin
	(MHz)	(dB)	(dB)	(dB)
Low	5270	11.89	13	-1.11
High	5310	12.05	13	-0.95

## PEAK EXCURSION





#### 7.6.6. CONDUCTED SPURIOUS EMISSIONS

## **LIMITS**

FCC §15.407 (b) (2)

IC RSS-210 A9.3 (2)

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.25-5.35 GHz band shall not exceed an EIRP of -27 dBm / MHz.

Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.

#### **TEST PROCEDURE**

Conducted RF measurements of the transmitter output are made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

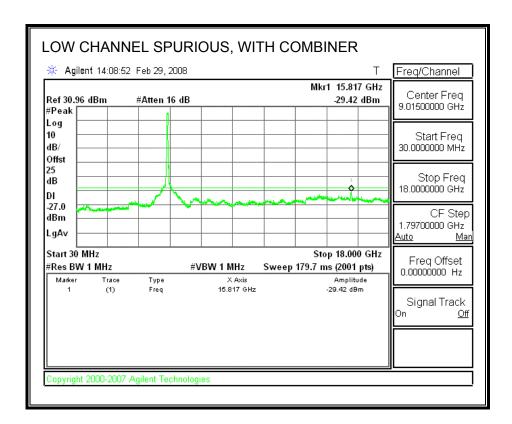
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1 MHz. The video bandwidth is set to 1 MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

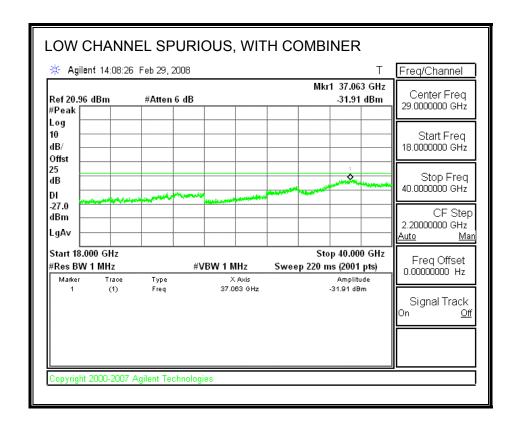
Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

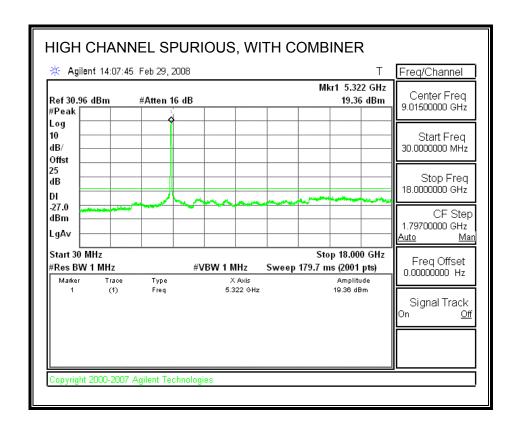
## **RESULTS**

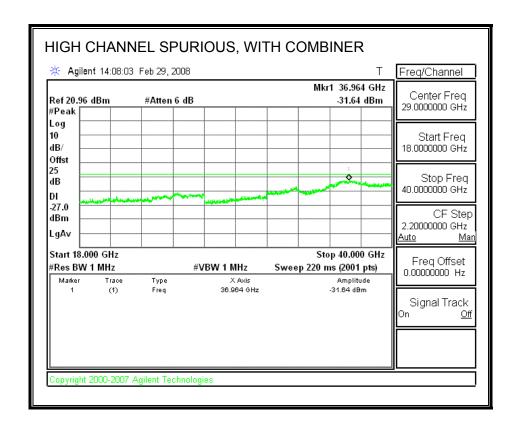
Page 158 of 399

## SPURIOUS EMISSIONS WITH COMBINER









# 7.7. 802.11a DUAL CHAIN LEGACY MODE IN THE 5.6 GHz BAND

## 7.7.1. 26 dB and 99% BANDWIDTH

## **LIMITS**

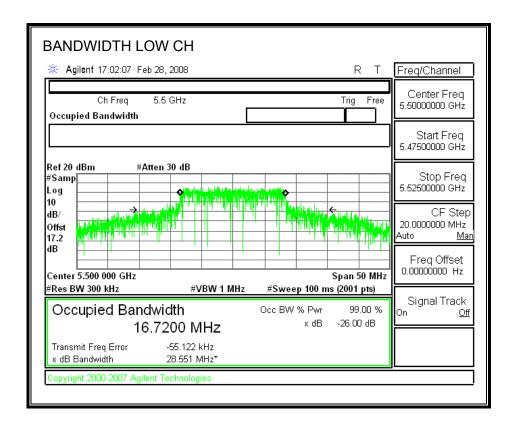
None; for reporting purposes only.

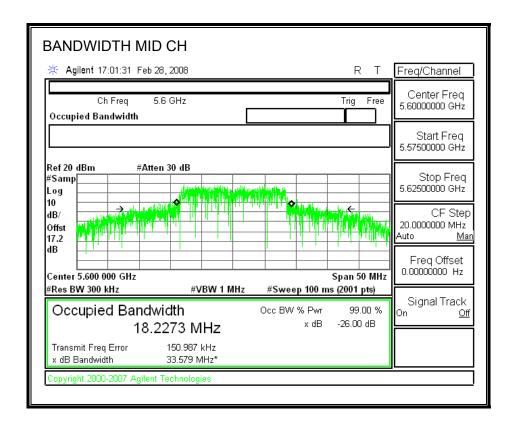
## **TEST PROCEDURE**

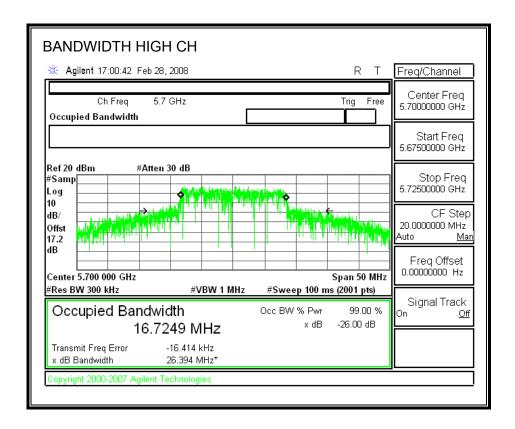
The transmitter outputs are connected to the spectrum analyzer via a combiner. The RBW is set to 1% to 3% of the measured bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal bandwidth function is utilized.

Channel	Frequency	26 dB Bandwidth	99% Bandwidth
	(MHz)	(MHz)	(MHz)
Low	5500	28.551	16.7200
Middle	5600	33.579	18.2273
High	5700	26.394	16.7249

## 26 dB and 99% BANDWIDTH







#### 7.7.2. OUTPUT POWER

## **LIMITS**

FCC §15.407 (a) (2) IC RSS-210 A9.2 (2)

Effective Legacy Gain
(dBi)
8.20

For the 5.47-5.725 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

#### **RESULTS**

## Limit

Channel	Frequency	Fixed	В	11 + 10 Log B	Antenna	Limit
		Limit		Limit	Gain	
	(MHz)	(dBm)	(MHz)	(dBm)	(dBi)	(dBm)
Low	5500	24	28.551	25.56	8.20	21.80
Mid	5600	24	33.579	26.26	8.20	21.80
High	5700	24	26.394	25.22	8.20	21.80

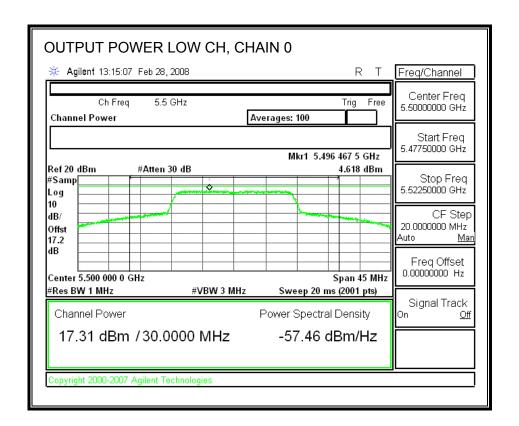
## **Individual Chain Results**

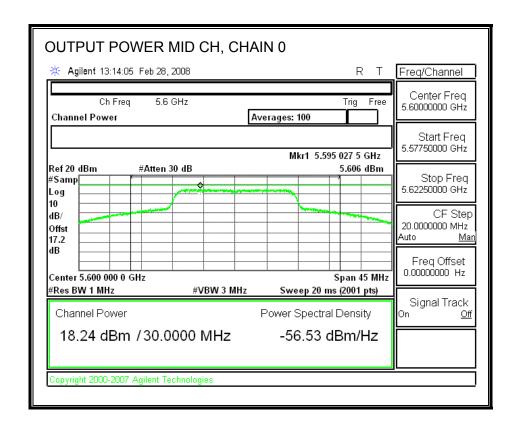
Channel	Frequency	Chain 0	Chain 1	Total	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	17.31	17.08	20.21	21.80	-1.59
Mid	5600	18.24	18.01	21.14	21.80	-0.66
High	5700	17.44	17.36	20.41	21.80	-1.39

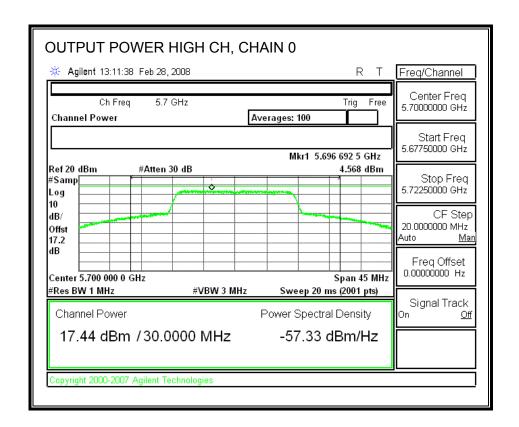
**DATE: MARCH 10, 2008** 

IC: 4104A-AR5BXB92

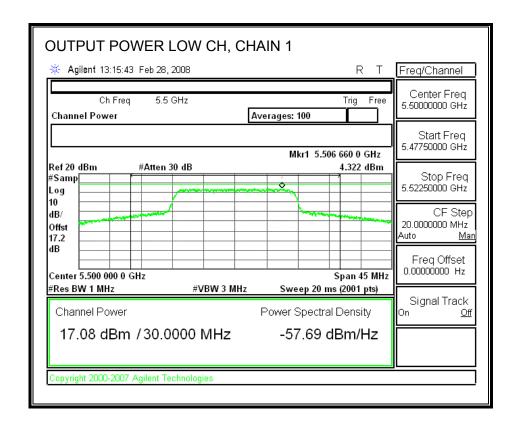
## **CHAIN 0 OUTPUT POWER**

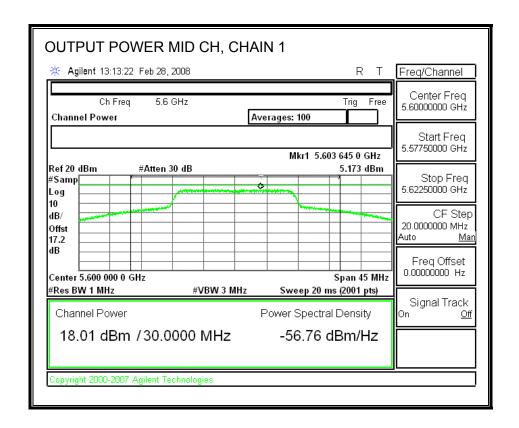


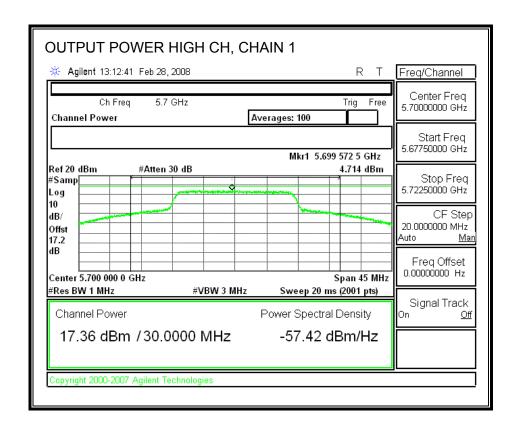




## **CHAIN 1 OUTPUT POWER**







## 7.7.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

## **TEST PROCEDURE**

The transmitter output is connected to a power meter.

## **RESULTS**

The cable assembly insertion loss of 17.2 dB (including 16 dB pad and 1.2 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	17.10	16.83	19.98
Middle	5600	18.04	17.89	20.98
High	5700	17.48	17.39	20.45

#### 7.7.4. PEAK POWER SPECTRAL DENSITY

## **LIMITS**

FCC §15.407 (a) (2) IC RSS-210 A9.2 (2)

Effective Legacy Gain				
(dBi)				
8.20				

For the 5.47-5.725 GHz band, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

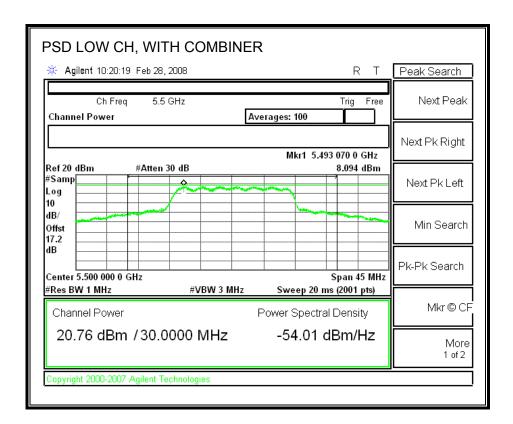
The maximum antenna gain is 8.2 dBi, therefore the limit is 8.8 dBm.

## **TEST PROCEDURE**

The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002. PPSD method #2 was used.

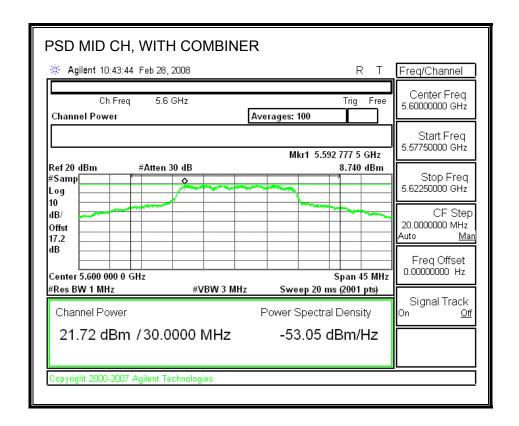
Channel	Frequency	PPSD With Combiner	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	5500	8.09	8.80	-0.71
Middle	5600	8.74	8.80	-0.06
High	5700	8.20	8.80	-0.60

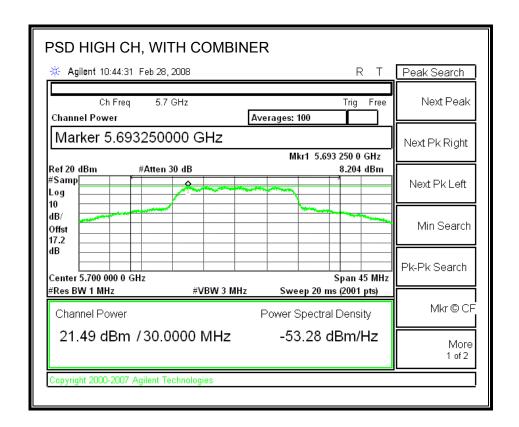
# **POWER SPECTRAL DENSITY WITH COMBINER**



DATE: MARCH 10, 2008

IC: 4104A-AR5BXB92





#### 7.7.5. PEAK EXCURSION

## **LIMITS**

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

## **TEST PROCEDURE**

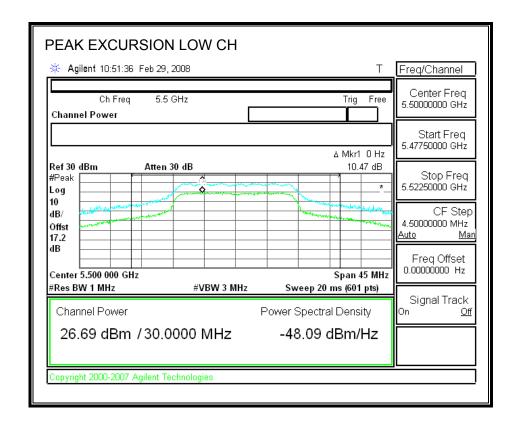
The transmitter outputs are connected to the spectrum analyzer via a combiner.

The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

Since Method # 1 was used for peak power measurements, Method # 1 settings are used for the second PPSD trace.

Channel	Frequency	requency Peak Excursion		Margin
	(MHz)	(dB)	(dB)	(dB)
Low	5500	10.47	13	-2.53
Middle	5600	10.80	13	-2.20
High	5700	12.14	13	-0.86

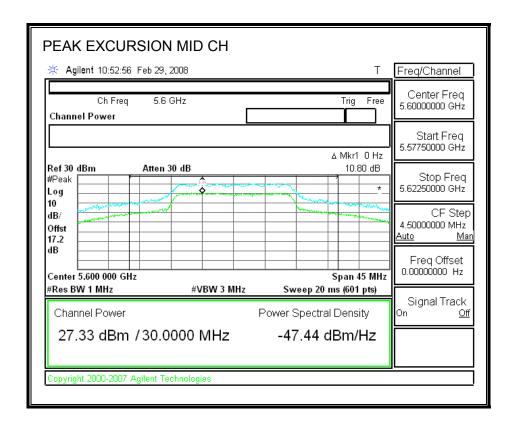
# **PEAK EXCURSION**

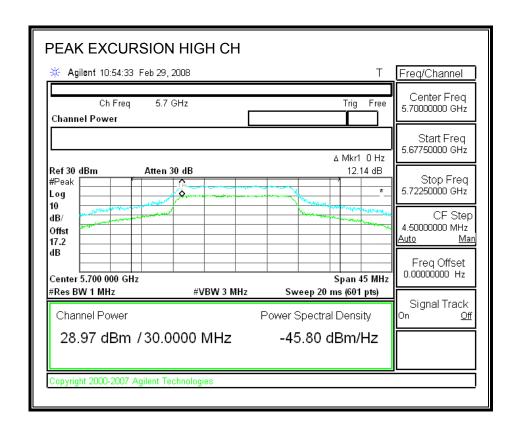


DATE: MARCH 10, 2008

IC: 4104A-AR5BXB92

FAX: (510) 661-0888





#### 7.7.6. CONDUCTED SPURIOUS EMISSIONS

## **LIMITS**

FCC §15.407 (b) (3)

IC RSS-210 A9.3 (3)

For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm / MHz.

#### **TEST PROCEDURE**

Conducted RF measurements of the transmitter output are made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

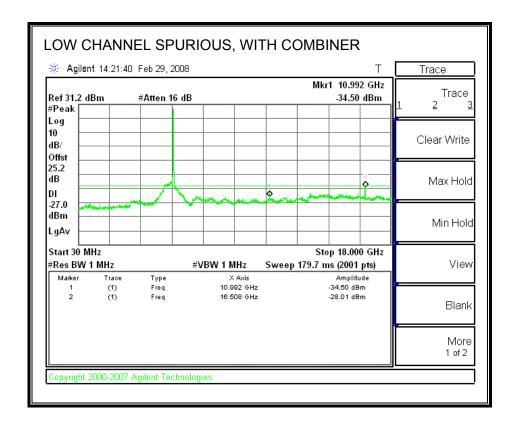
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1 MHz. The video bandwidth is set to 1 MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

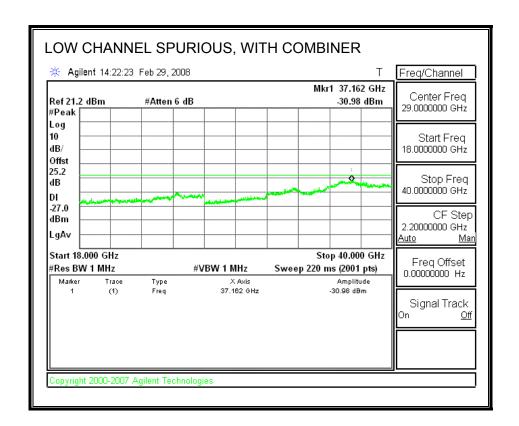
Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

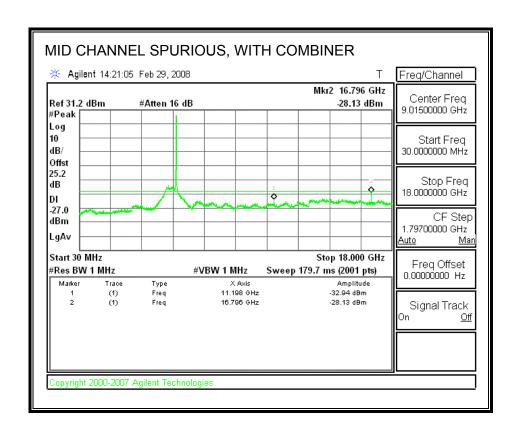
## **RESULTS**

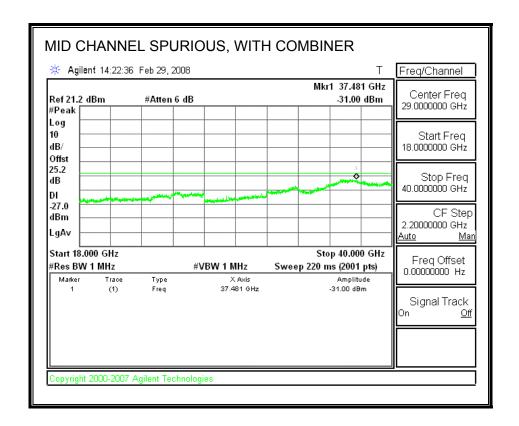
Page 183 of 399

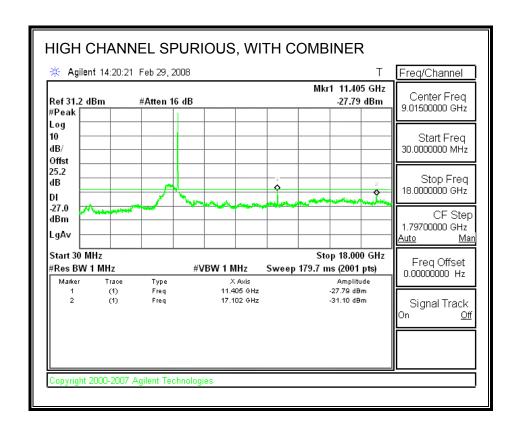
## **SPURIOUS EMISSIONS WITH COMBINER**

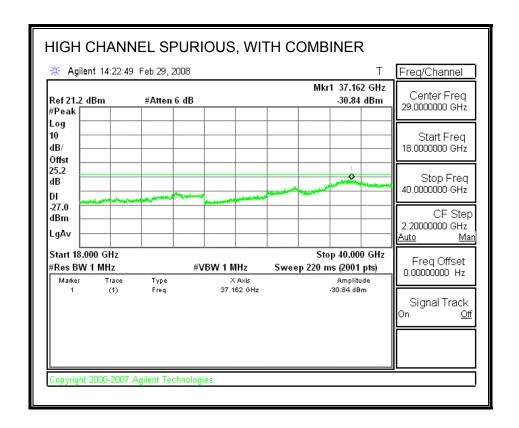












## 7.8. 802.11n HT20 MODE IN THE 5.6 GHz BAND

# 7.8.1. 26 dB and 99% BANDWIDTH

## **LIMITS**

None; for reporting purposes only.

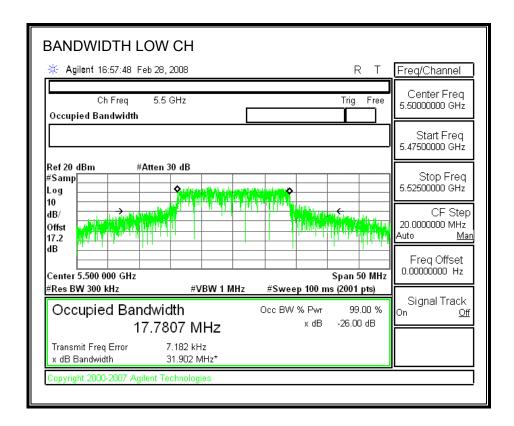
## **TEST PROCEDURE**

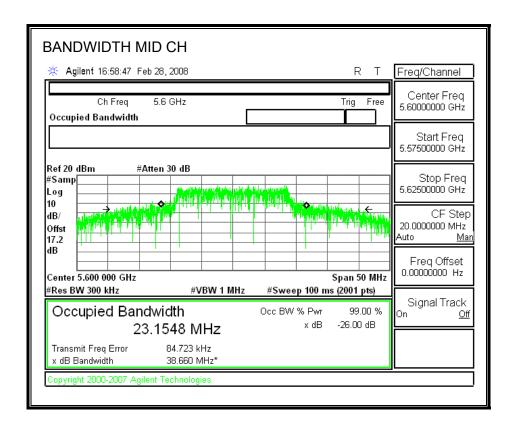
The transmitter outputs are connected to the spectrum analyzer via a combiner. The RBW is set to 1% to 3% of the measured bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal bandwidth function is utilized.

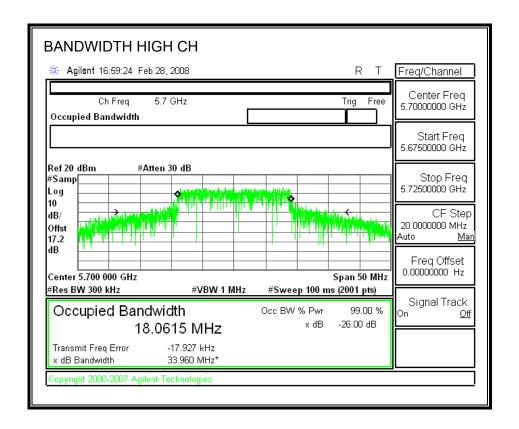
## **RESULTS**

Channel	Frequency	26 dB Bandwidth	99% Bandwidth
	(MHz)	(MHz)	(MHz)
Low	5500	31.902	17.7807
Middle	5600	38.660	23.1548
High	5700	33.960	18.0615

## 26 dB and 99% BANDWIDTH







#### 7.8.2. OUTPUT POWER

## **LIMITS**

FCC §15.407 (a) (2)

IC RSS-210 A9.2 (2)

For the 5.47-5.725 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## **TEST PROCEDURE**

The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

## **RESULTS**

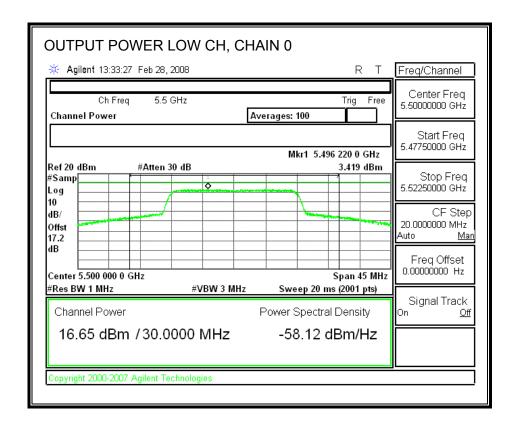
#### Limit

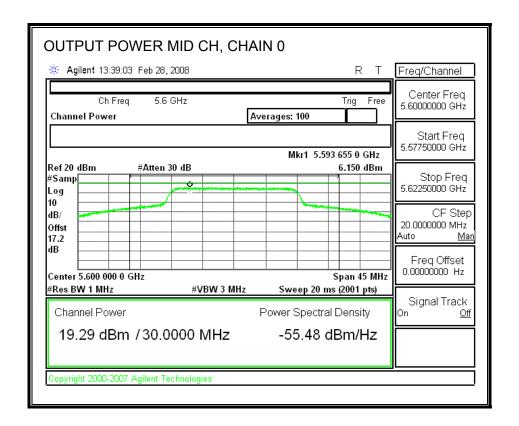
Channel	Frequency	Fixed	В	11 + 10 Log B	Antenna	Limit
		Limit		Limit	Gain	
	(MHz)	(dBm)	(MHz)	(dBm)	(dBi)	(dBm)
Low	5500	24	31.902	26.04	5.34	24
Mid	5600	24	38.660	26.87	5.34	24
High	5700	24	33.960	26.31	5.34	24

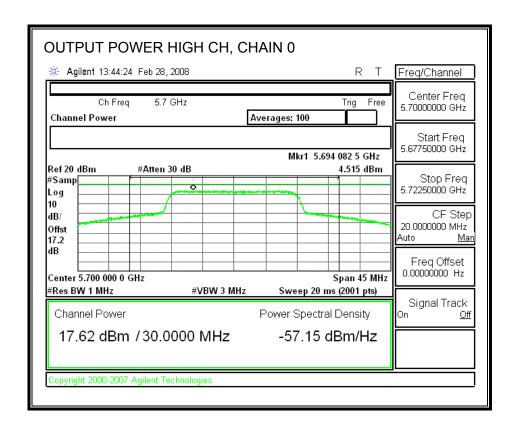
#### **Individual Chain Results**

Channel	Frequency	Chain 0	Chain 1	Total	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5500	16.65	16.82	19.75	24.00	-4.25
Mid	5600	19.29	19.07	22.19	24.00	-1.81
High	5700	17.62	17.54	20.59	24.00	-3.41

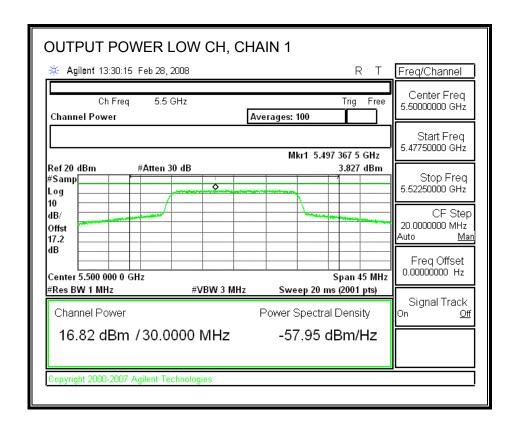
## **CHAIN 0 OUTPUT POWER**

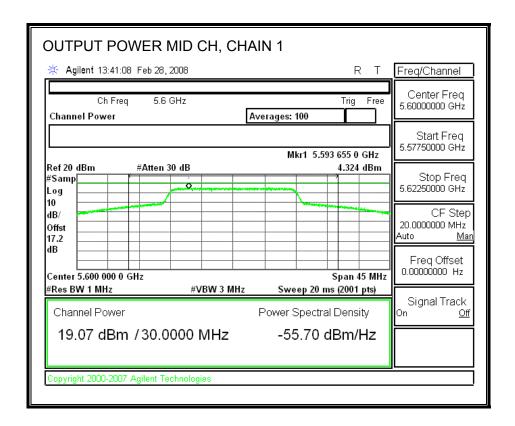


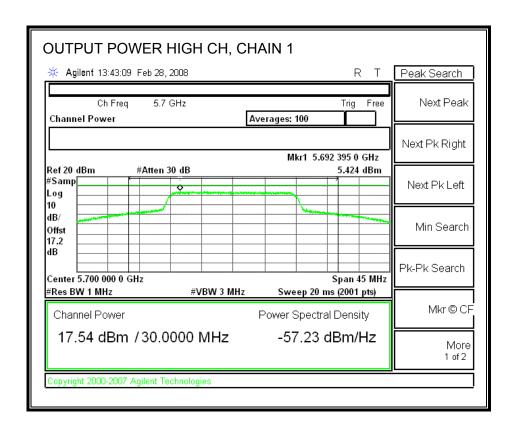




## **CHAIN 1 OUTPUT POWER**







## 7.8.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

## **TEST PROCEDURE**

The transmitter output is connected to a power meter.

## **RESULTS**

The cable assembly insertion loss of 17.2 dB (including 16 dB pad and 1.2 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5500	16.42	16.57	19.51
Middle	5600	19.14	19.05	22.11
High	5700	17.67	17.56	20.63

#### 7.8.4. PEAK POWER SPECTRAL DENSITY

## **LIMITS**

FCC §15.407 (a) (2)

IC RSS-210 A9.2 (2)

For the 5.47-5.725 GHz band, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 11 dBm.

## **TEST PROCEDURE**

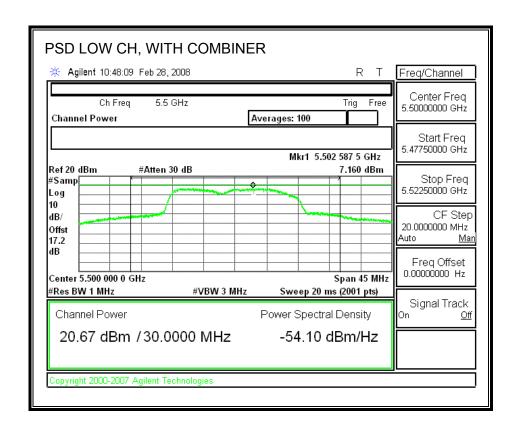
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002. PPSD method #2 was used.

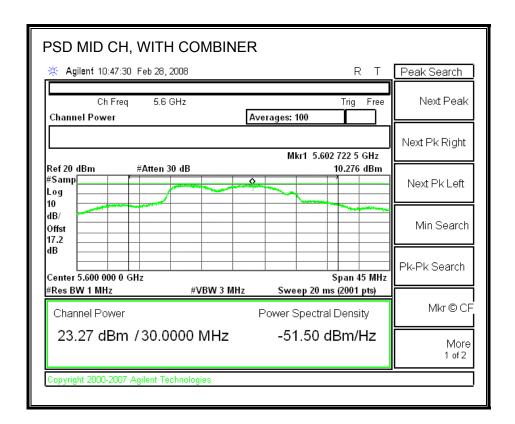
#### **RESULTS**

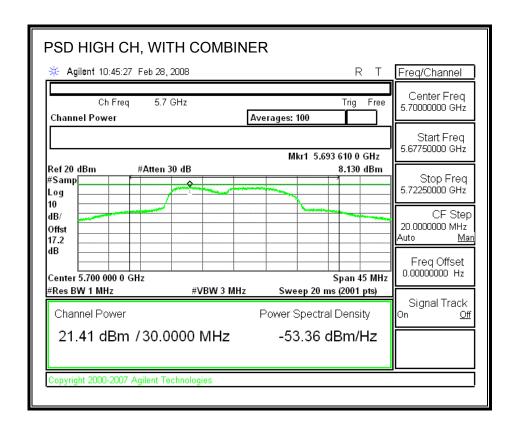
Channel	Frequency	PPSD With Combiner	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	5500	7.16	11	-3.84
Middle	5600	10.28	11	-0.72
High	5700	8.13	11	-2.87

This report shall not be reproduced except in full, without the written approval of CCS.

## POWER SPECTRAL DENSITY WITH COMBINER







#### 7.8.5. PEAK EXCURSION

## **LIMITS**

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

## **TEST PROCEDURE**

The transmitter outputs are connected to the spectrum analyzer via a combiner.

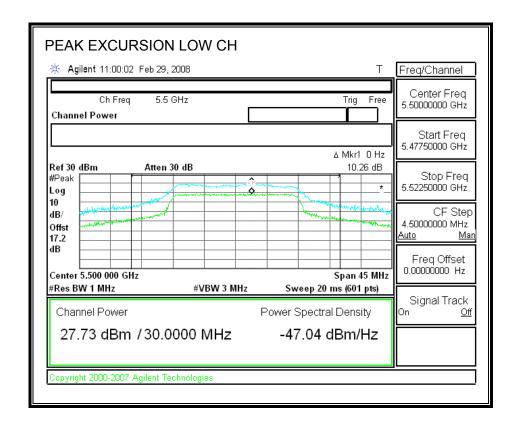
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

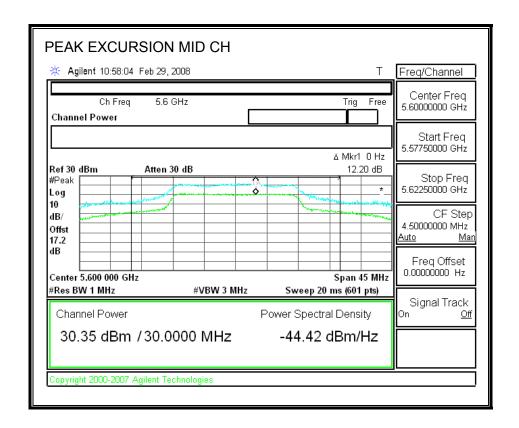
Since Method # 1 was used for peak power measurements, Method # 1 settings are used for the second PPSD trace.

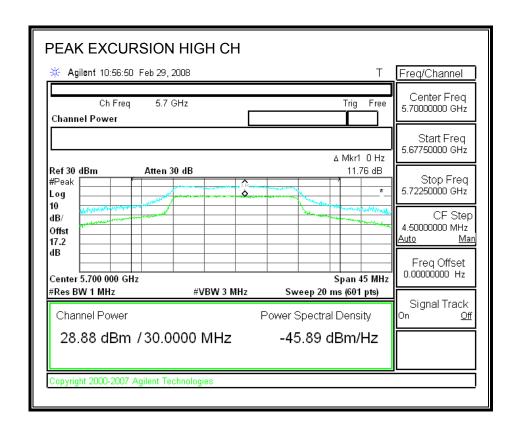
#### **RESULTS**

Channel	Frequency	Peak Excursion	Limit	Margin
	(MHz)	(dB)	(dB)	(dB)
Low	5500	10.26	13	-2.74
Middle	5600	12.20	13	-0.80
High	5700	11.76	13	-1.24

## PEAK EXCURSION







#### 7.8.6. CONDUCTED SPURIOUS EMISSIONS

## **LIMITS**

FCC §15.407 (b) (3)

IC RSS-210 A9.3 (3)

For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm / MHz.

#### **TEST PROCEDURE**

Conducted RF measurements of the transmitter output are made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

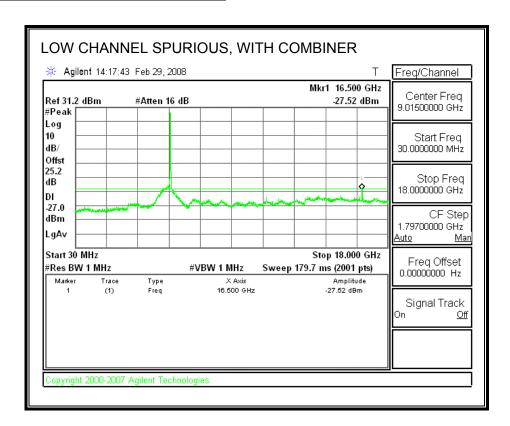
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1 MHz. The video bandwidth is set to 1 MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

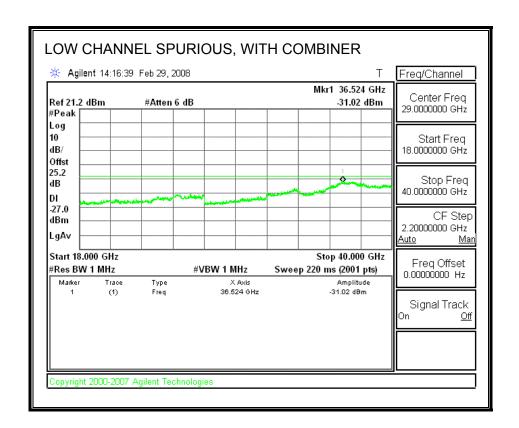
Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

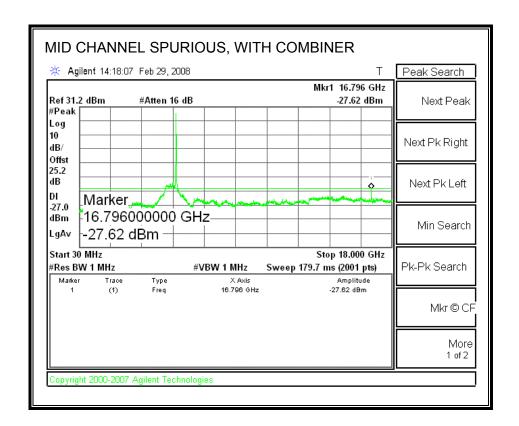
## **RESULTS**

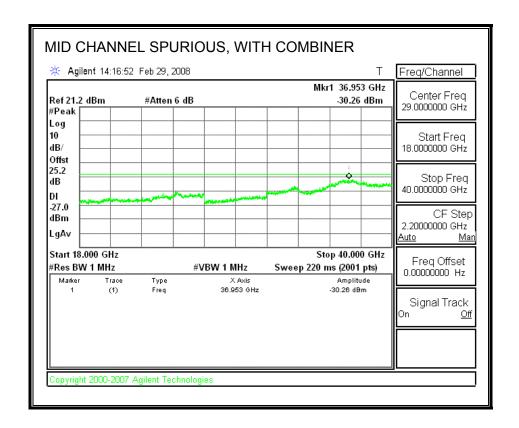
Page 210 of 399

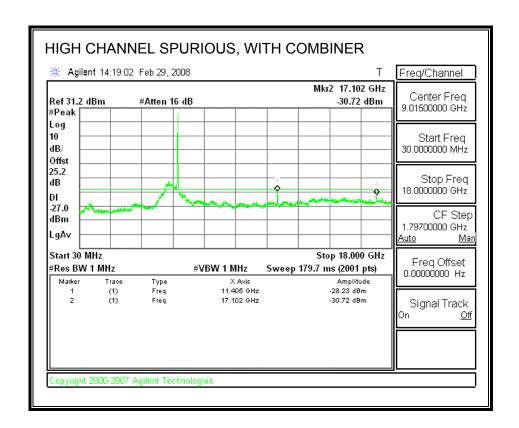
## SPURIOUS EMISSIONS WITH COMBINER

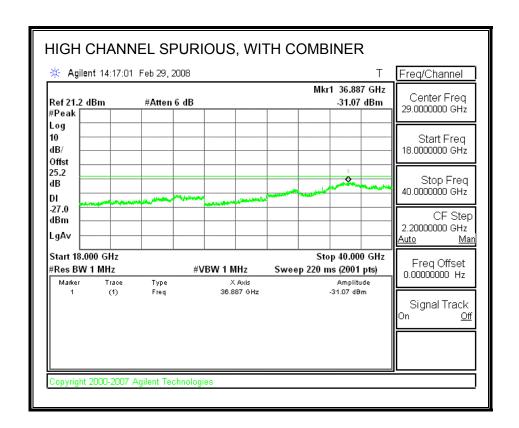












## 7.9. 802.11n HT40 MODE IN THE 5.6 GHz BAND

## 7.9.1. 26 dB and 99% BANDWIDTH

## **LIMITS**

None; for reporting purposes only.

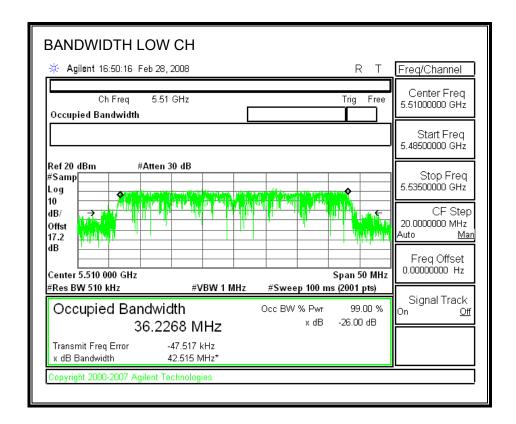
## **TEST PROCEDURE**

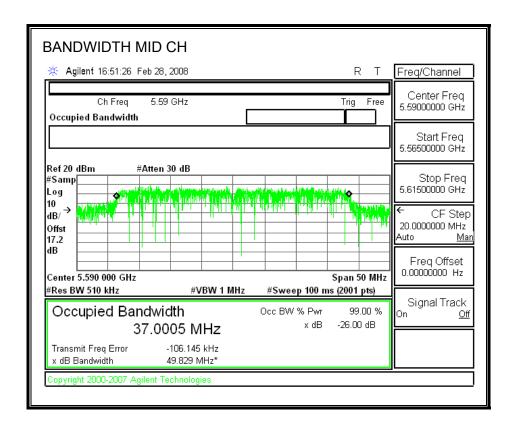
The transmitter outputs are connected to the spectrum analyzer via a combiner. The RBW is set to 1% to 3% of the measured bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal bandwidth function is utilized.

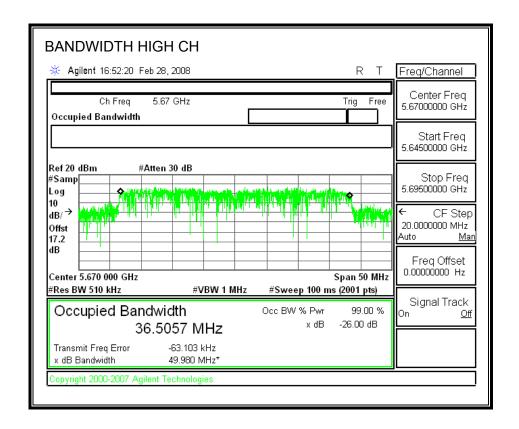
## **RESULTS**

Channel	Frequency	26 dB Bandwidth	99% Bandwidth
	(MHz)	(MHz)	(MHz)
Low	5510	42.515	36.2268
Middle	5590	49.829	37.0005
High	5670	49.980	36.5057

## 26 dB and 99% BANDWIDTH







#### 7.9.2. OUTPUT POWER

## **LIMITS**

FCC §15.407 (a) (2)

IC RSS-210 A9.2 (2)

For the 5.47-5.725 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

## **TEST PROCEDURE**

The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

## **RESULTS**

#### Limit

Channel	Frequency	Fixed	В	11 + 10 Log B	Antenna	Limit
		Limit		Limit	Gain	
	(MHz)	(dBm)	(MHz)	(dBm)	(dBi)	(dBm)
Low	5510	24.00	42.515	27.29	5.34	24.00
Mid	5590	24.00	49.829	27.97	5.34	24.00
High	5670	24.00	49.960	27.99	5.34	24.00

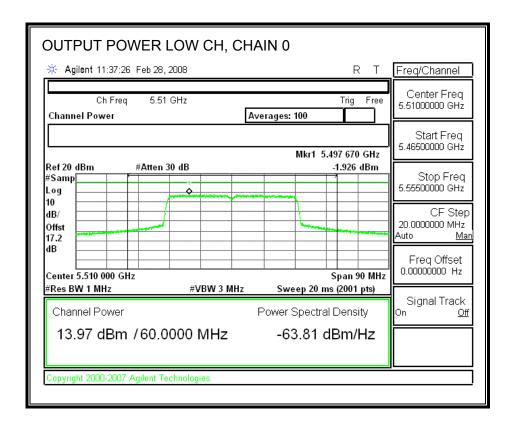
## **Individual Chain Results**

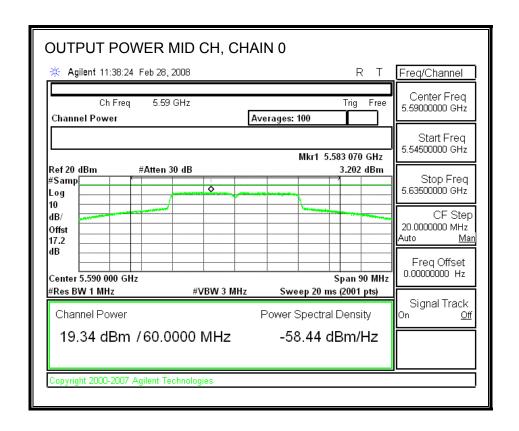
Channel	Frequency	Chain 0	Chain 1	Total	Limit	Margin
		Power	Power	Power		
	(MHz)	(dBm)	(dBm)	(dBm)	(dBm)	(dB)
Low	5510	13.97	14.42	17.21	24.00	-6.79
Mid	5590	19.34	19.50	22.43	24.00	-1.57
High	5670	18.34	18.46	21.41	24.00	-2.59

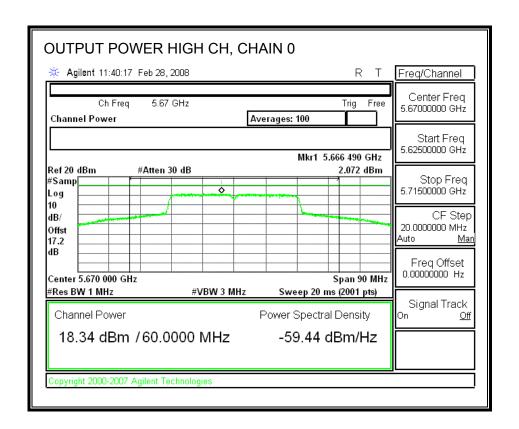
DATE: MARCH 10, 2008

IC: 4104A-AR5BXB92

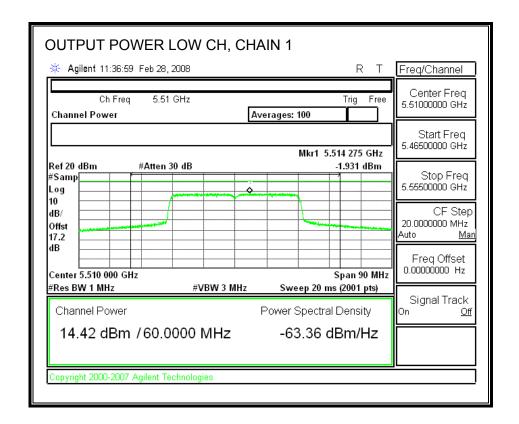
## **CHAIN 0 OUTPUT POWER**

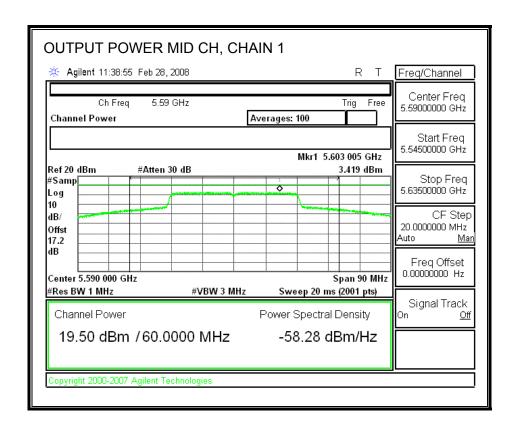


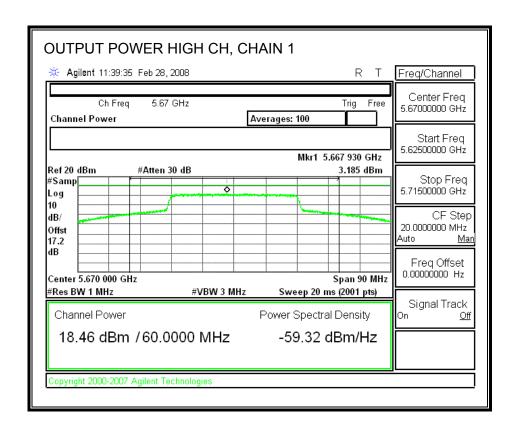




# **CHAIN 1 OUTPUT POWER**







REPORT NO: 08U11572-1 **DATE: MARCH 10, 2008** FCC ID: PPD-AR5BXB92 IC: 4104A-AR5BXB92

#### 7.9.3. AVERAGE POWER

# **LIMITS**

None; for reporting purposes only.

## **TEST PROCEDURE**

The transmitter output is connected to a power meter.

## **RESULTS**

The cable assembly insertion loss of 172 dB (including 16 dB pad and 1.2 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

Channel	Frequency	Chain 0	Chain 1	Total
		Power	Power	Power
	(MHz)	(dBm)	(dBm)	(dBm)
Low	5510	13.73	14.01	16.88
Middle	5590	19.27	19.38	22.34
High	5670	18.25	18.35	21.31

REPORT NO: 08U11572-1 DATE: MARCH 10, 2008 FCC ID: PPD-AR5BXB92 IC: 4104A-AR5BXB92

#### 7.9.4. PEAK POWER SPECTRAL DENSITY

#### **LIMITS**

FCC §15.407 (a) (2)

IC RSS-210 A9.2 (2)

For the 5.47-5.725 GHz band, the peak power spectral density shall not exceed 11 dBm in any 1 MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 11 dBm.

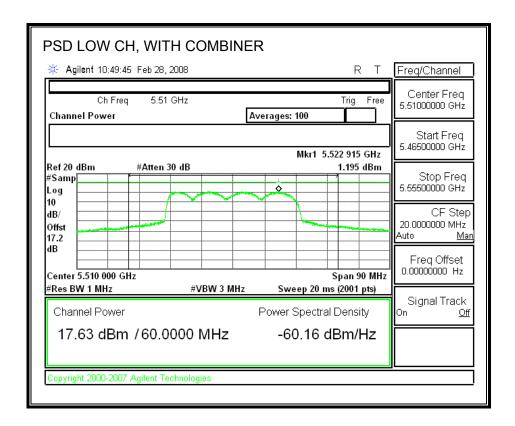
#### **TEST PROCEDURE**

The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002. PPSD method #2 was used.

#### RESULTS

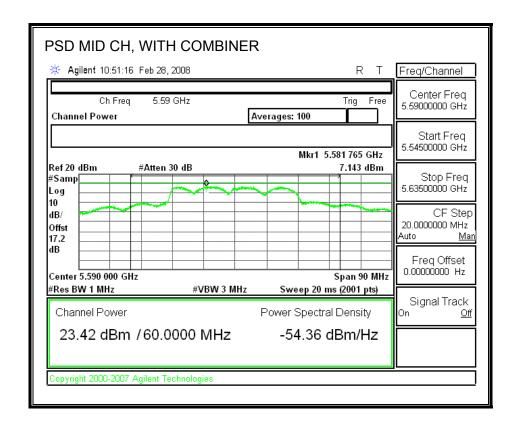
Channel	Frequency	PPSD With Combiner	Limit	Margin
	(MHz)	(dBm)	(dBm)	(dB)
Low	5510	1.20	11	-9.81
Middle	5590	7.14	11	-3.86
High	5670	6.46	11	-4.54

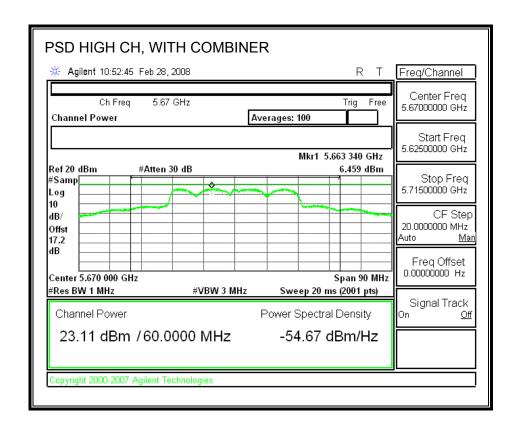
# POWER SPECTRAL DENSITY WITH COMBINER



DATE: MARCH 10, 2008

IC: 4104A-AR5BXB92





REPORT NO: 08U11572-1 DATE: MARCH 10, 2008 FCC ID: PPD-AR5BXB92 IC: 4104A-AR5BXB92

#### 7.9.5. PEAK EXCURSION

## **LIMITS**

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

# **TEST PROCEDURE**

The transmitter outputs are connected to the spectrum analyzer via a combiner.

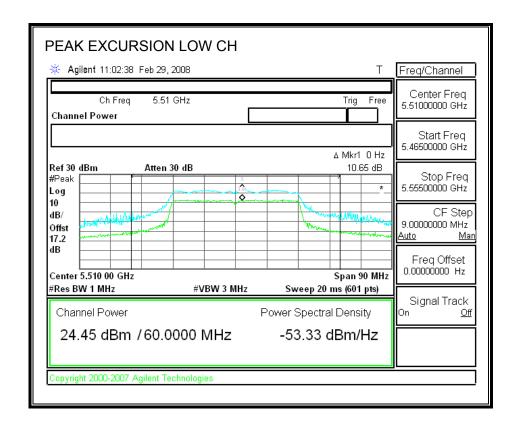
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

Since Method # 1 was used for peak power measurements, Method # 1 settings are used for the second PPSD trace.

#### **RESULTS**

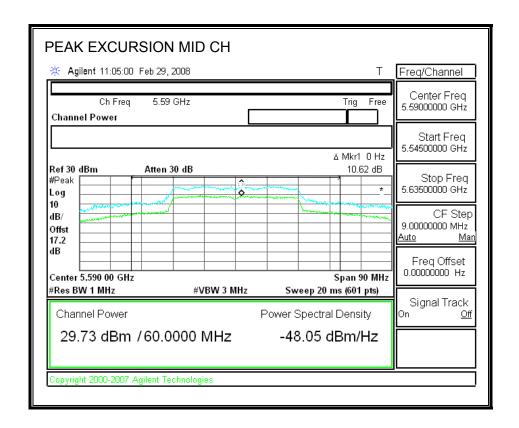
Channel	Frequency	Peak Excursion	Limit	Margin
	(MHz)	(dB)	(dB)	(dB)
Low	5510	10.65	13	-2.35
Middle	5590	10.62	13	-2.38
High	5670	11.44	13	-1.56

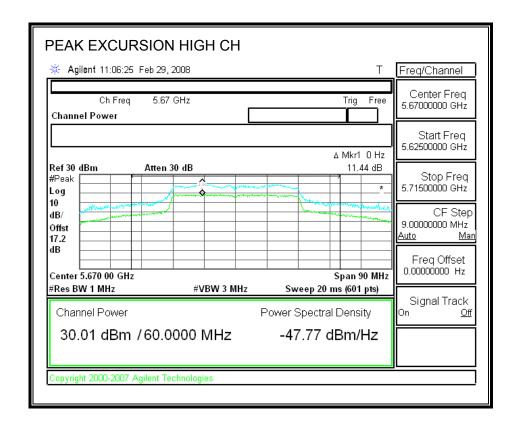
# **PEAK EXCURSION**



DATE: MARCH 10, 2008

IC: 4104A-AR5BXB92





REPORT NO: 08U11572-1 DATE: MARCH 10, 2008 FCC ID: PPD-AR5BXB92 IC: 4104A-AR5BXB92

#### 7.9.6. CONDUCTED SPURIOUS EMISSIONS

## **LIMITS**

FCC §15.407 (b) (3)

IC RSS-210 A9.3 (3)

For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm / MHz.

#### **TEST PROCEDURE**

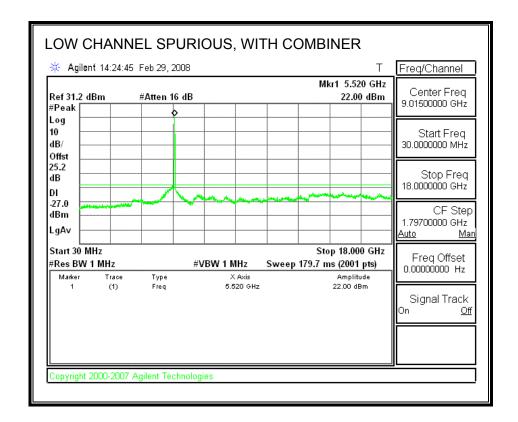
Conducted RF measurements of the transmitter output are made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

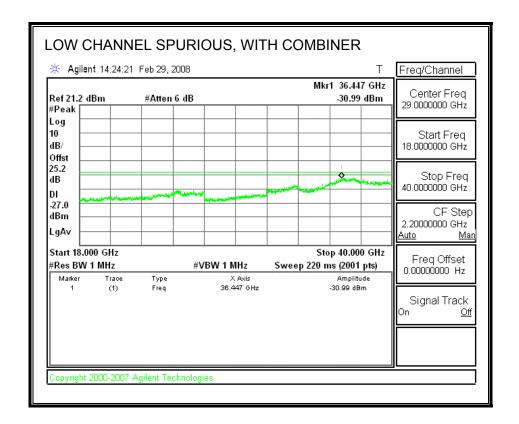
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1 MHz. The video bandwidth is set to 1 MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

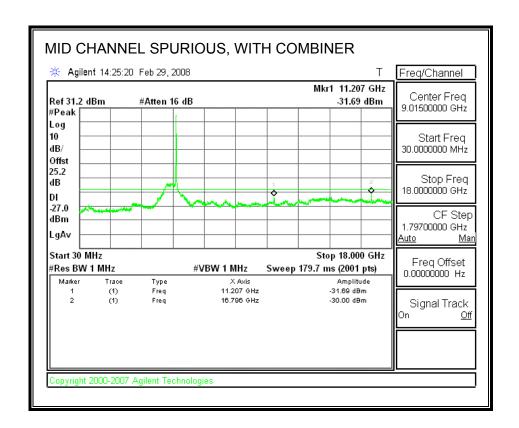
Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

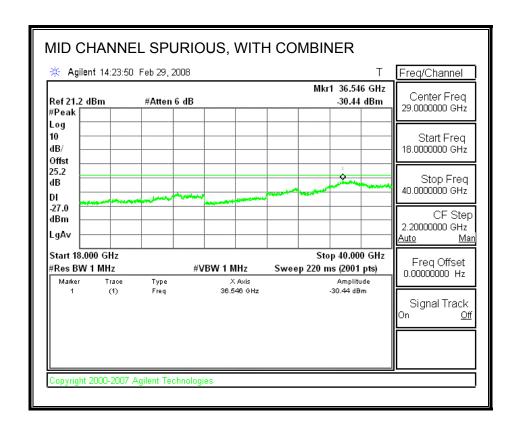
# **RESULTS**

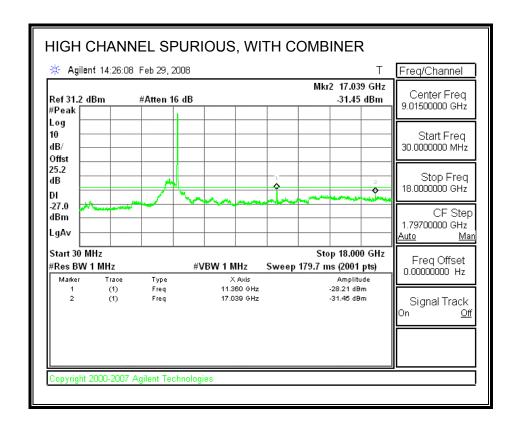
#### SPURIOUS EMISSIONS WITH COMBINER

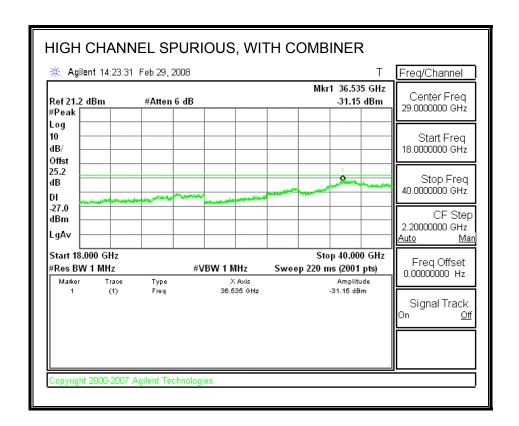












REPORT NO: 08U11572-1 DATE: MARCH 10, 2008 FCC ID: PPD-AR5BXB92 IC: 4104A-AR5BXB92

# 8. RADIATED TEST RESULTS

## 8.1. LIMITS AND PROCEDURE

#### **LIMITS**

FCC §15.205 and §15.209 IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

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

#### **TEST PROCEDURE**

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

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

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

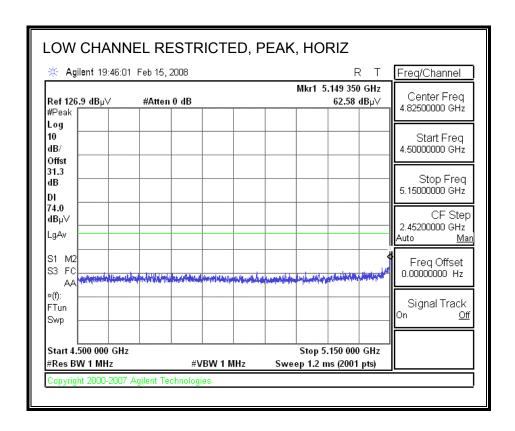
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

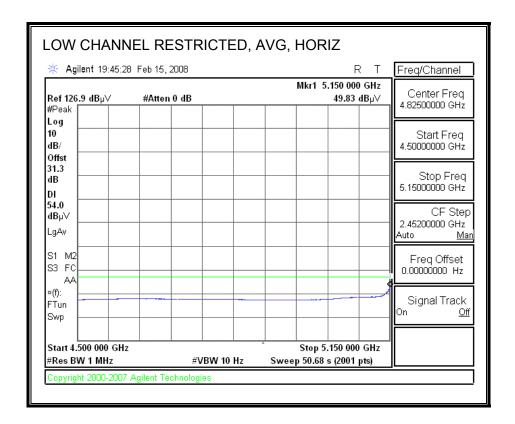
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

# 8.2. TRANSMITTER ABOVE 1 GHz

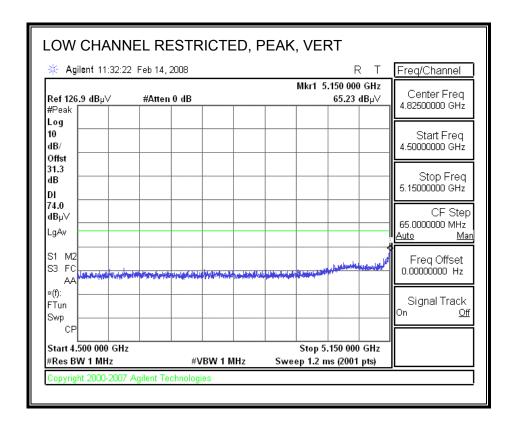
# 8.2.1. TRANSMITTER ABOVE 1 GHz FOR 802.11a MODE IN THE LOWER 5.2 GHz BAND

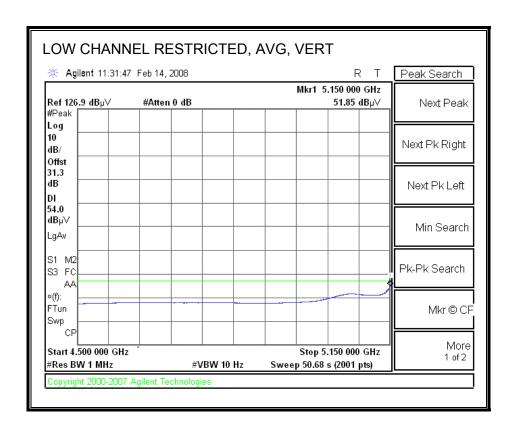
**FEM #1** 



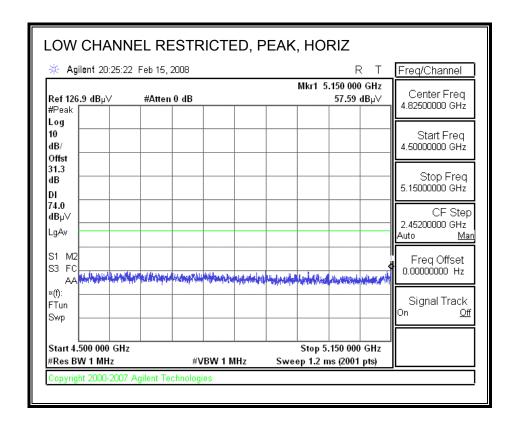


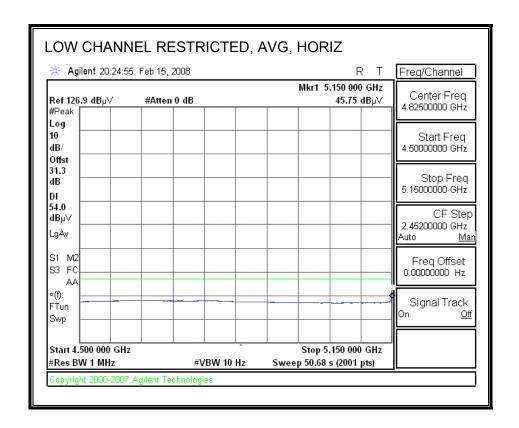
## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



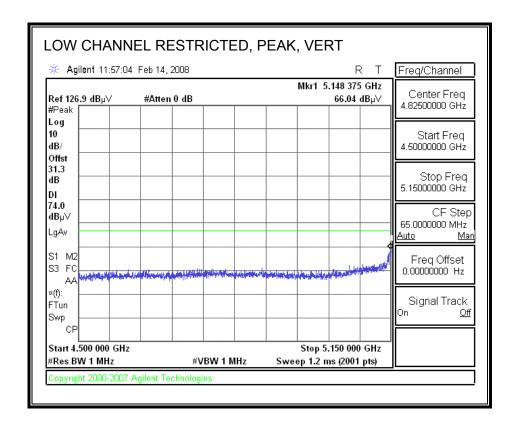


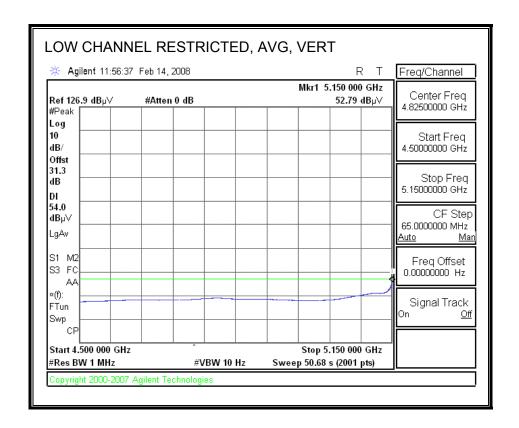
**FEM #2** 



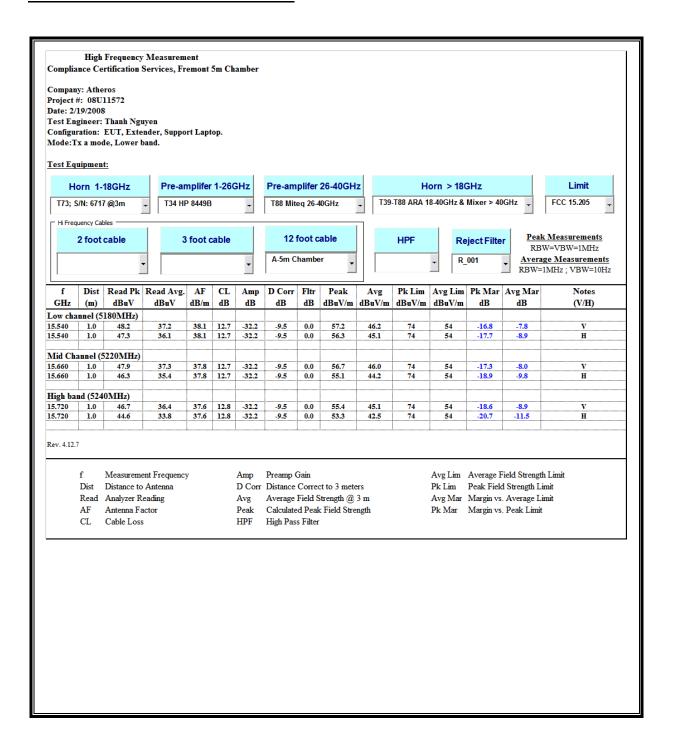


#### RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)





# HARMONICS AND SPURIOUS EMISSIONS

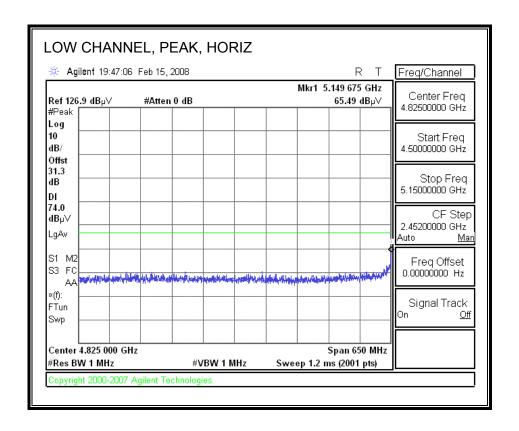


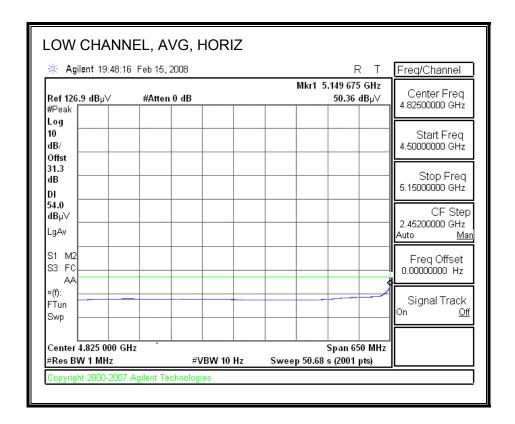
DATE: MARCH 10, 2008

IC: 4104A-AR5BXB92

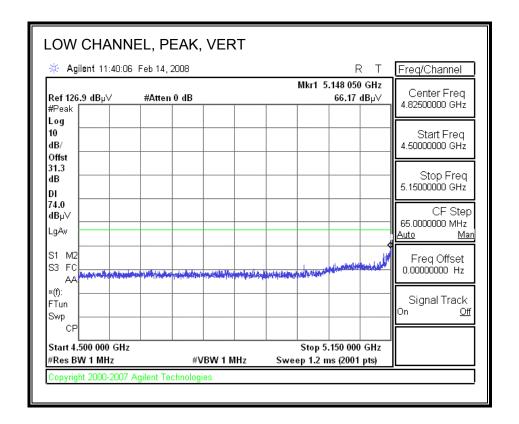
# 8.2.2. TRANSMITTER ABOVE 1 GHz FOR 802.11n HT20 MODE IN THE LOWER 5.2 GHz BAND

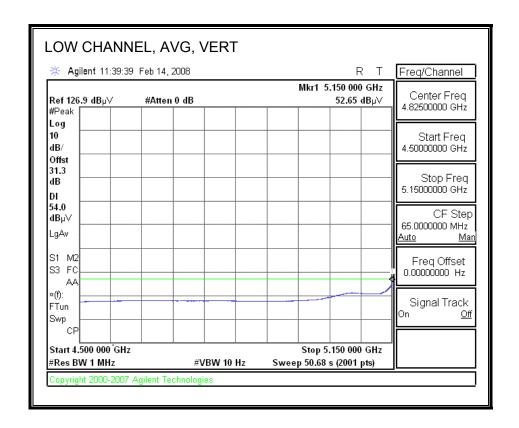
#### **FEM #1**



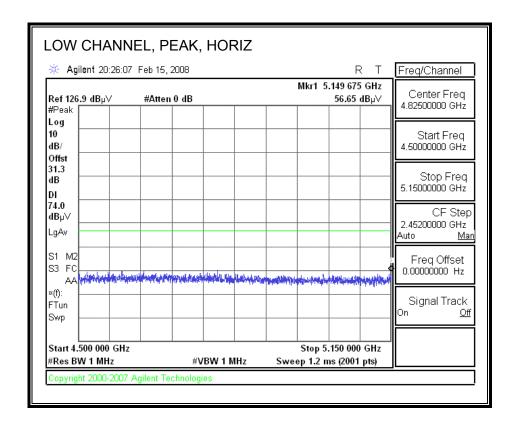


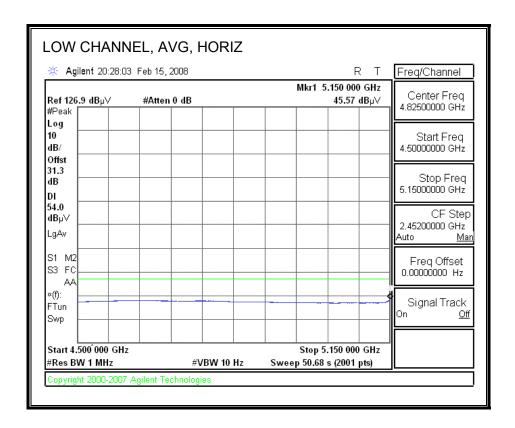
# RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

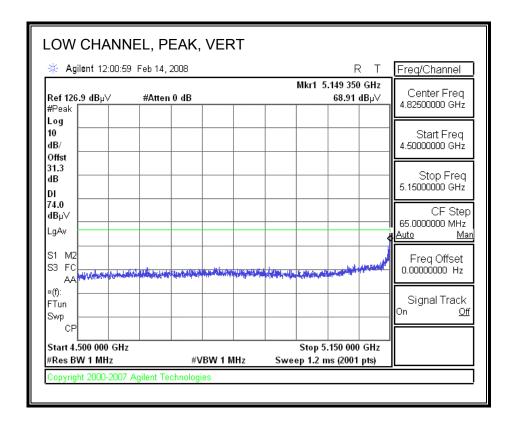


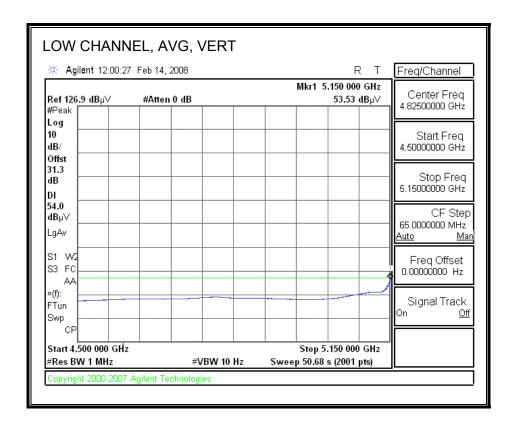


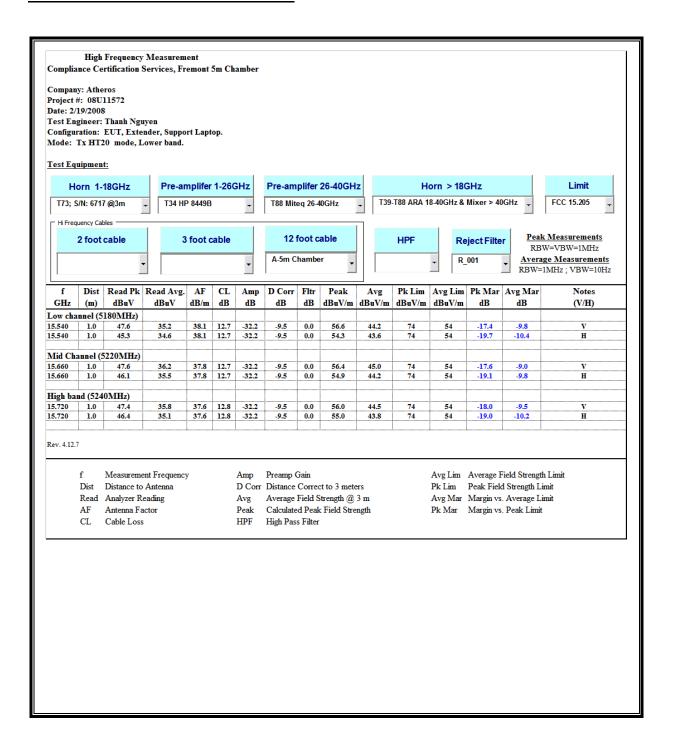
**FEM #2** 











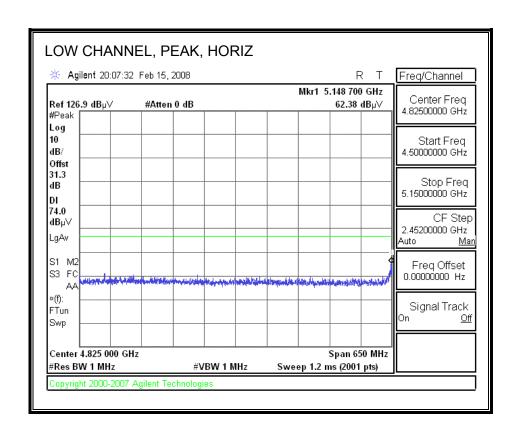
DATE: MARCH 10, 2008

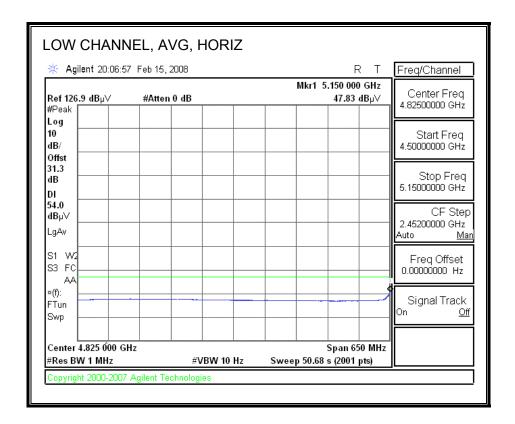
# 8.2.3. TRANSMITTER ABOVE 1 GHz FOR 802.11n HT40 MODE IN THE LOWER 5.2 GHz BAND

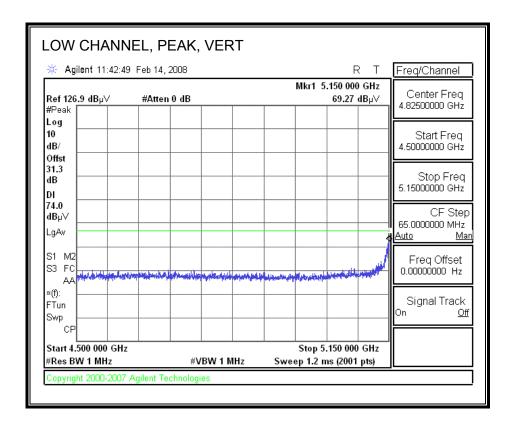
DATE: MARCH 10, 2008

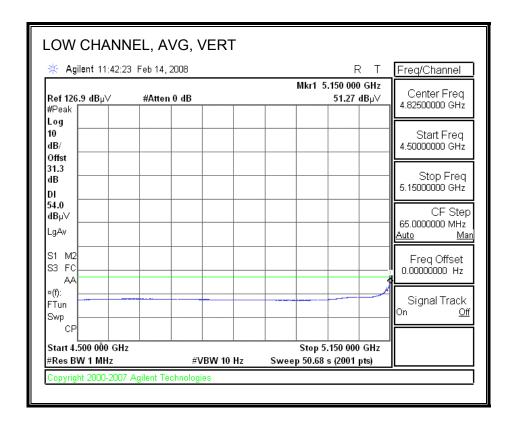
FEM #1

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

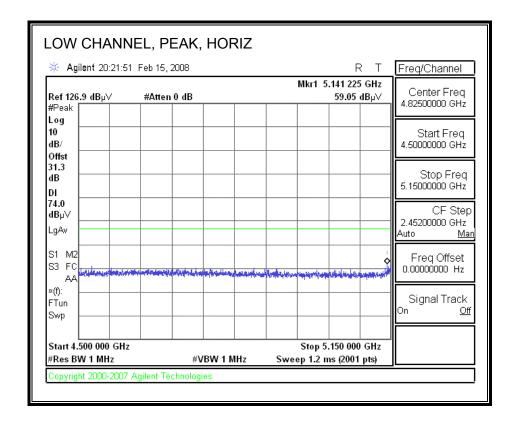


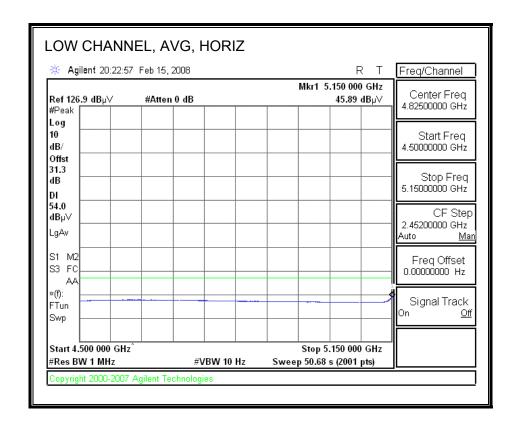


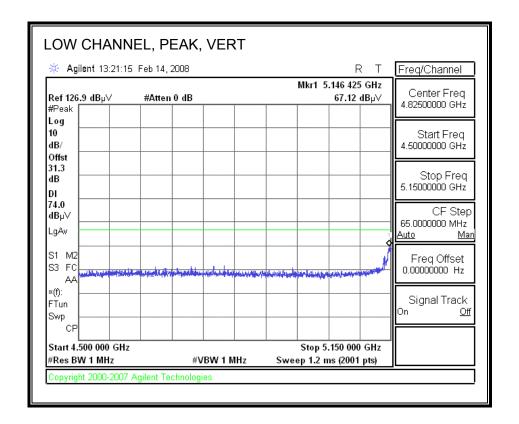


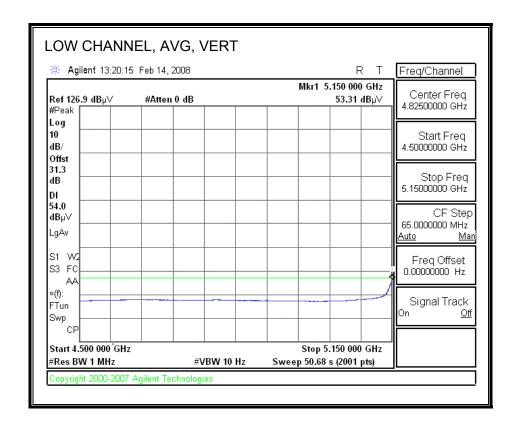


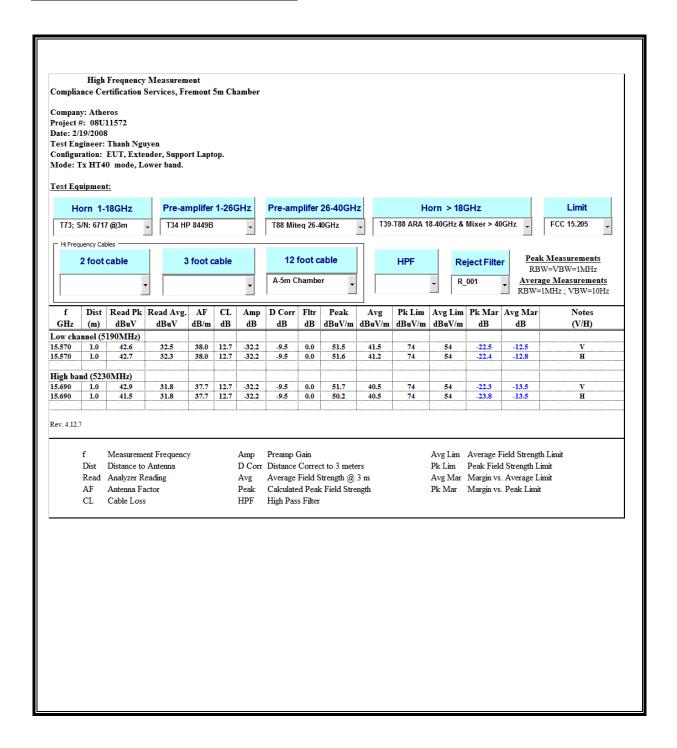
**FEM #2** 







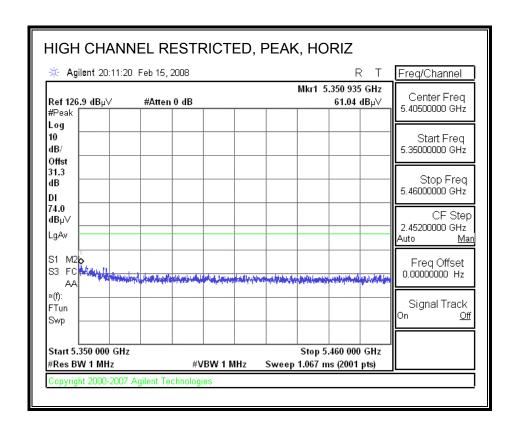


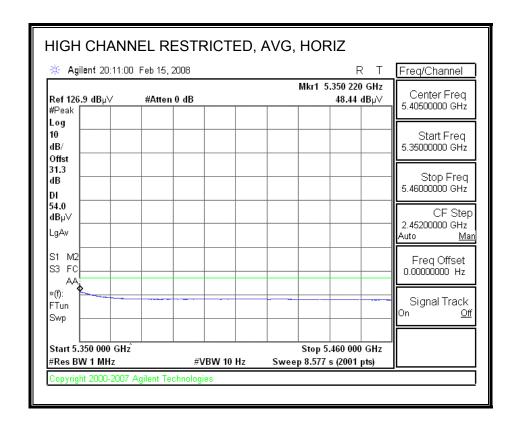


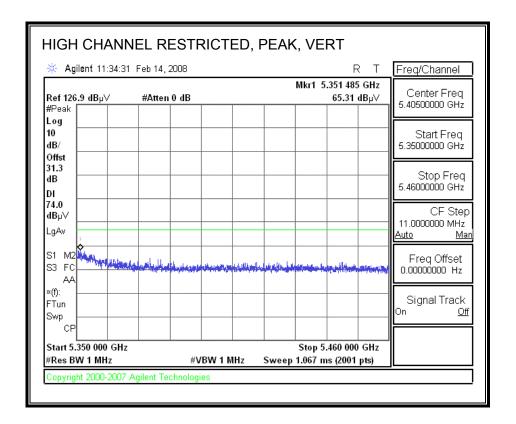
DATE: MARCH 10, 2008

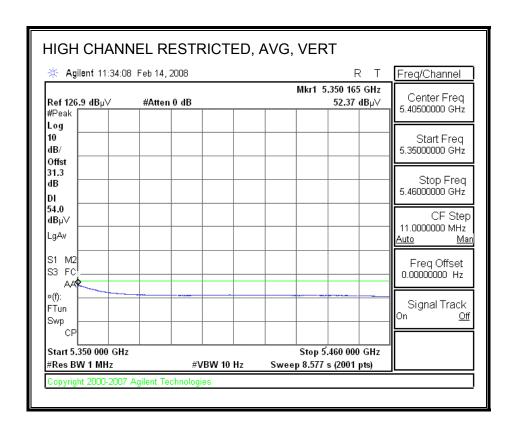
# 8.2.4. TRANSMITTER ABOVE 1 GHz FOR 802.11a MODE IN THE UPPER 5.2 GHz BAND

#### **FEM #1**



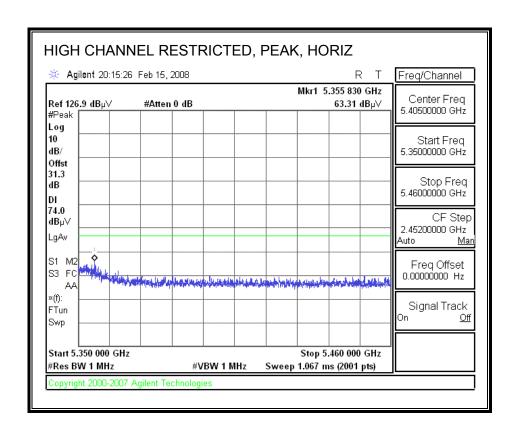


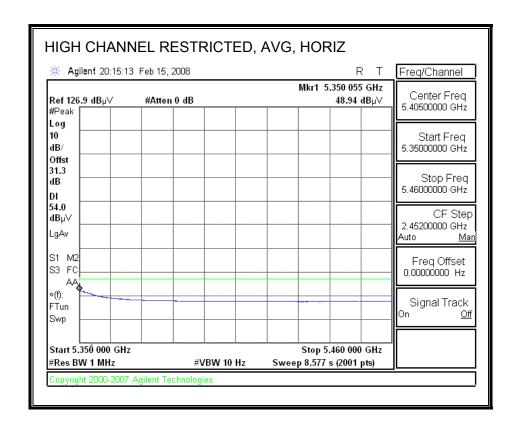


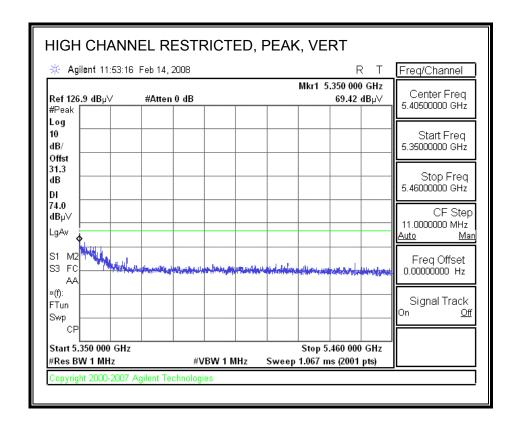


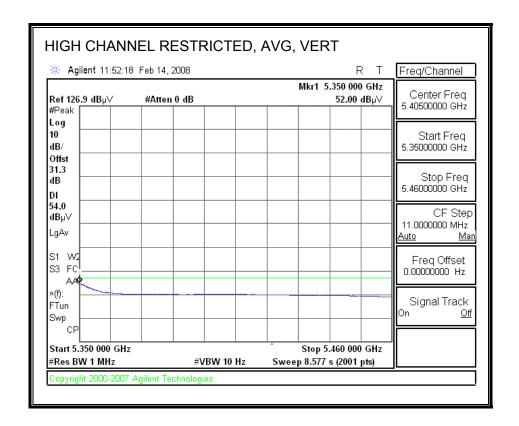
This report shall not be reproduced except in full, without the written approval of CCS.

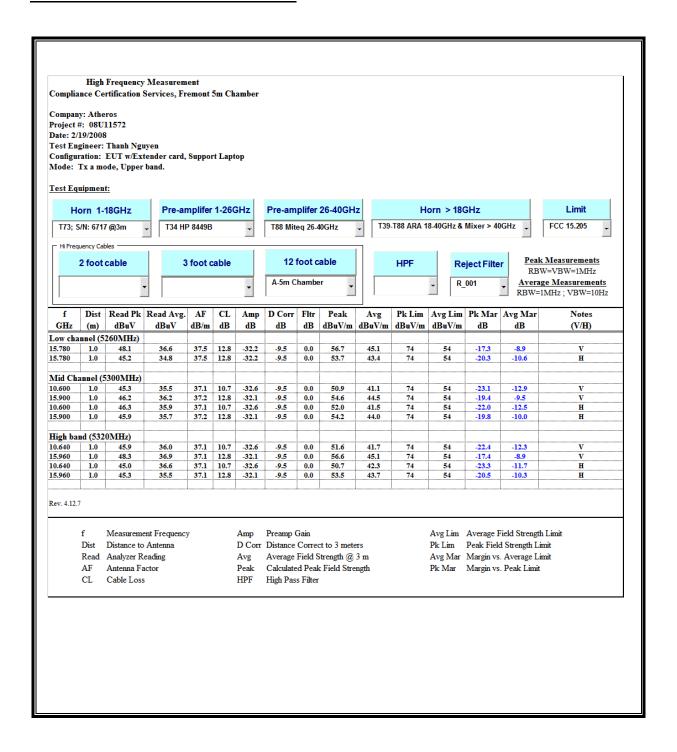
**FEM #2** 







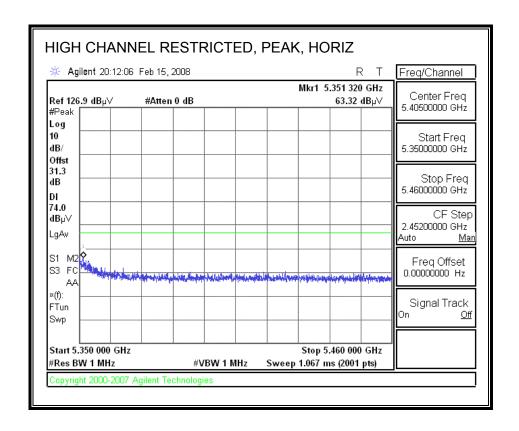


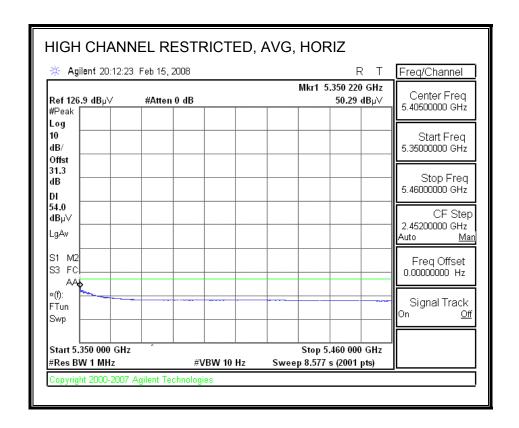


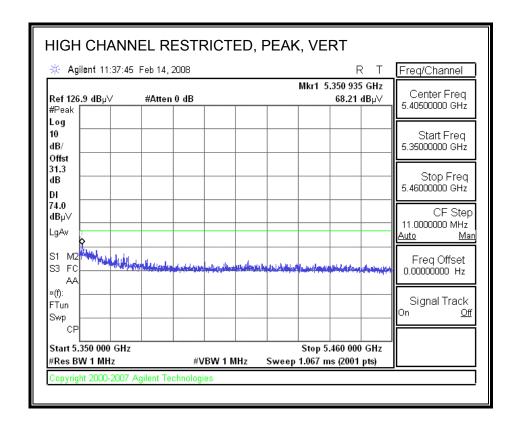
DATE: MARCH 10, 2008

# 8.2.5. TRANSMITTER ABOVE 1 GHz FOR 802.11n HT20 MODE IN THE UPPER 5.2 GHz BAND

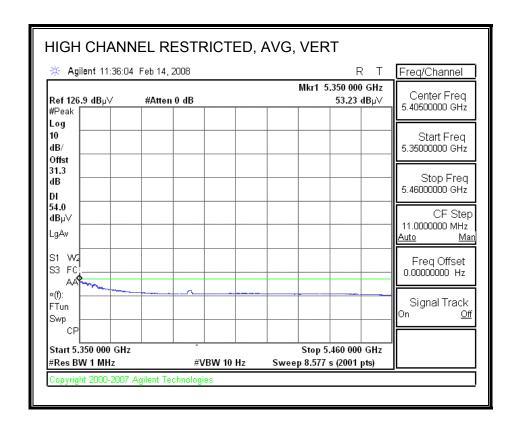
#### **FEM #1**



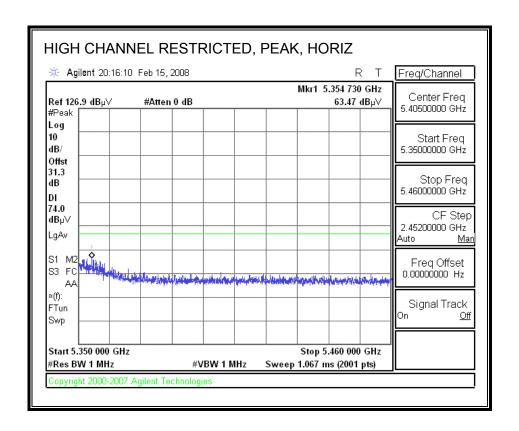


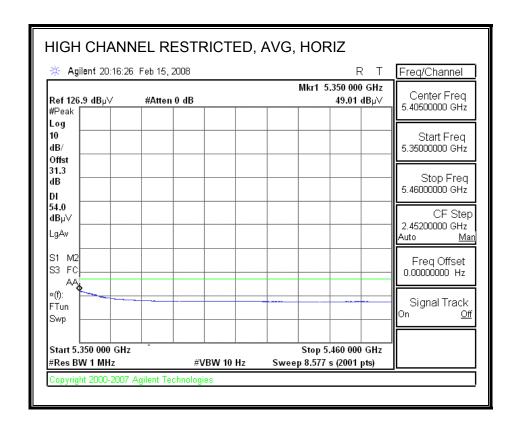


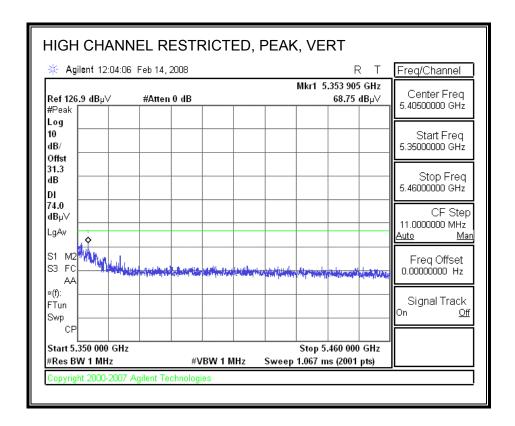
FAX: (510) 661-0888

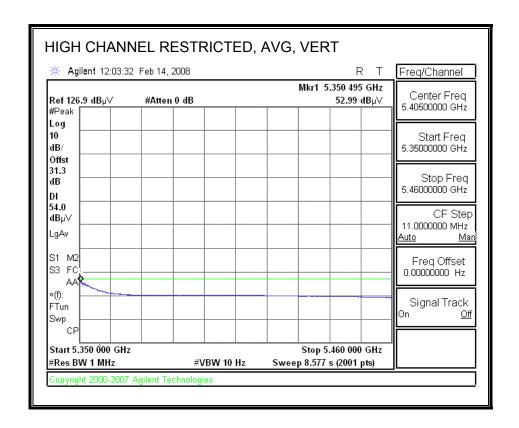


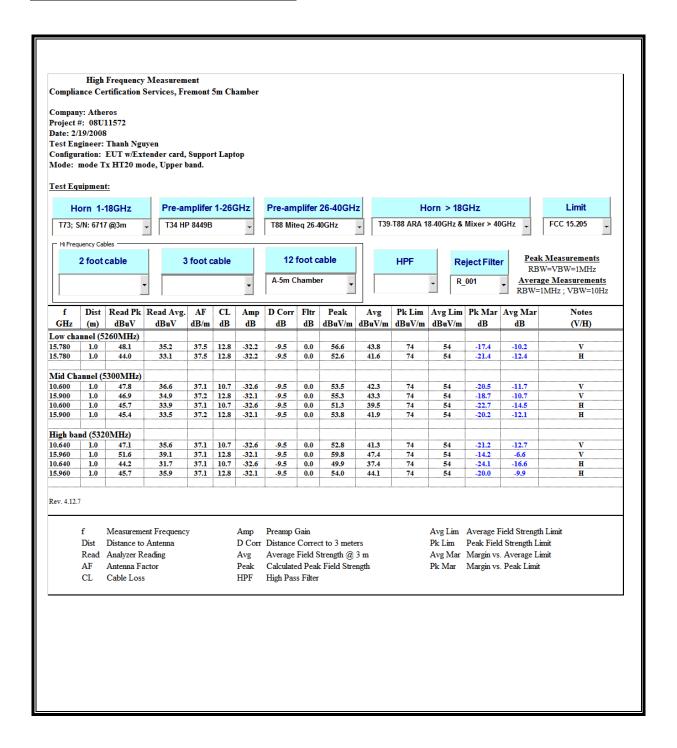
**FEM #2** 







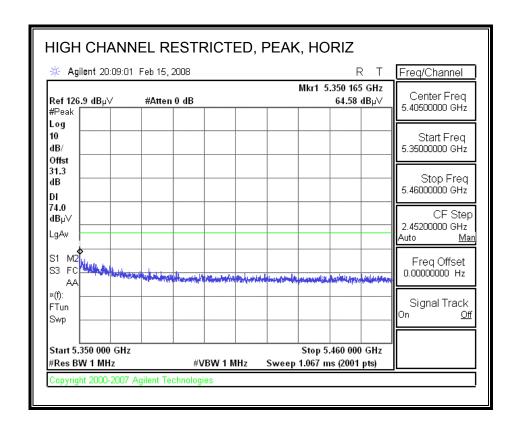


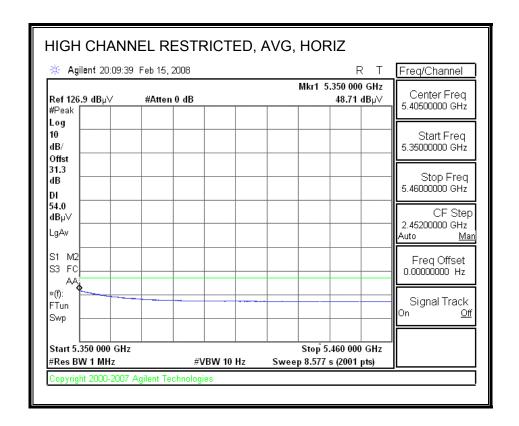


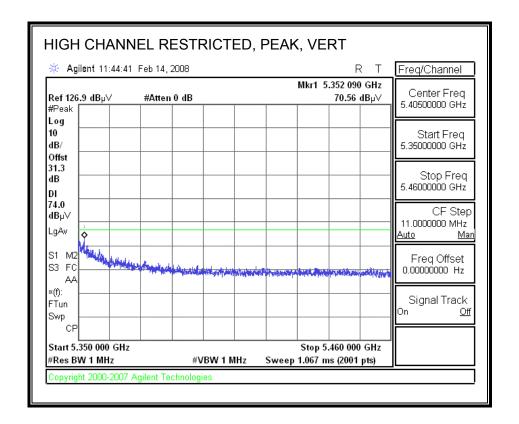
DATE: MARCH 10, 2008

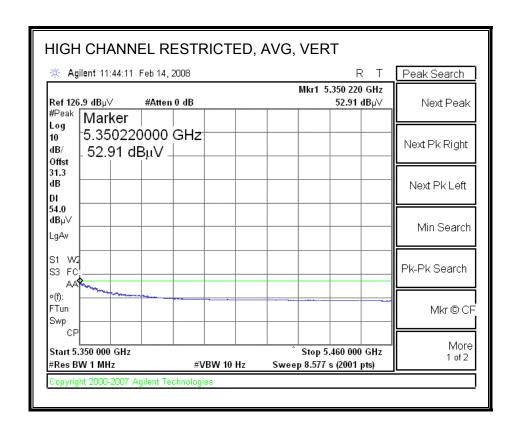
# 8.2.6. TRANSMITTER ABOVE 1 GHz FOR 802.11n HT40 MODE IN THE UPPER 5.2 GHz BAND

#### **FEM #1**

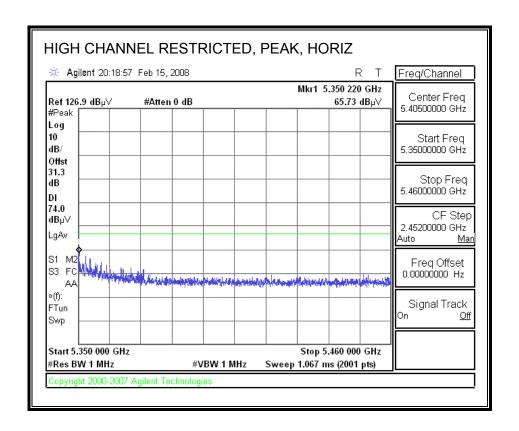


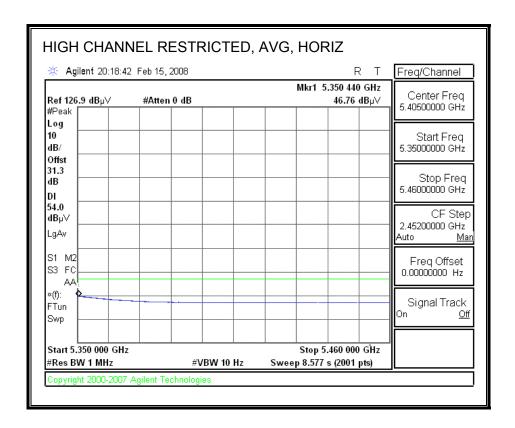


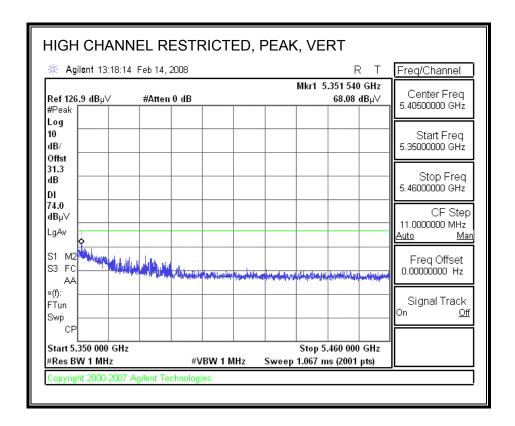


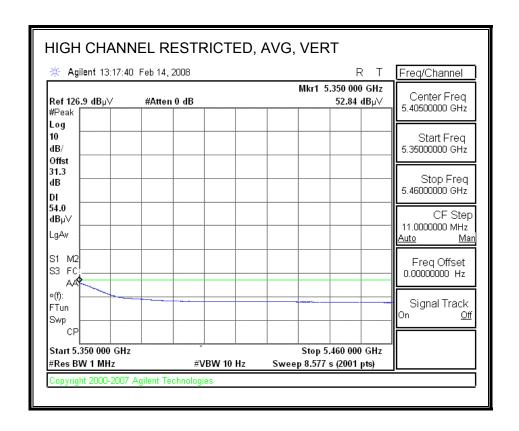


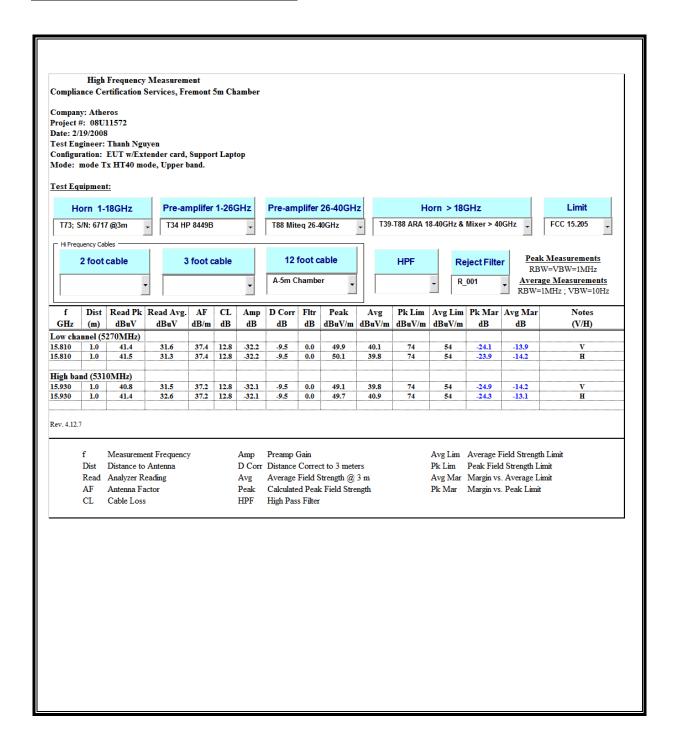
**FEM #2** 











DATE: MARCH 10, 2008

# 8.2.7. TRANSMITTER ABOVE 1 GHz FOR 802.11a MODE IN THE 5.6 GHz BAND

#### **FEM #1**

