



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5670MHz / (CH High)

Tested by: Sun Guo

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: May 31, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
6756.000	31.04	7.30	38.34	74.00	-35.66	V	peak
7740.000	31.53	9.14	40.67	74.00	-33.33	V	peak
8376.000	31.39	9.44	40.83	74.00	-33.17	V	peak
10260.000	30.29	12.79	43.08	74.00	-30.92	V	peak
11136.000	29.70	15.02	44.72	74.00	-29.28	V	peak
12948.000	29.14	17.78	46.92	74.00	-27.08	V	peak
6936.000	31.80	7.60	39.40	74.00	-34.60	H	Peak
7740.000	31.48	9.14	40.62	74.00	-33.38	H	Peak
8364.000	31.54	9.45	40.99	74.00	-33.01	H	Peak
10140.000	30.47	12.41	42.88	74.00	-31.12	H	peak
11016.000	29.81	15.07	44.88	74.00	-29.12	H	peak
11820.000	30.25	14.72	44.97	74.00	-29.03	H	peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5755MHz / (CH Low)

Tested by: Sun Guo

Ambient temperature: 24°C Relative humidity: 52% RH

Date: May 31, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7656.000	31.00	8.98	39.98	74.00	-34.02	V	peak
8376.000	31.37	9.44	40.81	74.00	-33.19	V	peak
11040.000	29.90	15.06	44.96	74.00	-29.04	V	peak
12828.000	28.96	17.38	46.34	74.00	-27.66	V	peak
14244.000	28.43	20.72	49.15	74.00	-24.85	V	peak
14904.000	28.40	21.10	49.50	74.00	-24.50	V	peak
7704.000	31.12	9.07	40.19	74.00	-33.81	H	Peak
8352.000	31.21	9.46	40.67	74.00	-33.33	H	Peak
10512.000	30.01	13.57	43.58	74.00	-30.42	H	Peak
11016.000	29.84	15.07	44.91	74.00	-29.09	H	peak
11856.000	30.12	14.70	44.82	74.00	-29.18	H	peak
12984.000	29.02	17.90	46.92	74.00	-27.08	H	peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11n HT 40 MHz / 5795MHz / (CH High)

Tested by: Sun Guo

Ambient temperature: 24°C

Relative humidity: 52% RH

Date: May 31, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.32	9.17	40.49	74.00	-33.51	V	peak
8364.000	31.30	9.45	40.75	74.00	-33.25	V	peak
10488.000	30.51	13.49	44.00	74.00	-30.00	V	peak
11028.000	29.66	15.07	44.73	74.00	-29.27	V	peak
11844.000	30.43	14.71	45.14	74.00	-28.86	V	peak
12960.000	29.01	17.82	46.83	74.00	-27.17	V	peak
8388.000	31.78	9.44	41.22	74.00	-32.78	H	Peak
10044.000	30.77	12.12	42.89	74.00	-31.11	H	Peak
11064.000	29.73	15.05	44.78	74.00	-29.22	H	Peak
12432.000	29.15	16.07	45.22	74.00	-28.78	H	peak
13620.000	27.98	19.58	47.56	74.00	-26.44	H	peak
15180.000	29.01	20.34	49.35	74.00	-24.65	H	peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Combine with antenna 1 and antenna 2

Test Mode: TX / IEEE 802.11ac 80 / 5210MHz

Tested by: Sun Guo

Ambient temperature: 24°C **Relative humidity:** 52% RH

Date: May 31, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7752.000	31.29	9.17	40.46	74.00	-33.54	V	peak
8436.000	31.58	9.41	40.99	74.00	-33.01	V	peak
9948.000	30.61	11.83	42.44	74.00	-31.56	V	peak
11124.000	29.83	15.03	44.86	74.00	-29.14	V	peak
12948.000	29.39	17.78	47.17	74.00	-26.83	V	peak
13776.000	27.52	19.99	47.51	74.00	-26.49	V	peak
8352.000	31.53	9.46	40.99	74.00	-33.01	H	Peak
9300.000	30.75	9.96	40.71	74.00	-33.29	H	Peak
10464.000	29.86	13.42	43.28	74.00	-30.72	H	Peak
11028.000	29.62	15.07	44.69	74.00	-29.31	H	peak
11844.000	30.28	14.71	44.99	74.00	-29.01	H	peak
12984.000	29.04	17.90	46.94	74.00	-27.06	H	peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11ac 80 / 5290MHz

Tested by: Sun Guo

Ambient temperature: 24°C Relative humidity: 52% RH

Date: May 31, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7740.000	31.55	9.14	40.69	74.00	-33.31	V	peak
8340.000	31.50	9.46	40.96	74.00	-33.04	V	peak
10044.000	30.67	12.12	42.79	74.00	-31.21	V	peak
10860.000	29.83	14.65	44.48	74.00	-29.52	V	peak
11844.000	30.21	14.71	44.92	74.00	-29.08	V	peak
12960.000	29.12	17.82	46.94	74.00	-27.06	V	peak
7764.000	31.39	9.19	40.58	74.00	-33.42	H	Peak
8496.000	31.44	9.38	40.82	74.00	-33.18	H	Peak
10248.000	30.54	12.75	43.29	74.00	-30.71	H	Peak
10992.000	29.78	15.06	44.84	74.00	-29.16	H	peak
12444.000	29.30	16.11	45.41	74.00	-28.59	H	peak
12960.000	29.64	17.82	47.46	74.00	-26.54	H	peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11ac 80 / 5530MHz /(CH Low)

Tested by: Sun Guo

Ambient temperature: 24°C Relative humidity: 52% RH

Date: May 31, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
8352.000	31.44	9.46	40.90	74.00	-33.10	V	peak
9816.000	30.16	11.45	41.61	74.00	-32.39	V	peak
10476.000	29.75	13.46	43.21	74.00	-30.79	V	peak
11256.000	29.99	14.97	44.96	74.00	-29.04	V	peak
12984.000	29.26	17.90	47.16	74.00	-26.84	V	peak
14016.000	27.63	20.59	48.22	74.00	-25.78	V	peak
6912.000	31.71	7.56	39.27	74.00	-34.73	H	Peak
7752.000	31.20	9.17	40.37	74.00	-33.63	H	Peak
8352.000	31.27	9.46	40.73	74.00	-33.27	H	Peak
10332.000	30.30	13.01	43.31	74.00	-30.69	H	peak
11028.000	29.65	15.07	44.72	74.00	-29.28	H	peak
11832.000	30.31	14.71	45.02	74.00	-28.98	H	peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11ac 80 / 5610MHz /(CH High)

Tested by: Sun Guo

Ambient temperature: 24°C Relative humidity: 52% RH

Date: May 31, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7776.000	31.17	9.21	40.38	74.00	-33.62	V	peak
8352.000	31.39	9.46	40.85	74.00	-33.15	V	peak
10296.000	30.14	12.90	43.04	74.00	-30.96	V	peak
11136.000	29.90	15.02	44.92	74.00	-29.08	V	peak
11844.000	30.65	14.71	45.36	74.00	-28.64	V	peak
12984.000	29.08	17.90	46.98	74.00	-27.02	V	peak
7716.000	31.05	9.10	40.15	74.00	-33.85	H	Peak
8376.000	31.26	9.44	40.70	74.00	-33.30	H	Peak
10872.000	30.13	14.68	44.81	74.00	-29.19	H	Peak
11832.000	30.68	14.71	45.39	74.00	-28.61	H	peak
12612.000	29.07	16.67	45.74	74.00	-28.26	H	peak
12972.000	29.20	17.86	47.06	74.00	-26.94	H	peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Test Mode: TX / IEEE 802.11ac 80 / 5775MHz

Tested by: Sun Guo

Ambient temperature: 24°C Relative humidity: 52% RH

Date: May 31, 2015

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
7764.000	31.03	9.19	40.22	74.00	-33.78	V	peak
8352.000	31.23	9.46	40.69	74.00	-33.31	V	peak
10320.000	30.07	12.97	43.04	74.00	-30.96	V	peak
11124.000	29.63	15.03	44.66	74.00	-29.34	V	peak
12168.000	29.80	15.20	45.00	74.00	-29.00	V	peak
12996.000	29.29	17.94	47.23	74.00	-26.77	V	peak
7740.000	31.20	9.14	40.34	74.00	-33.66	H	Peak
8352.000	31.66	9.46	41.12	74.00	-32.88	H	Peak
9600.000	30.42	10.83	41.25	74.00	-32.75	H	Peak
10488.000	30.16	13.49	43.65	74.00	-30.35	H	peak
11148.000	29.52	15.01	44.53	74.00	-29.47	H	peak
12996.000	28.81	17.94	46.75	74.00	-27.25	H	peak

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



6.7 CONDUCTED UNDESIRABLE EMISSION

6.7.1 LIMIT

According to 15.407(b) ,

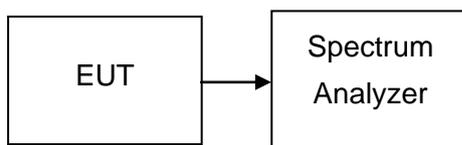
- (1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- (2) For transmitters operating in the 5.725–5.850 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of –17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of –27 dBm/MHz.
- (3) The provisions of §15.205 apply to intentional radiators operating under this section.

6.7.2 MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	E4446A	US44300399	02/28/2015	02/27/2016

Remark: Each piece of equipment is scheduled for calibration once a year.

6.7.3 TEST CONFIGURATION



6.7.4 TEST PROCEDURE

Conducted RF measurements of the transmitter output were 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.

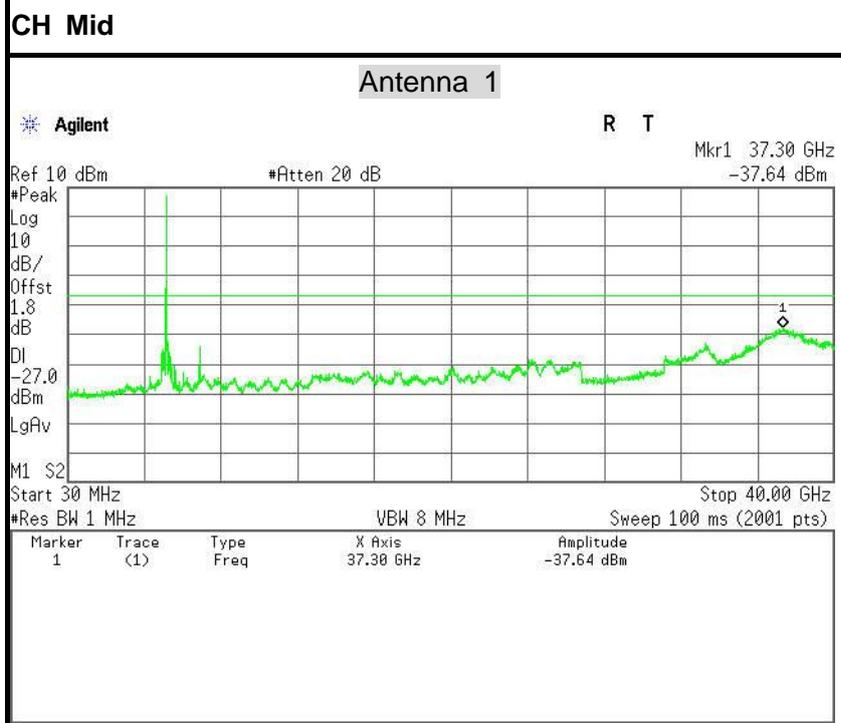
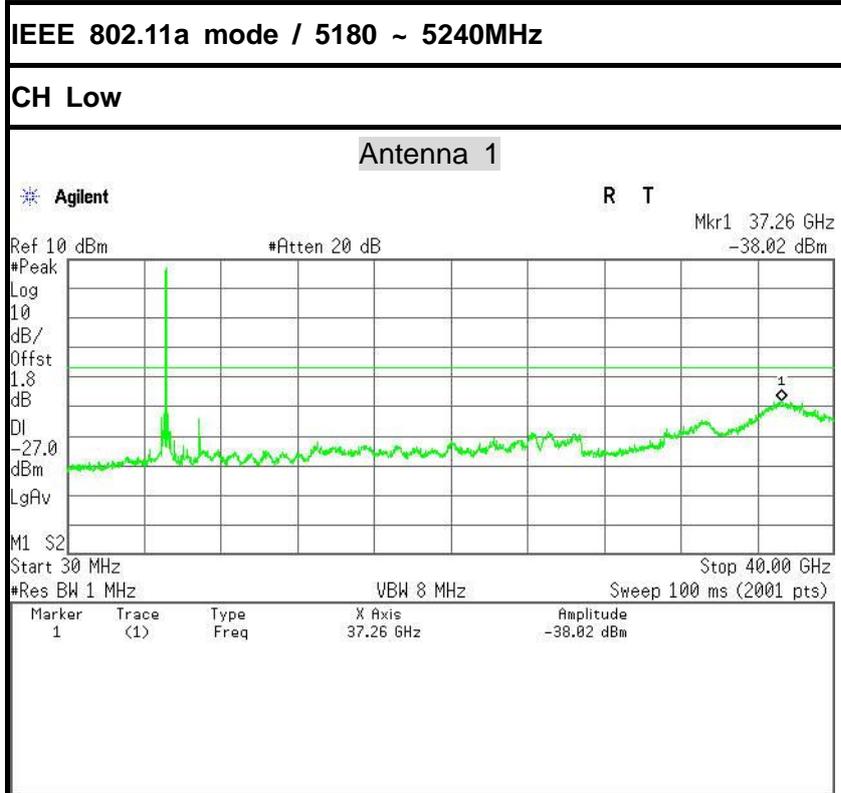
Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

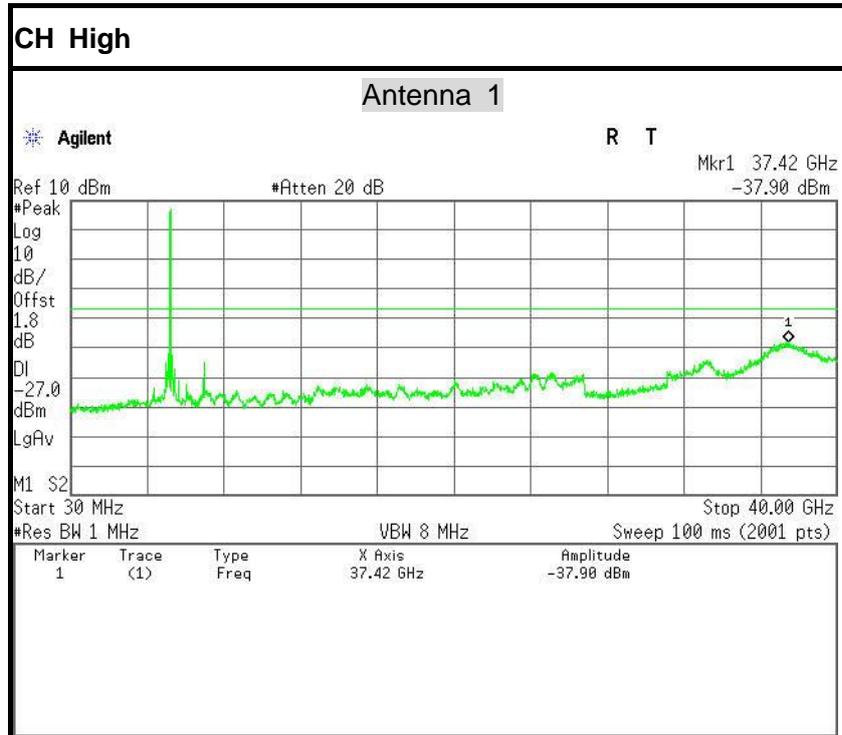
6.7.5 TEST RESULTS

No non-compliance noted

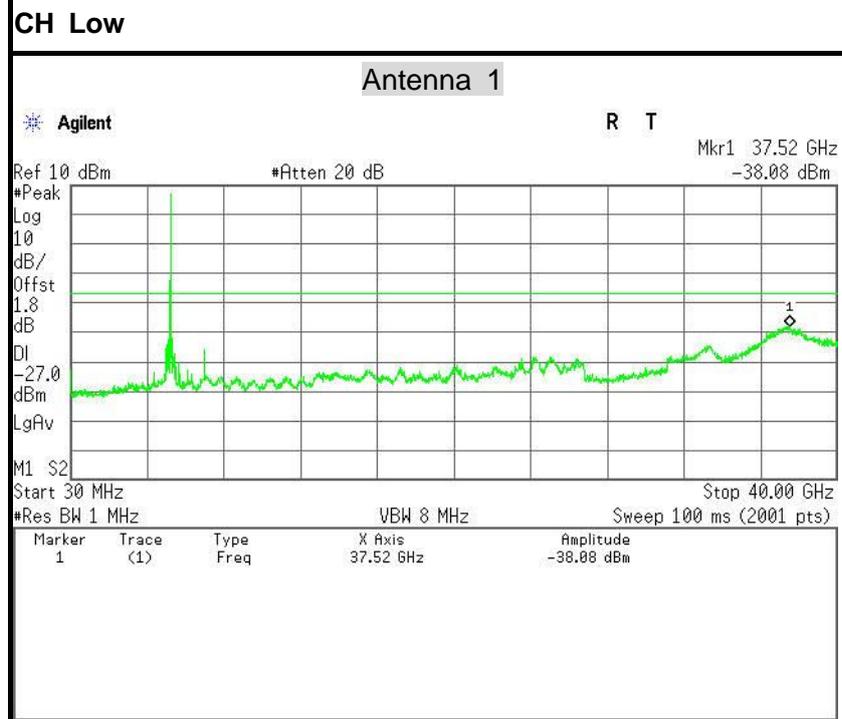


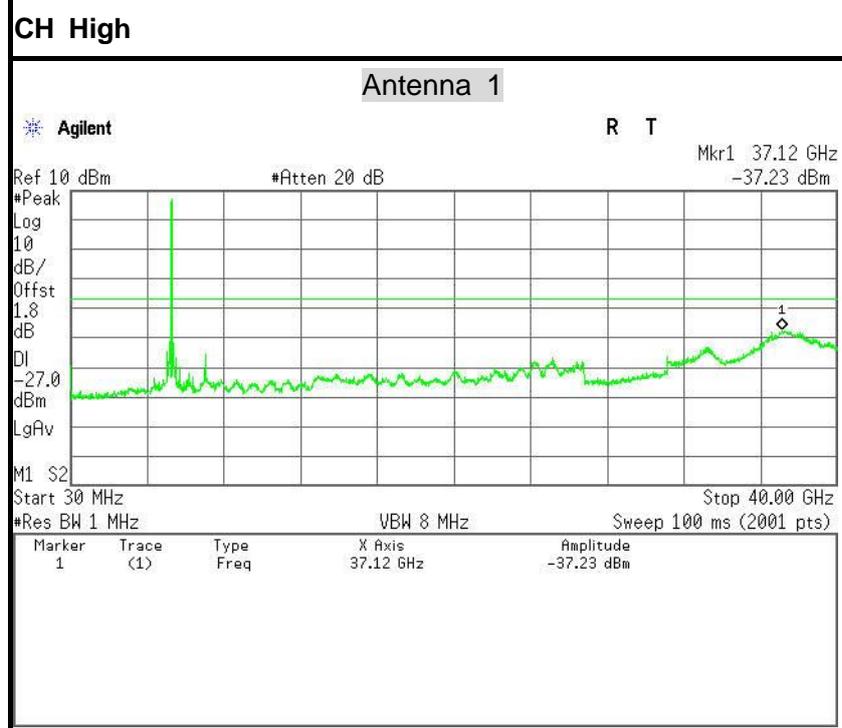
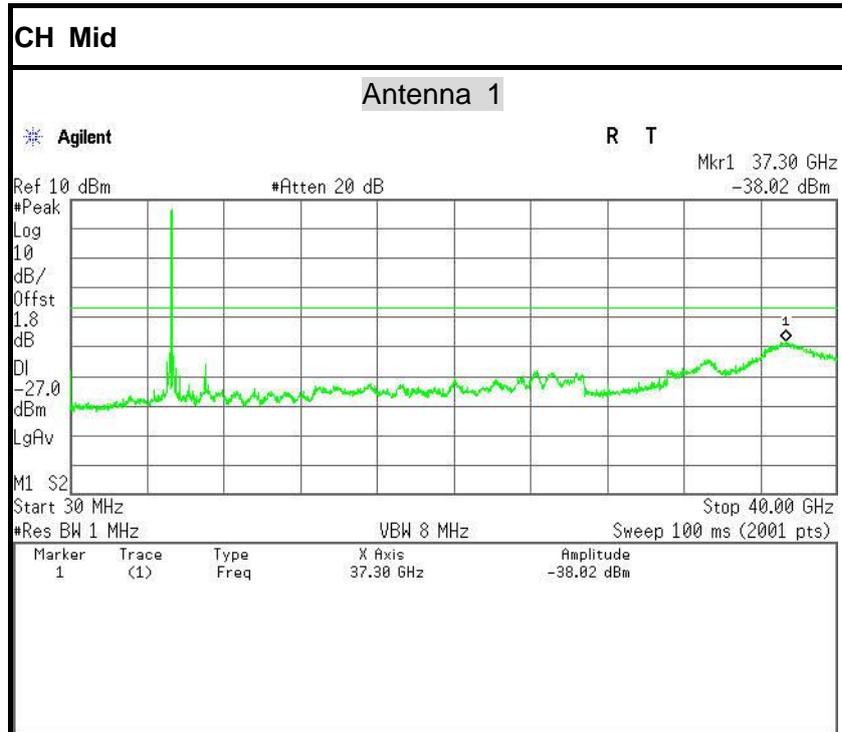
Test Plot





IEEE 802.11a mode / 5260~ 5320MHz

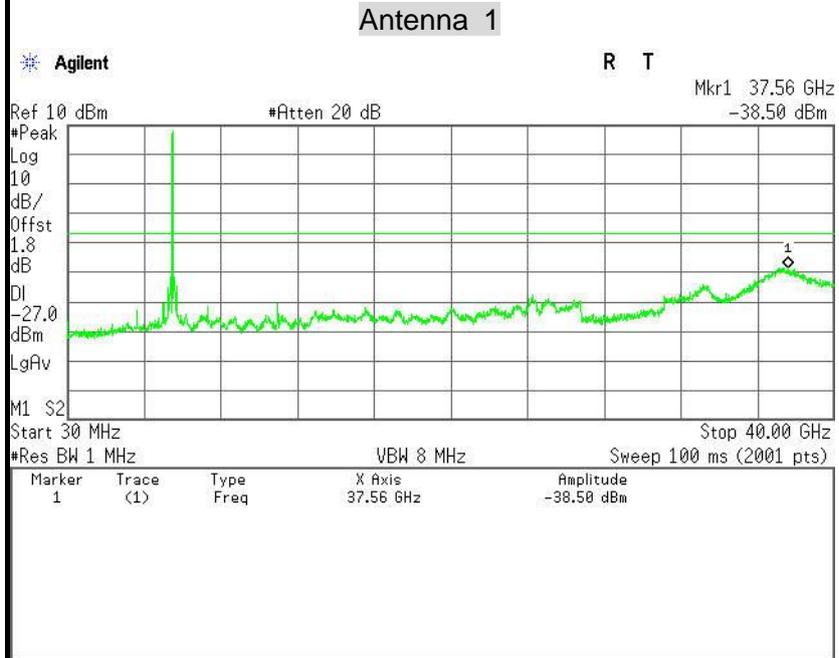




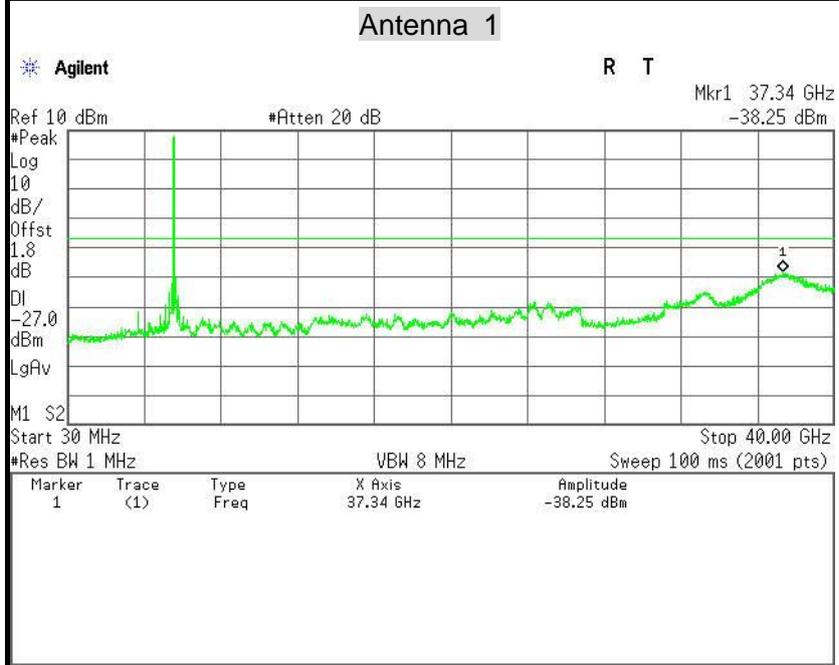


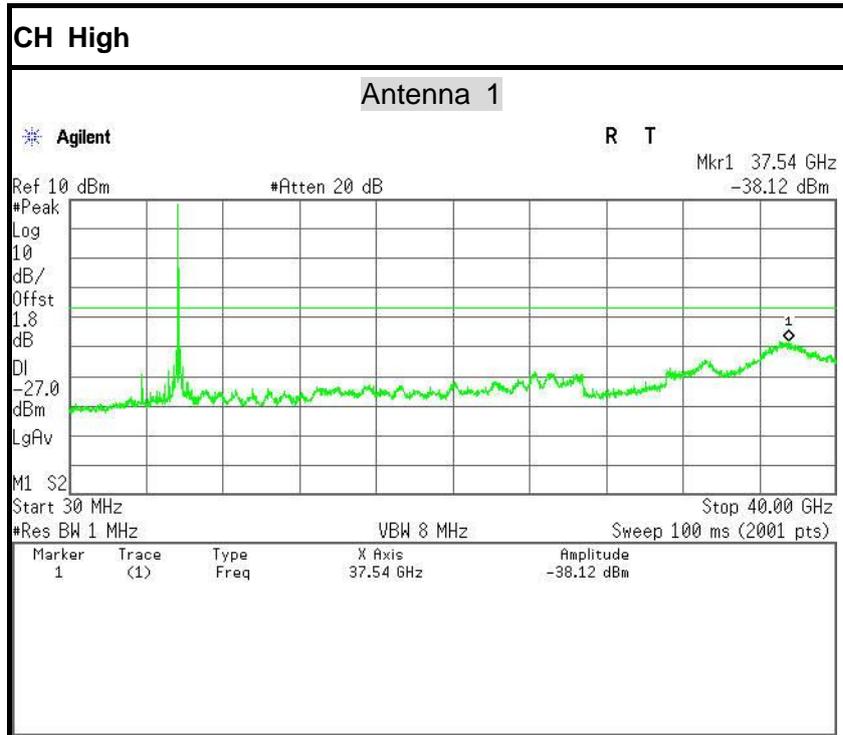
IEEE 802.11a mode / 5500 ~ 5700MHz

CH Low

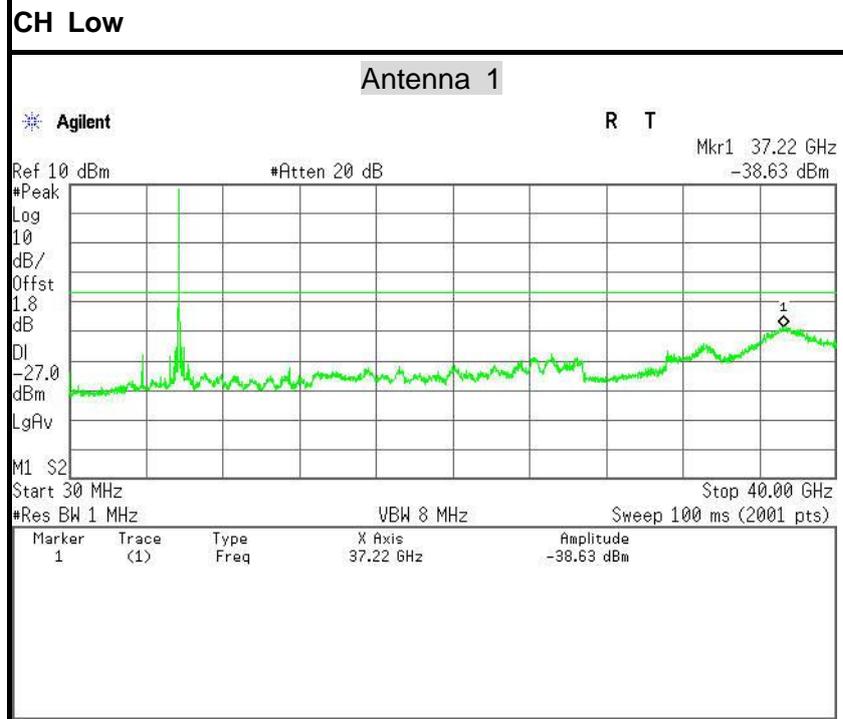


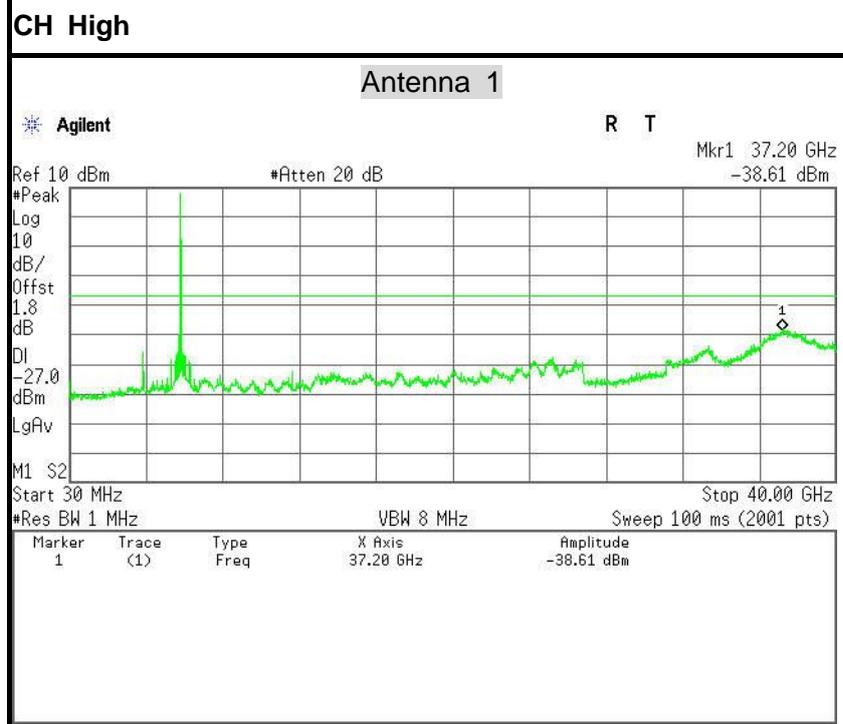
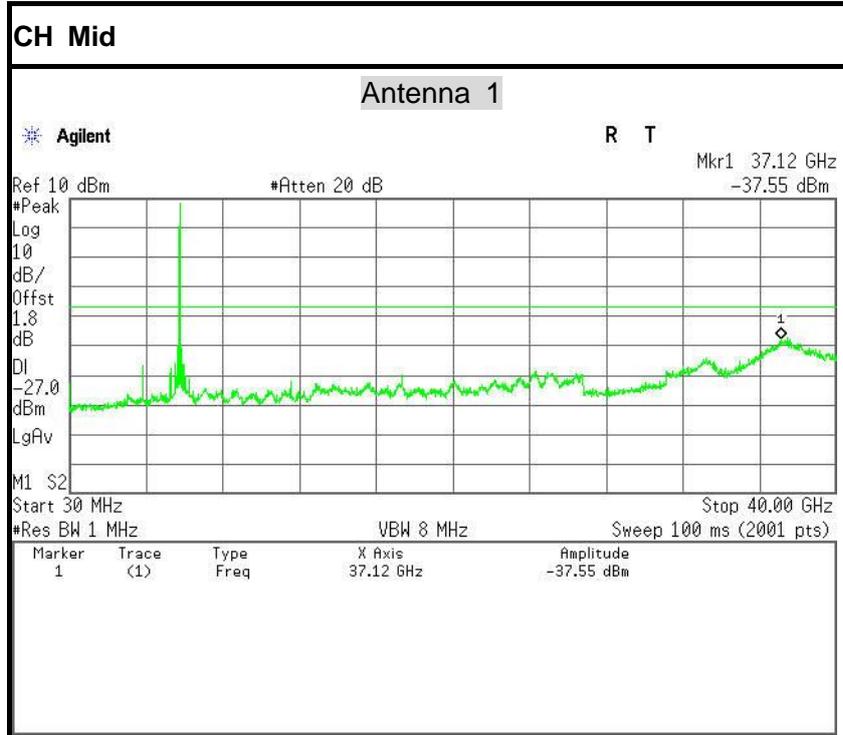
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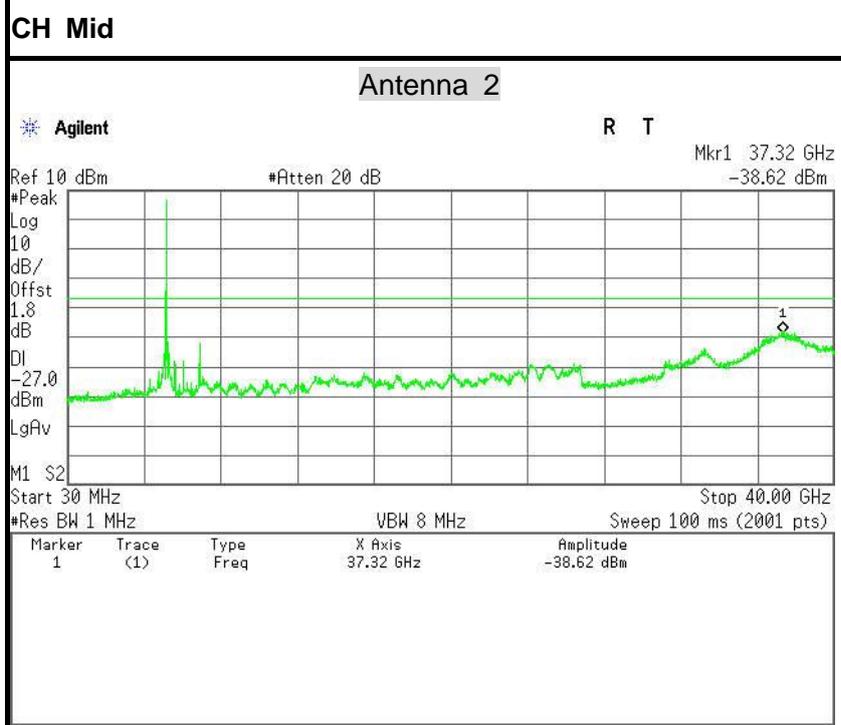
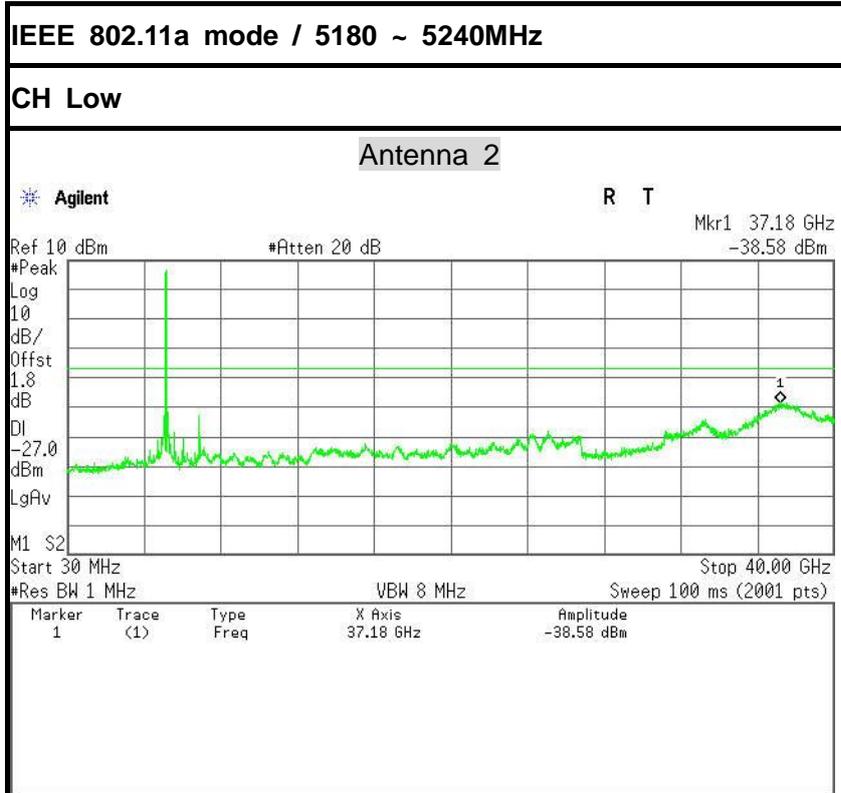


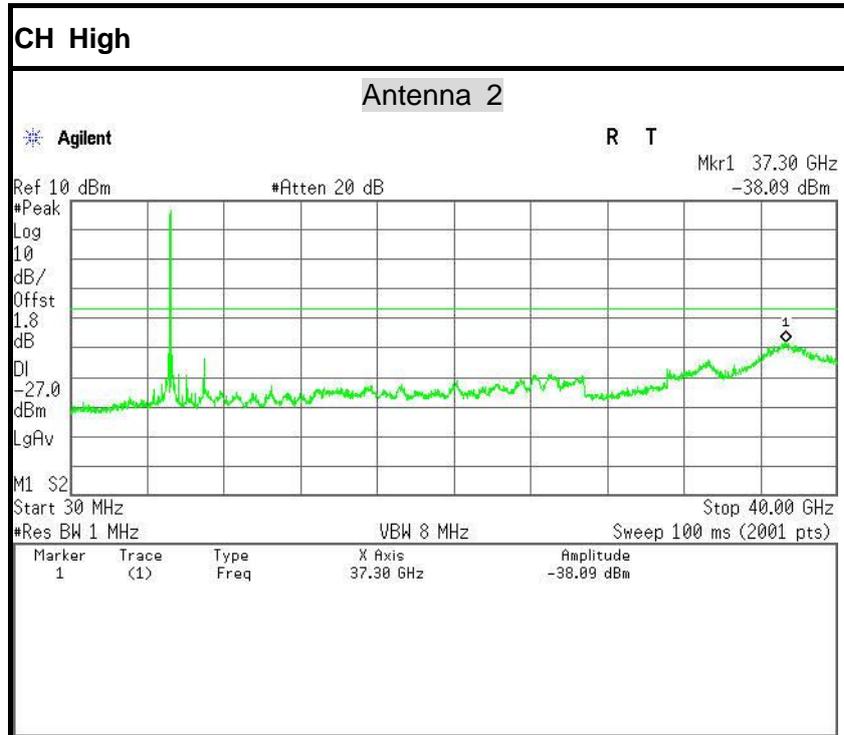


IEEE 802.11a mode / 5745 ~ 5825MHz

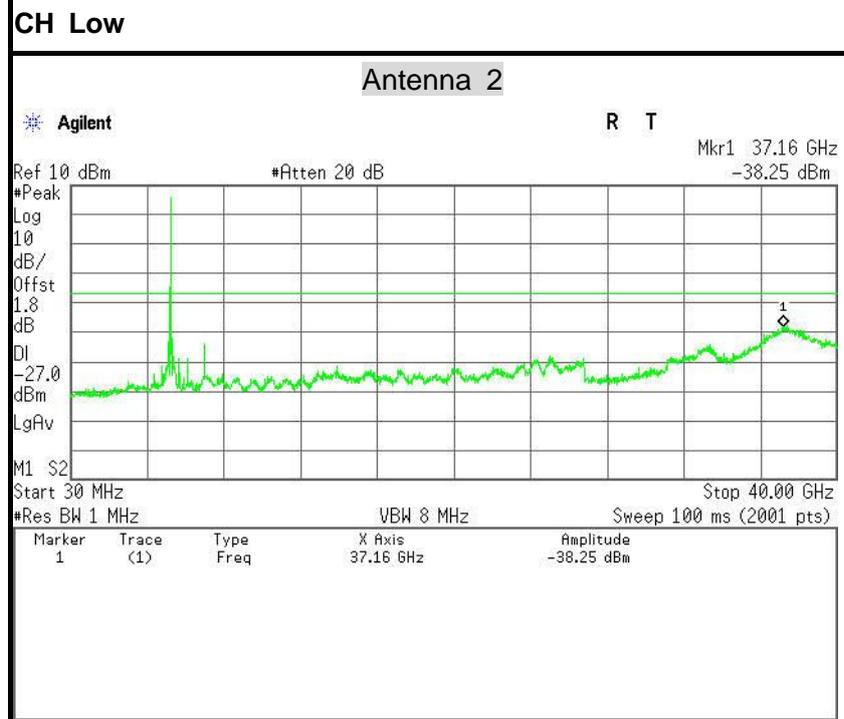


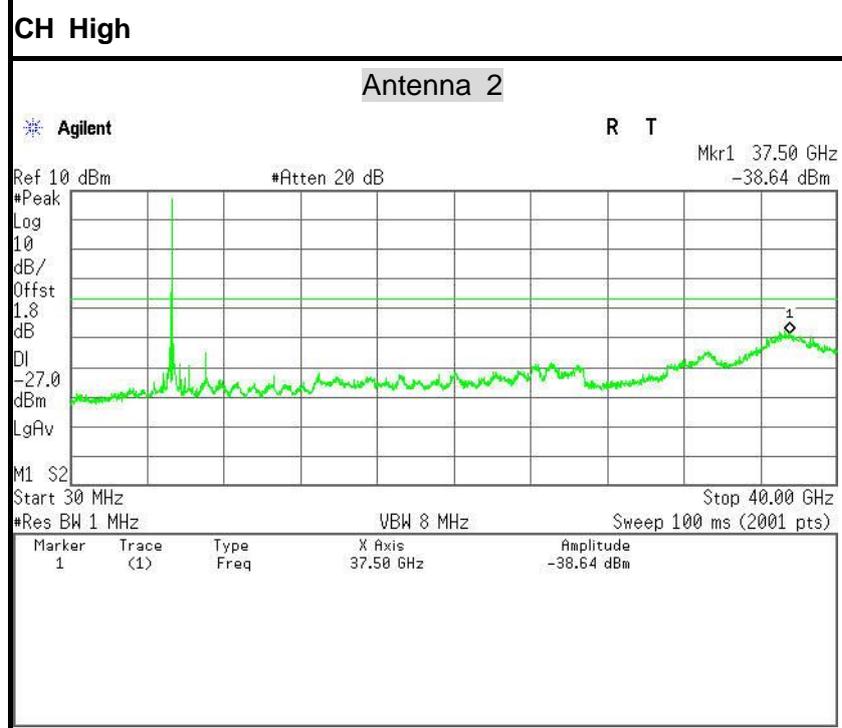
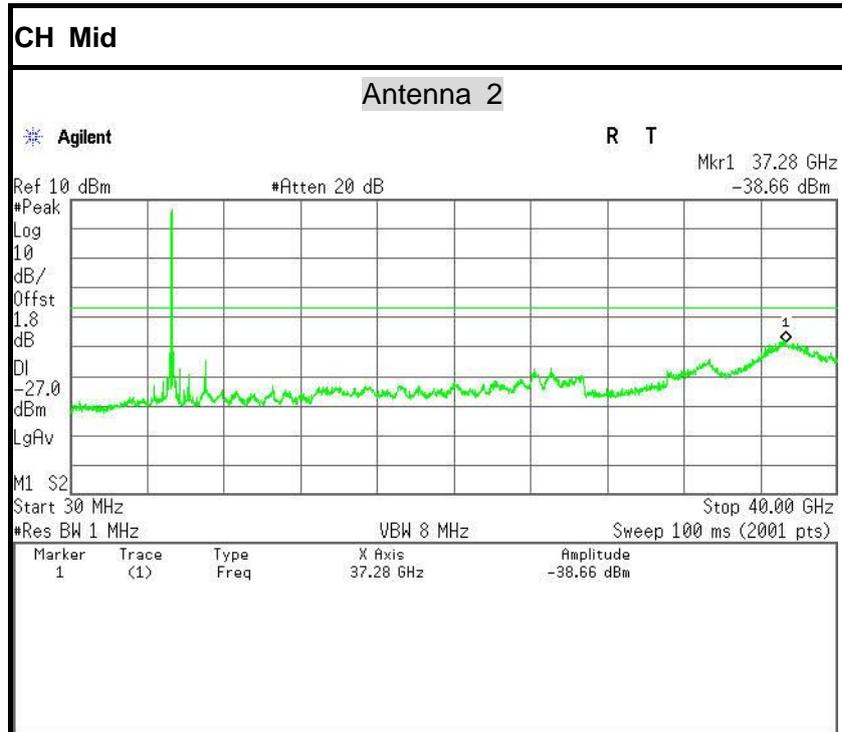


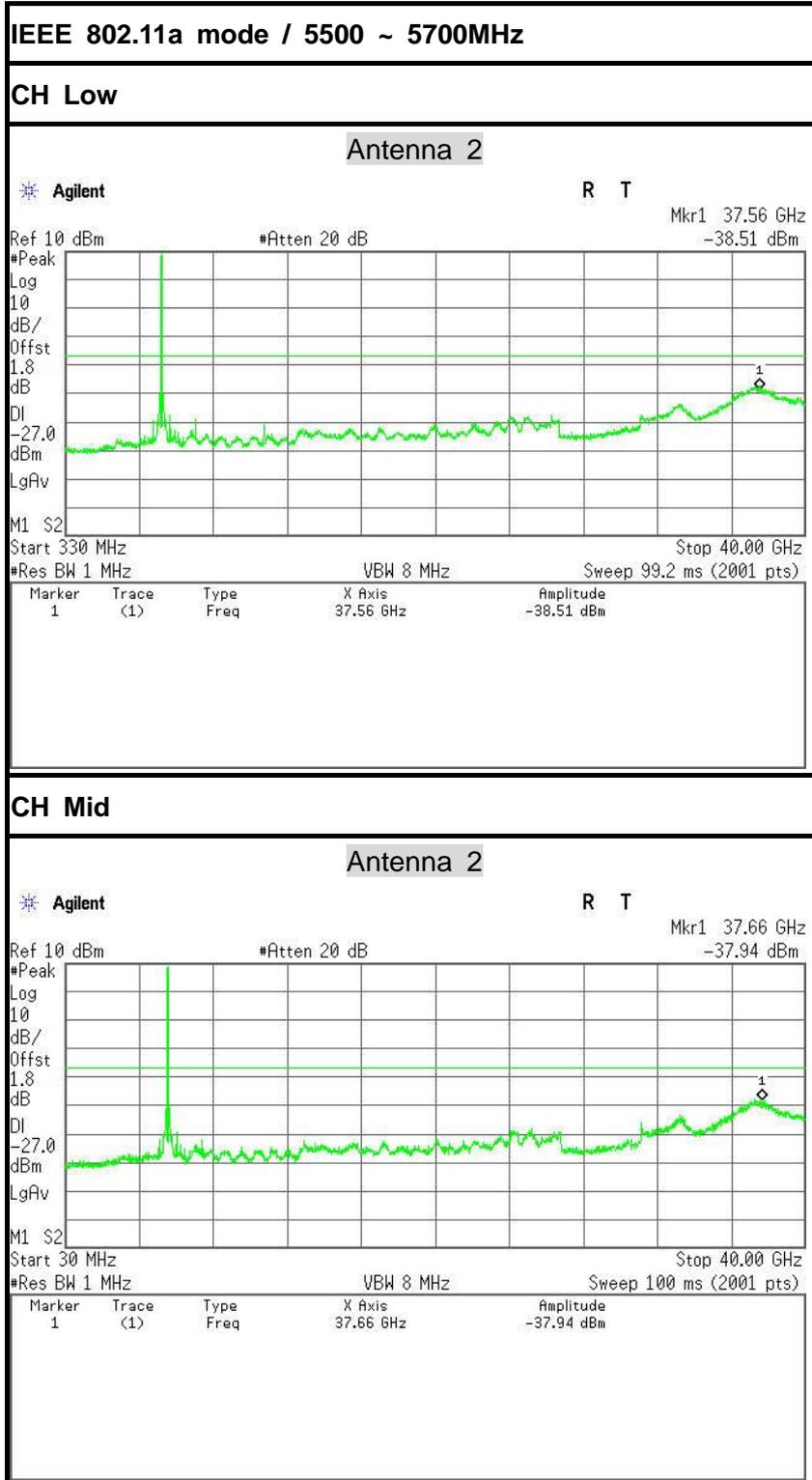


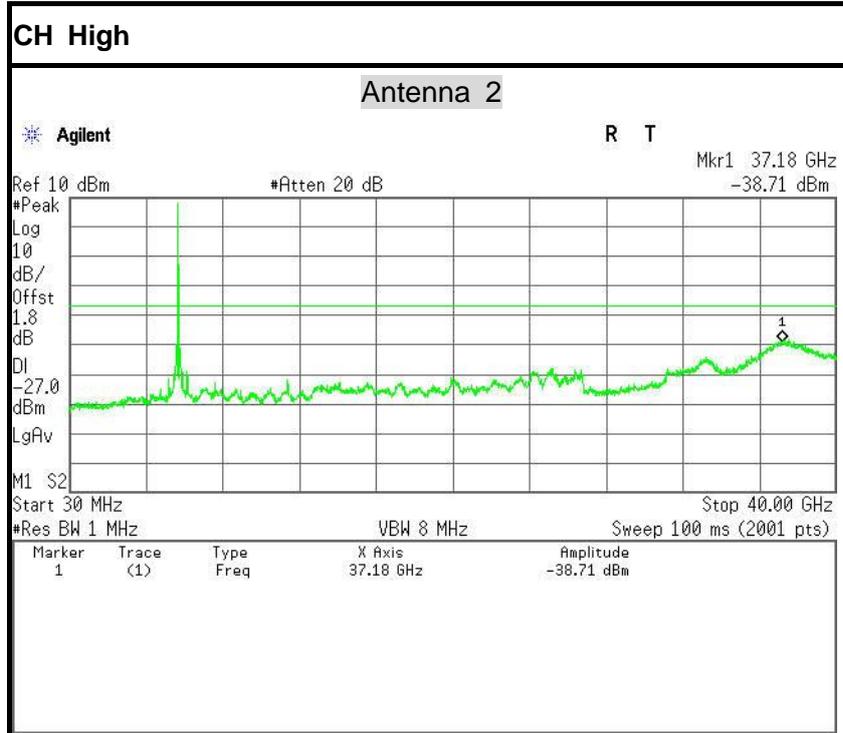


IEEE 802.11a mode / 5260~ 5320MHz

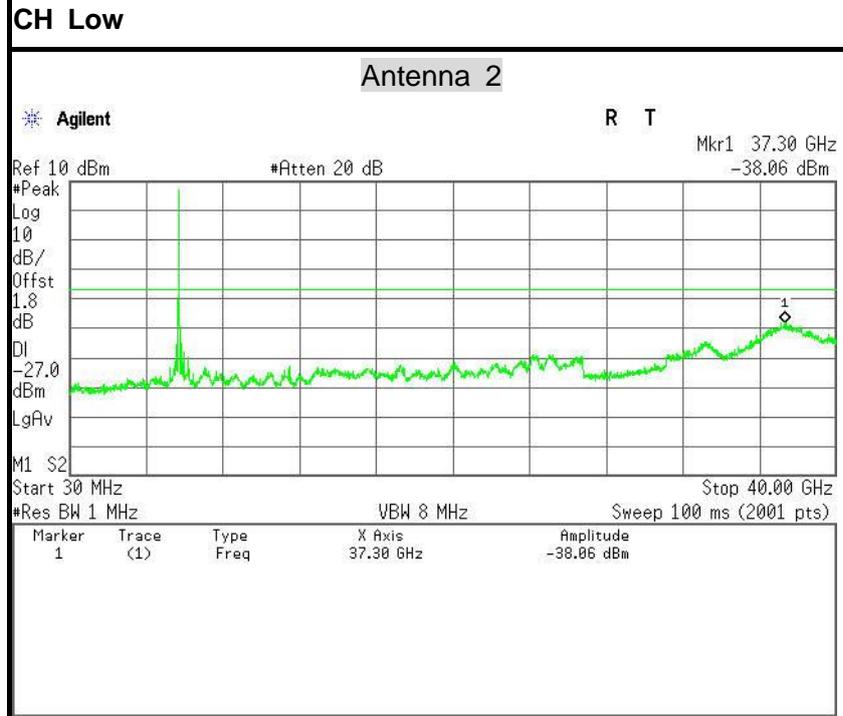


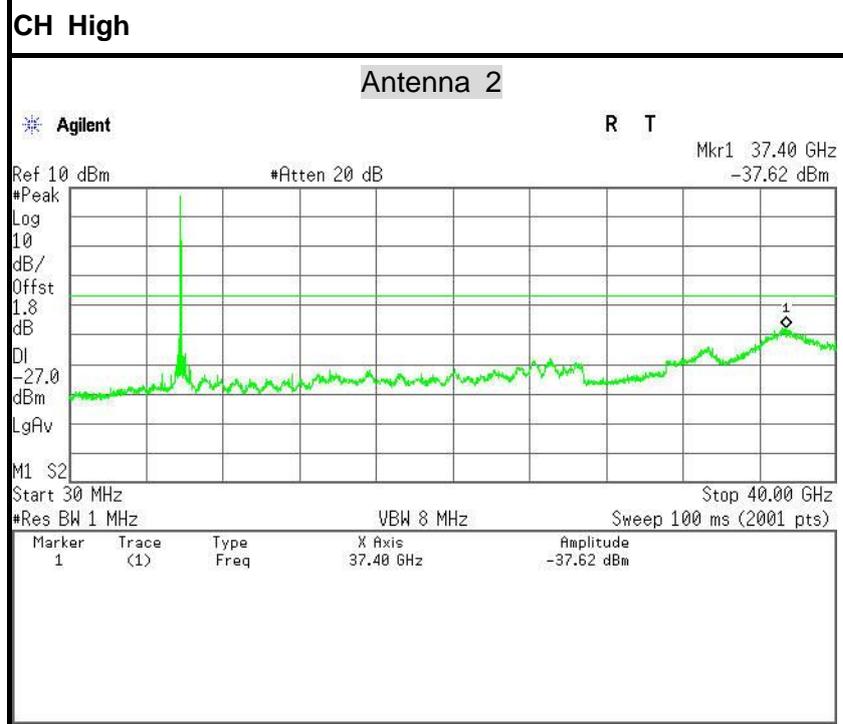
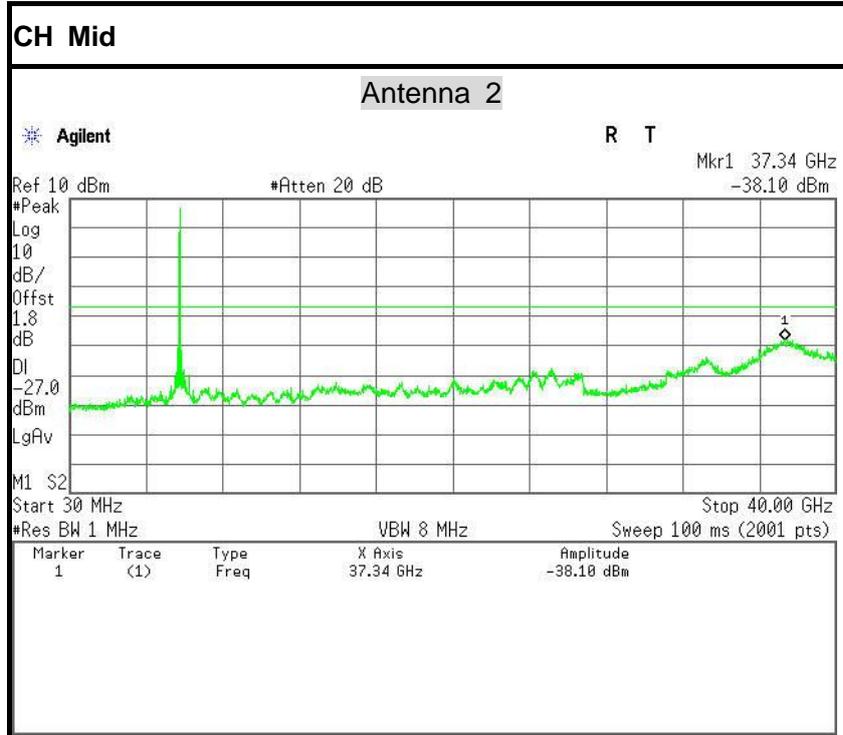


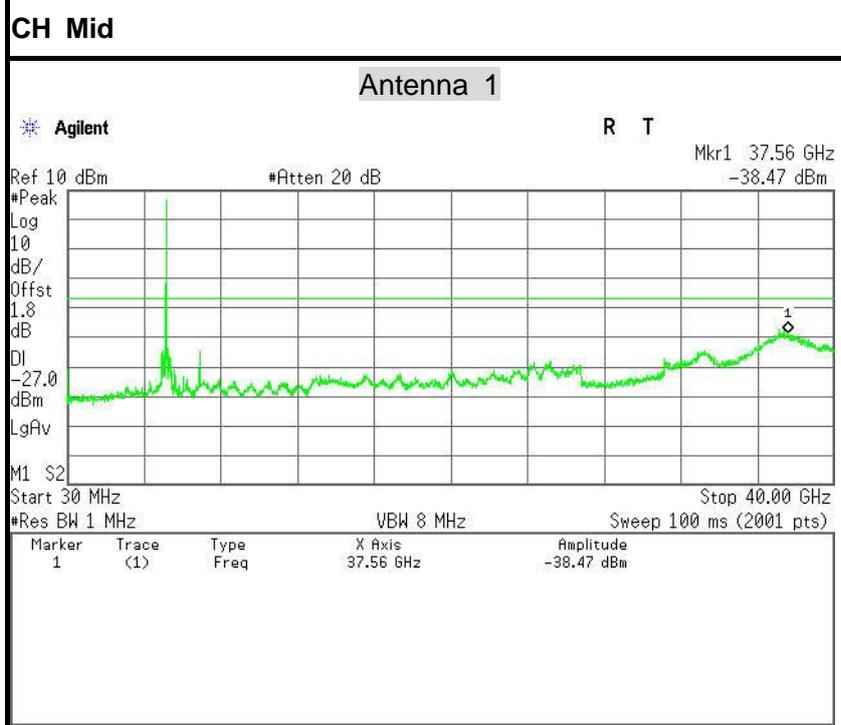
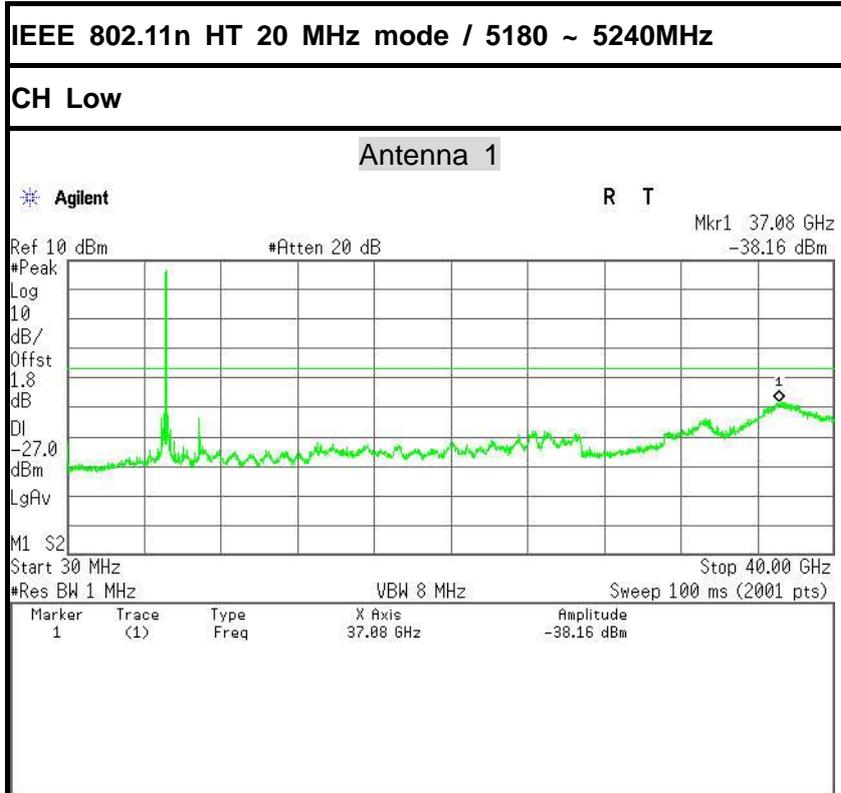


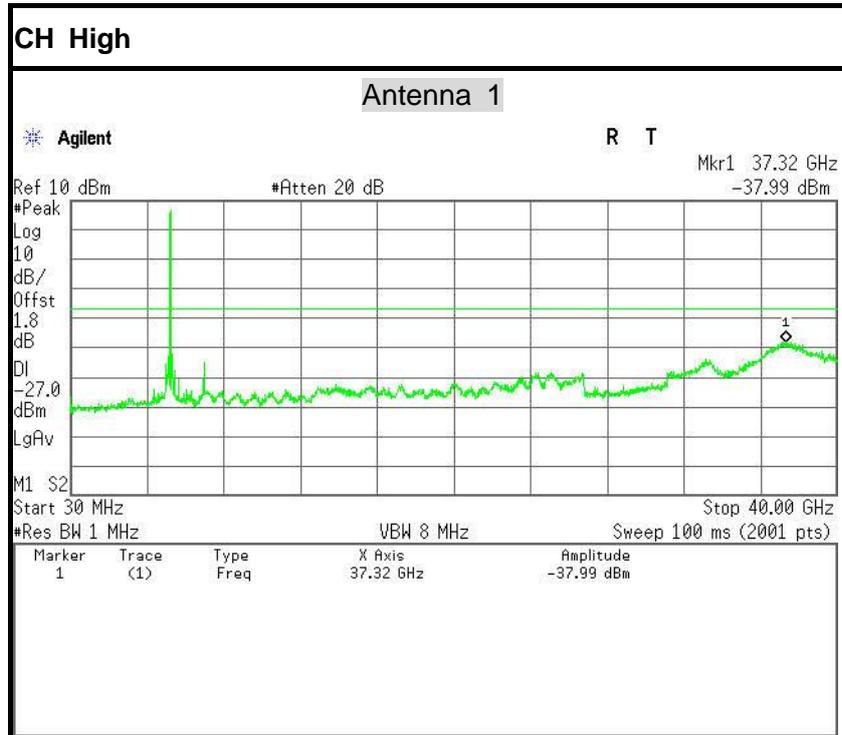


IEEE 802.11a mode / 5745 ~ 5825MHz

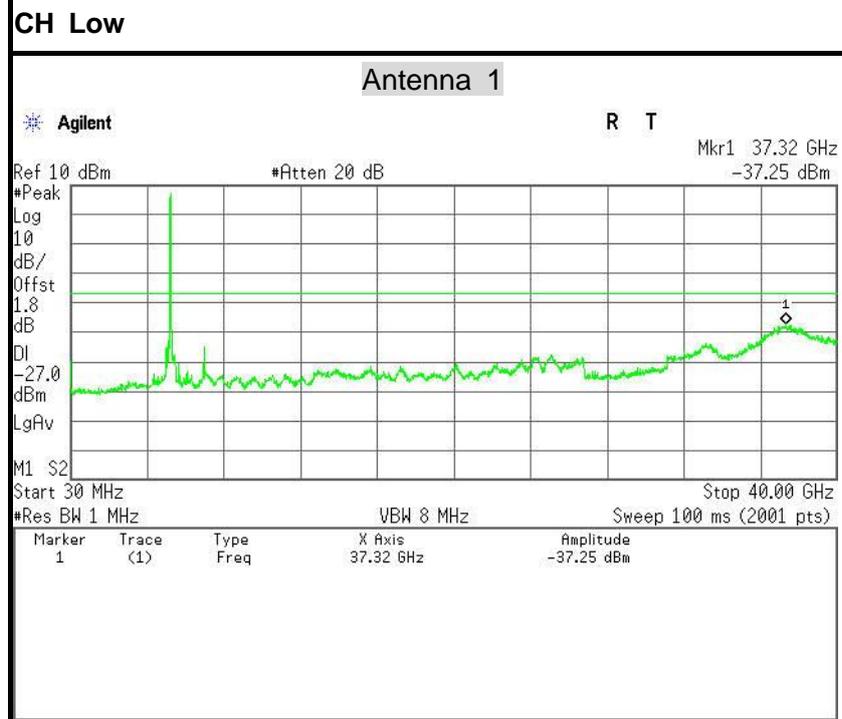


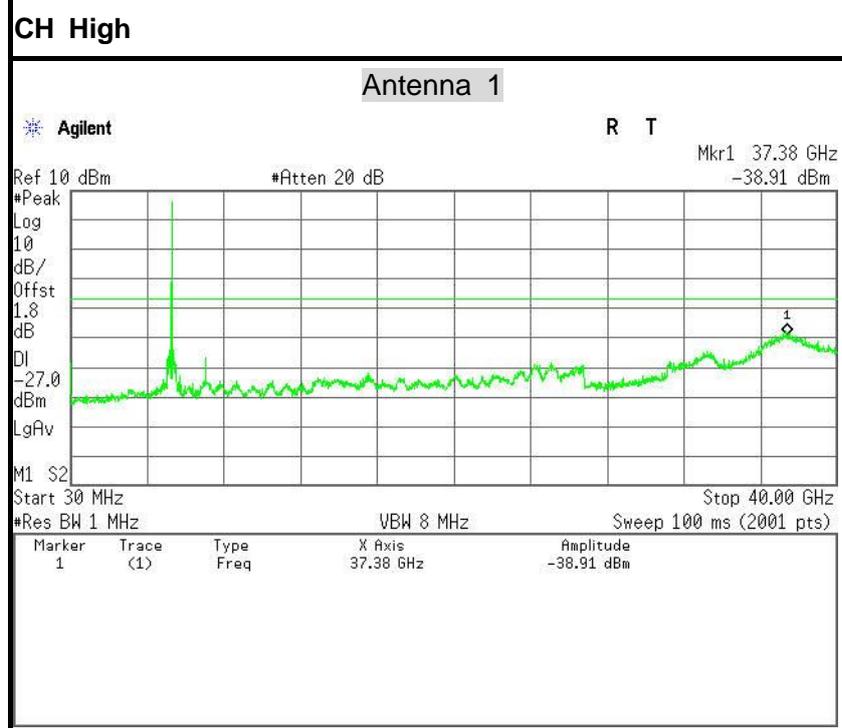
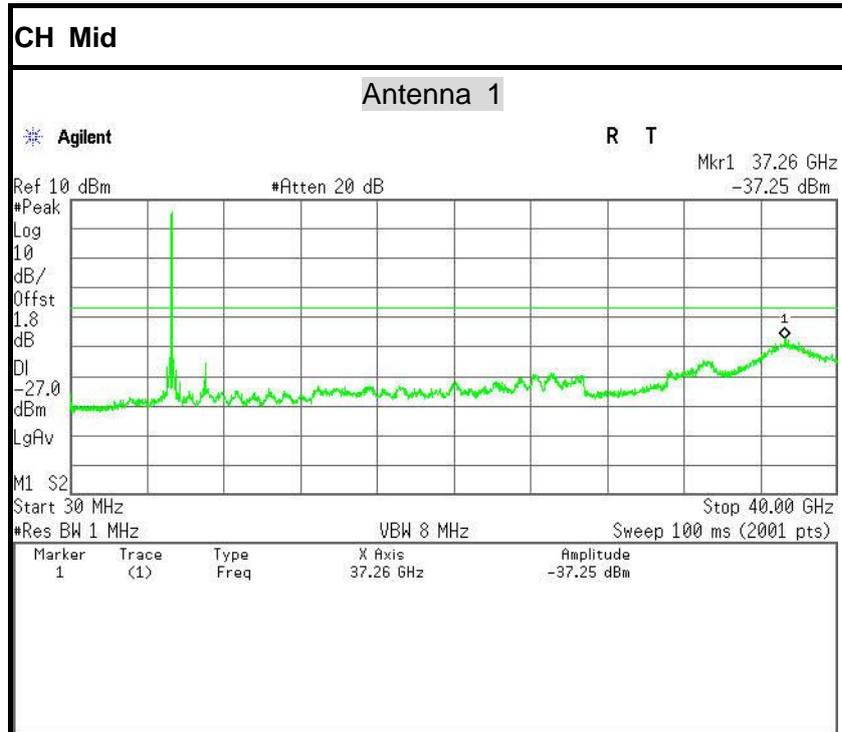






IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz

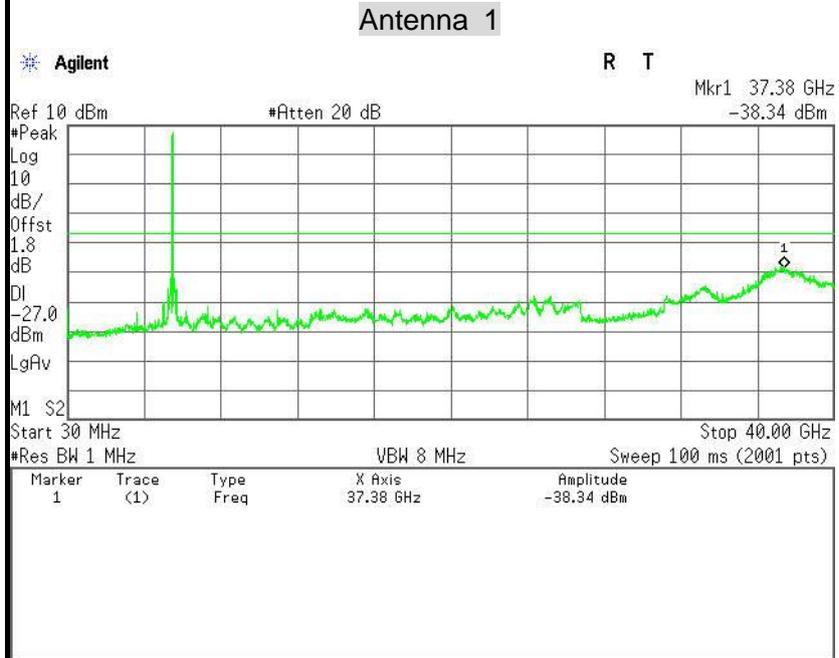




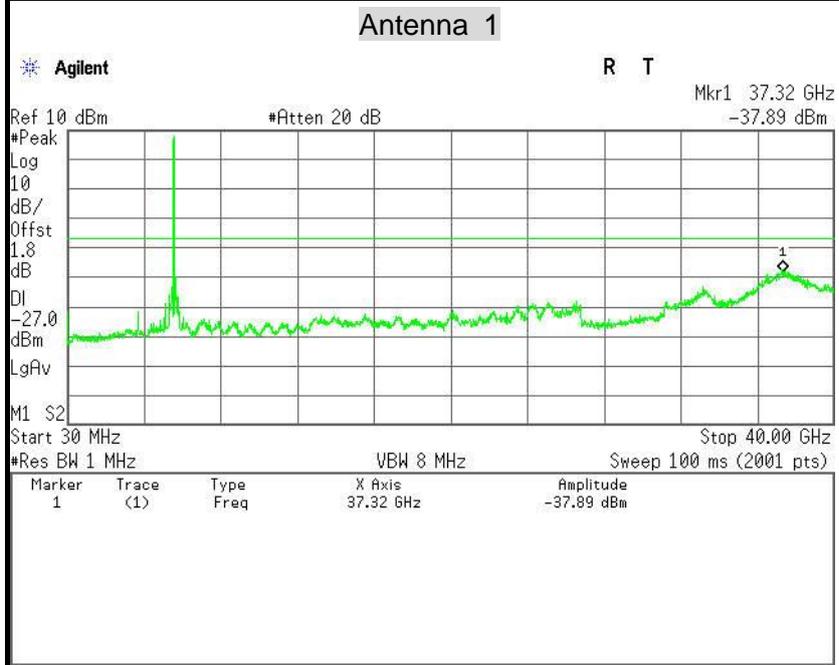


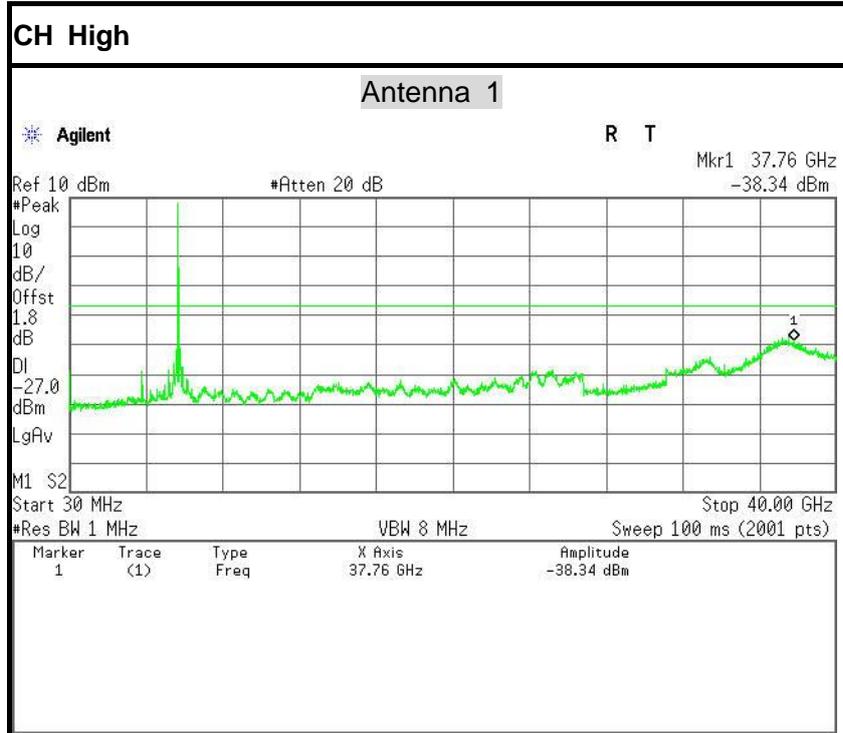
IEEE 802.11n HT 20 MHz mode / 5500 ~ 5700MHz

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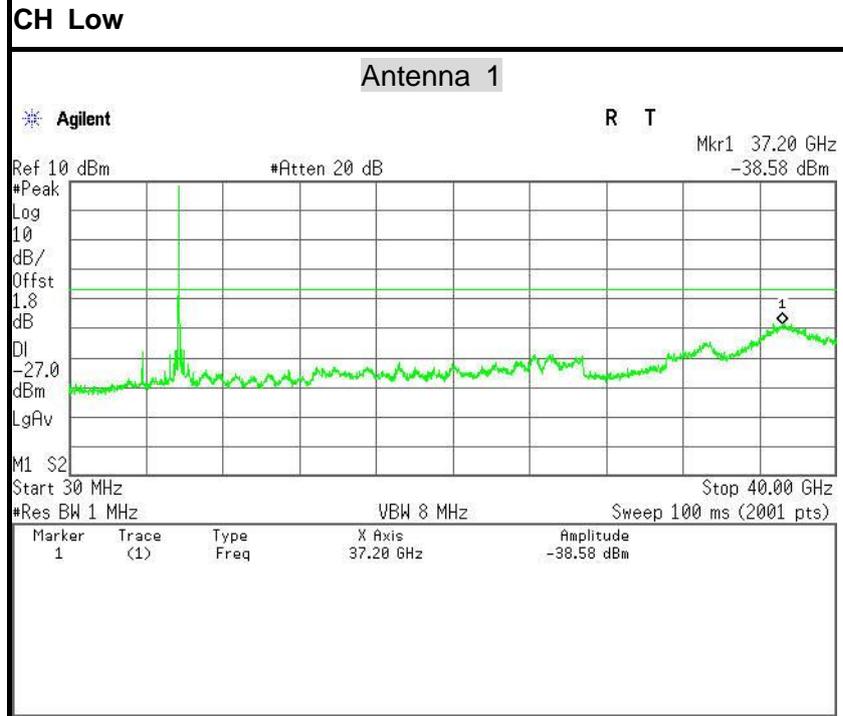


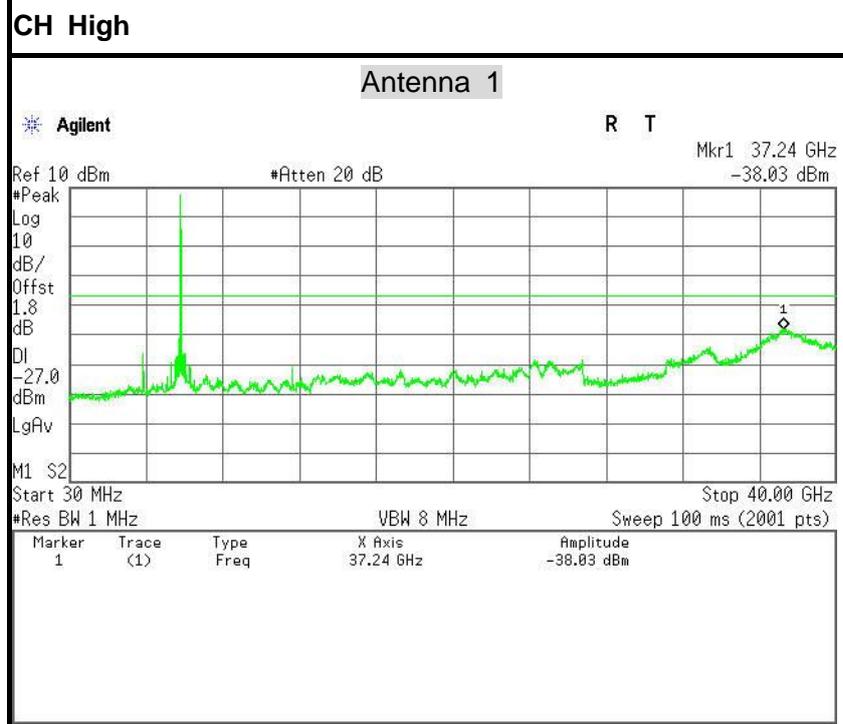
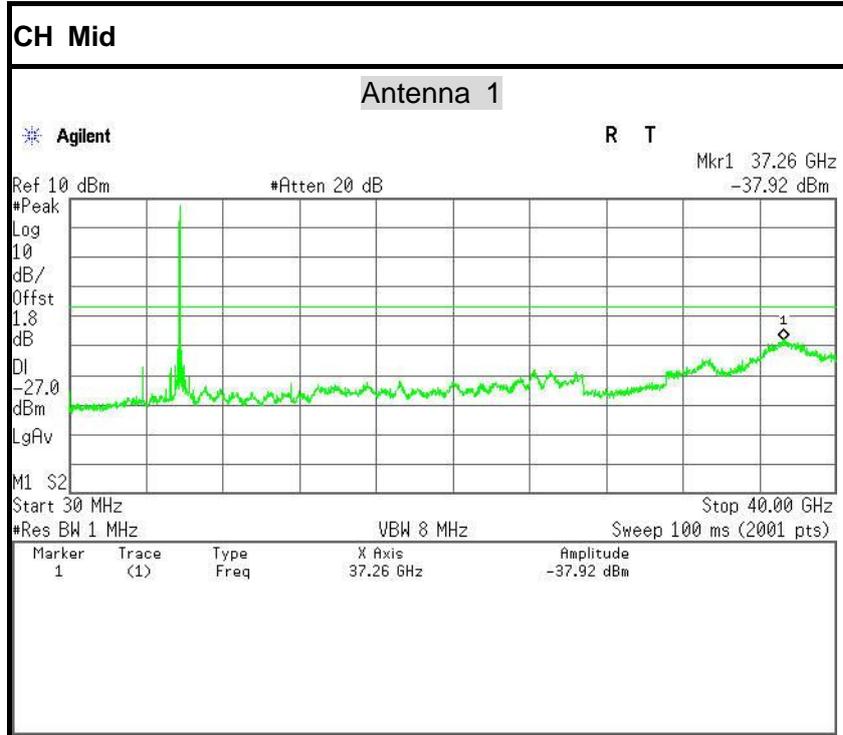
CH Mid

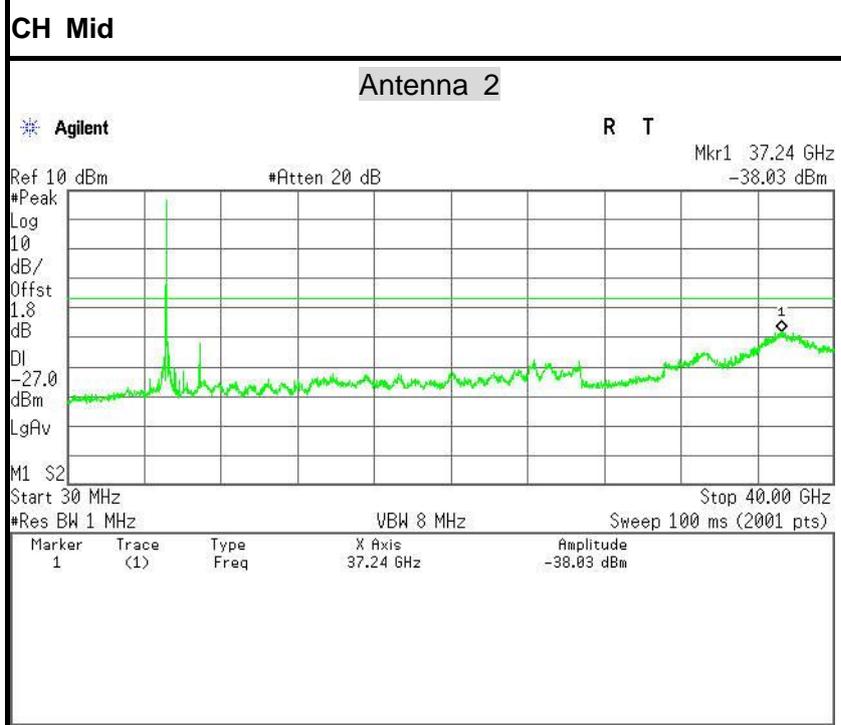
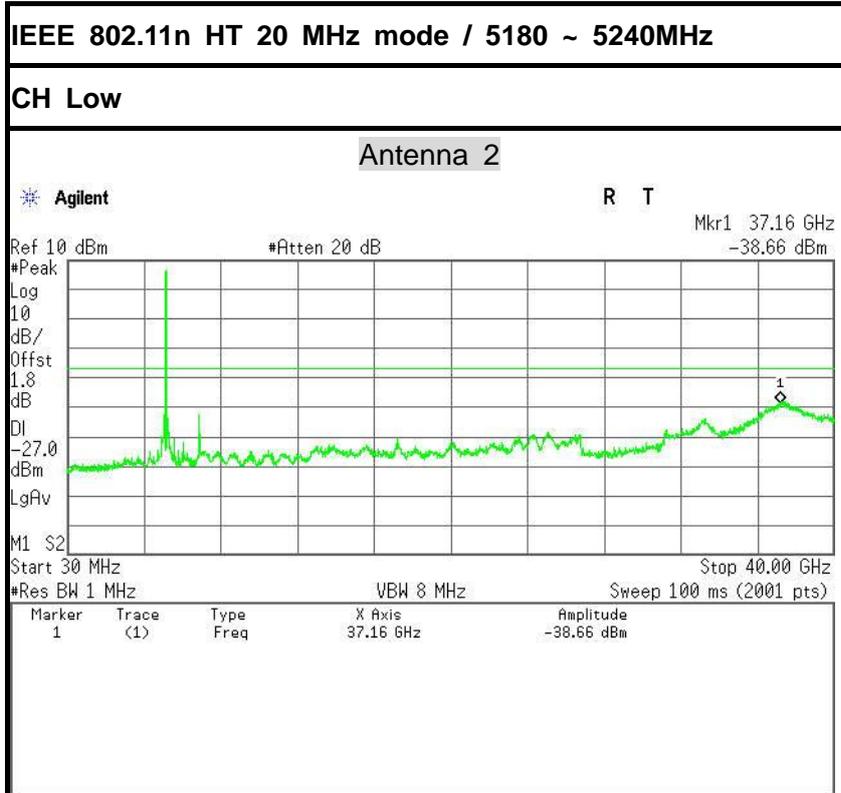


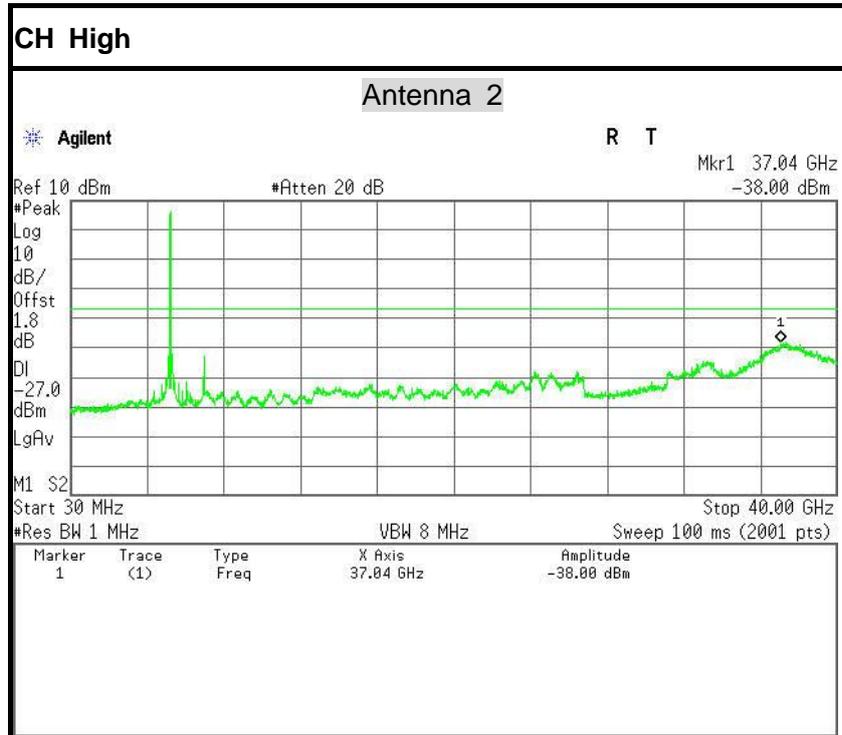


IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

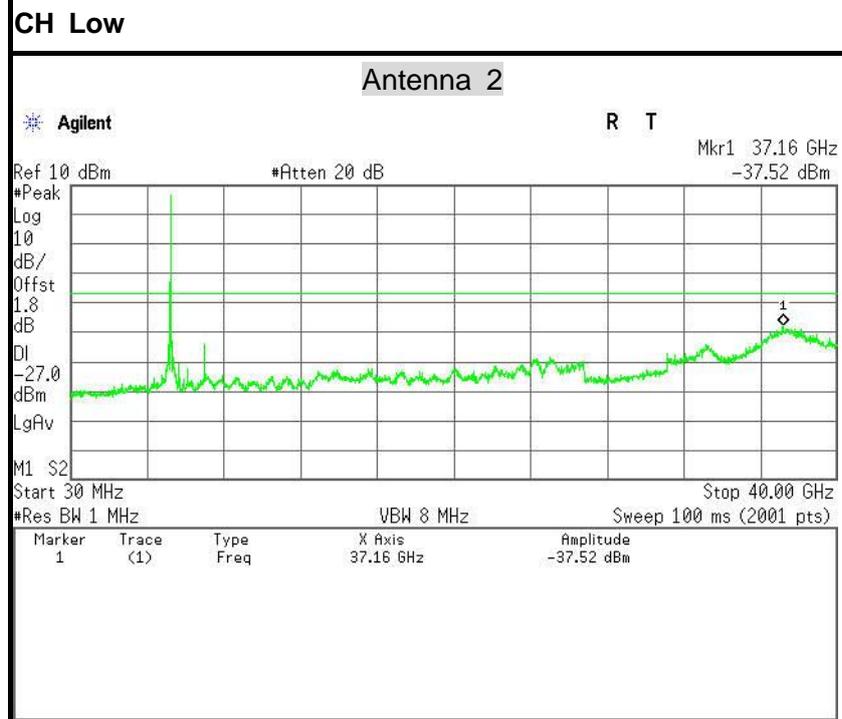


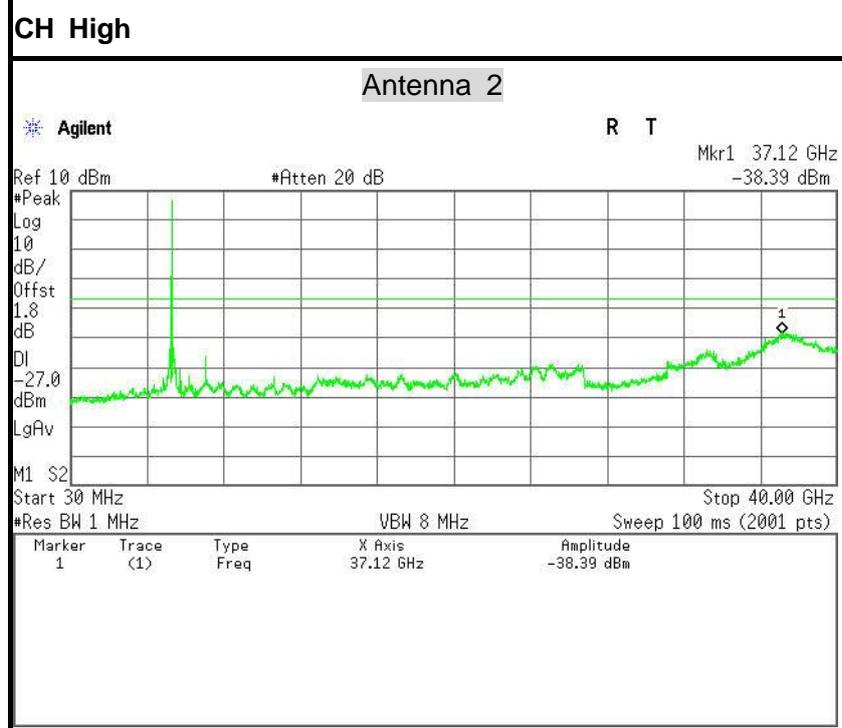
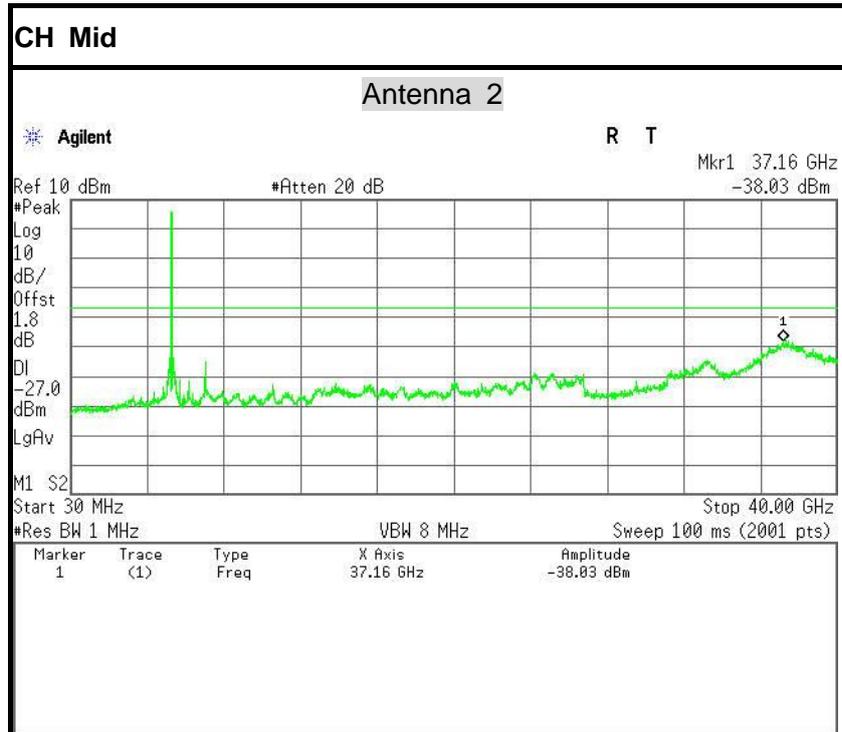


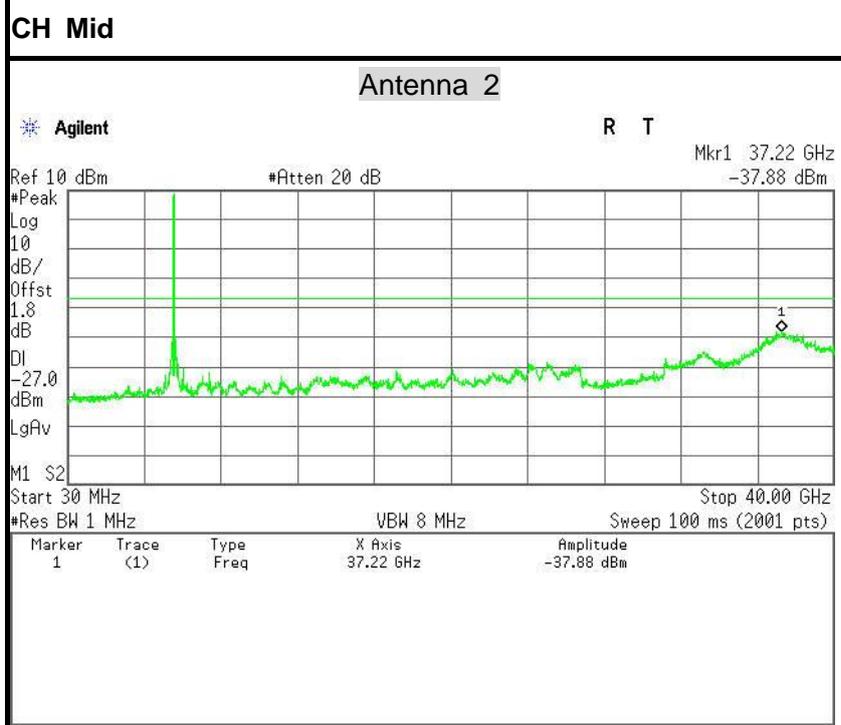
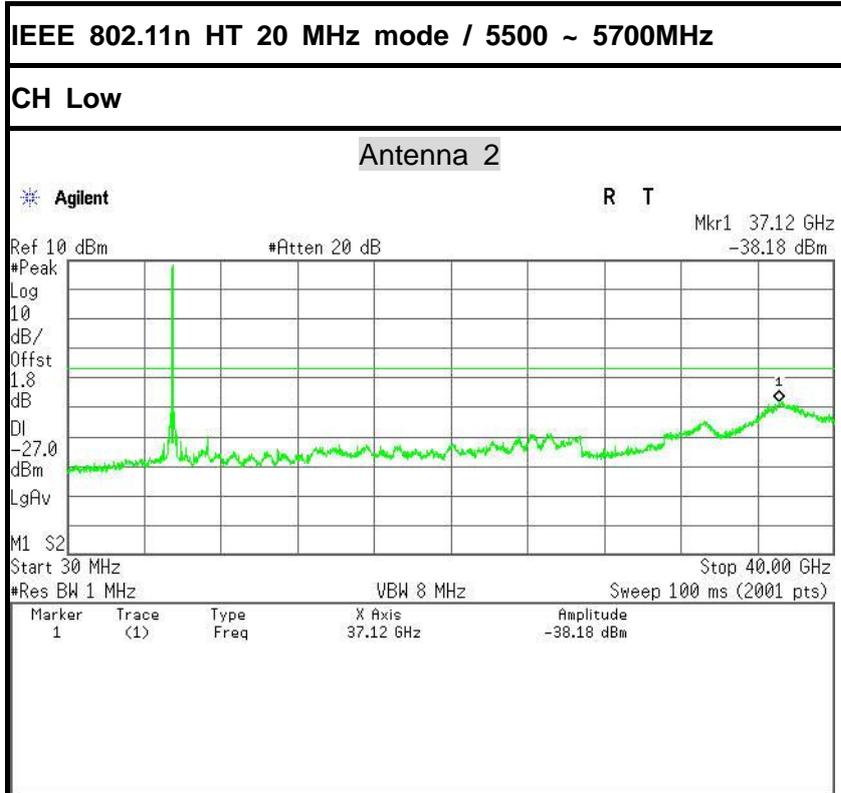


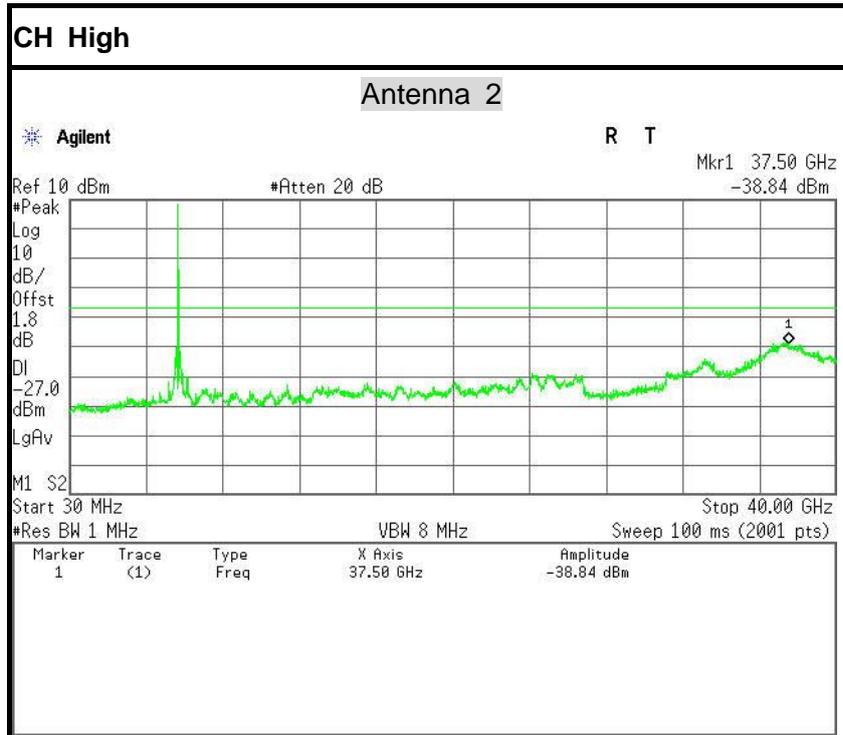


IEEE 802.11n HT 20 MHz mode / 5260~ 5320MHz

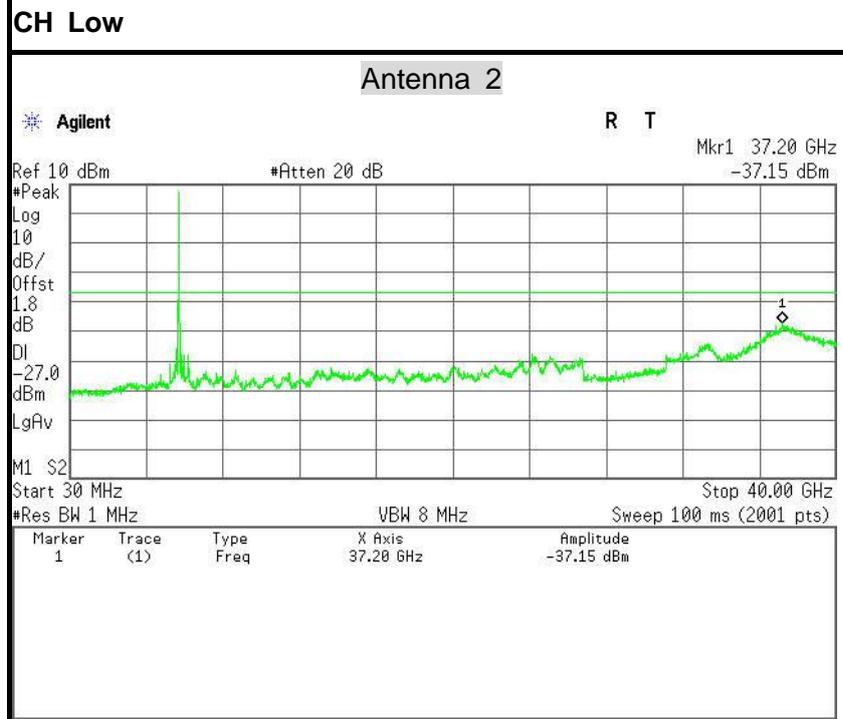


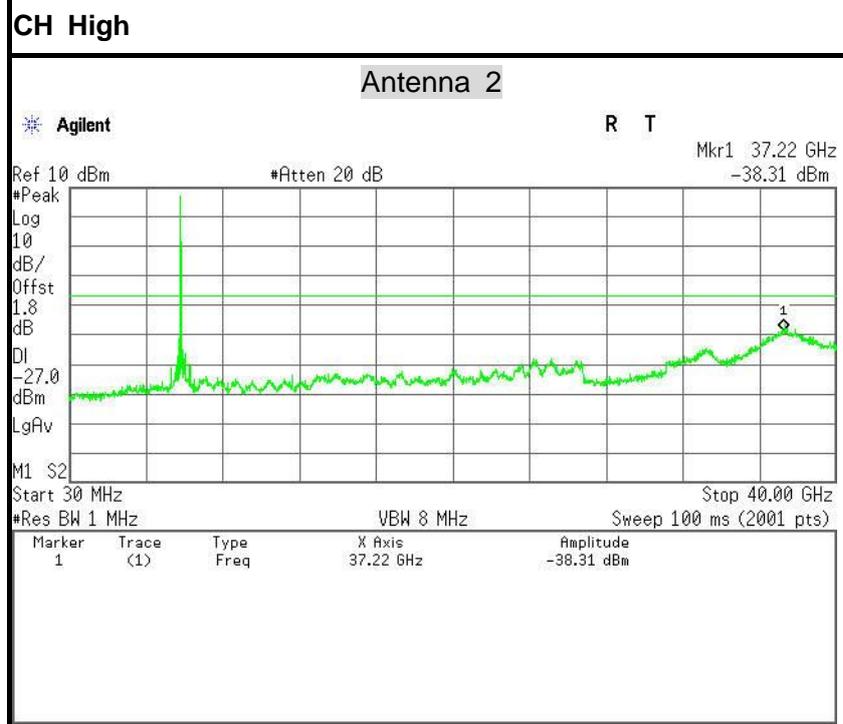
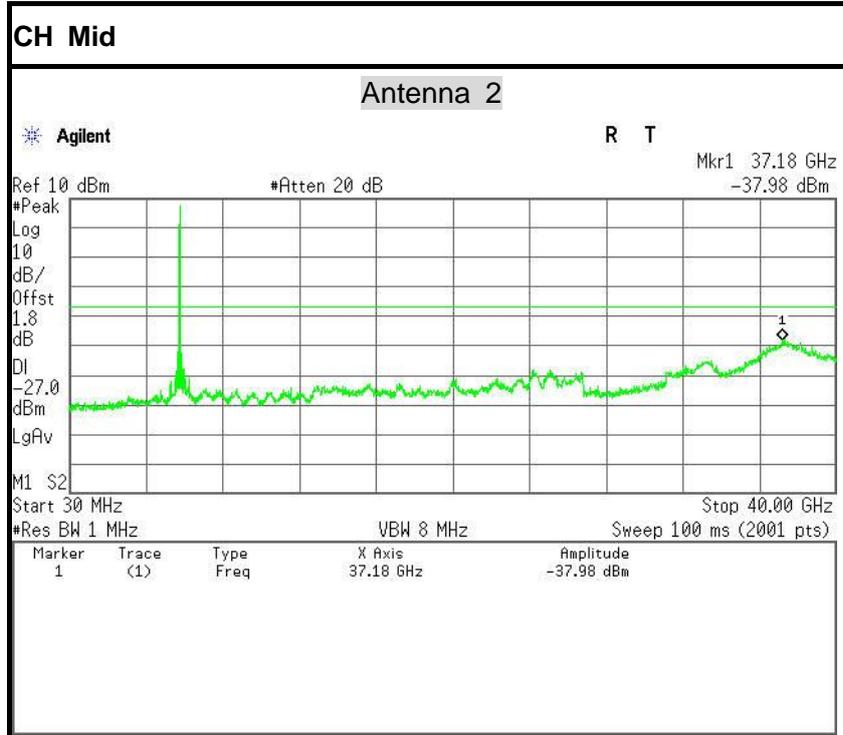


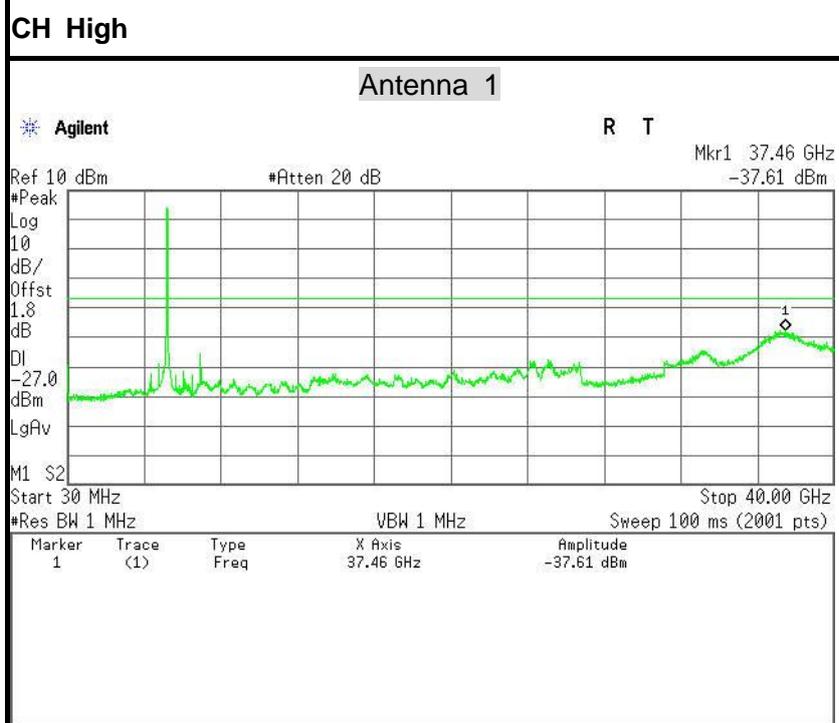
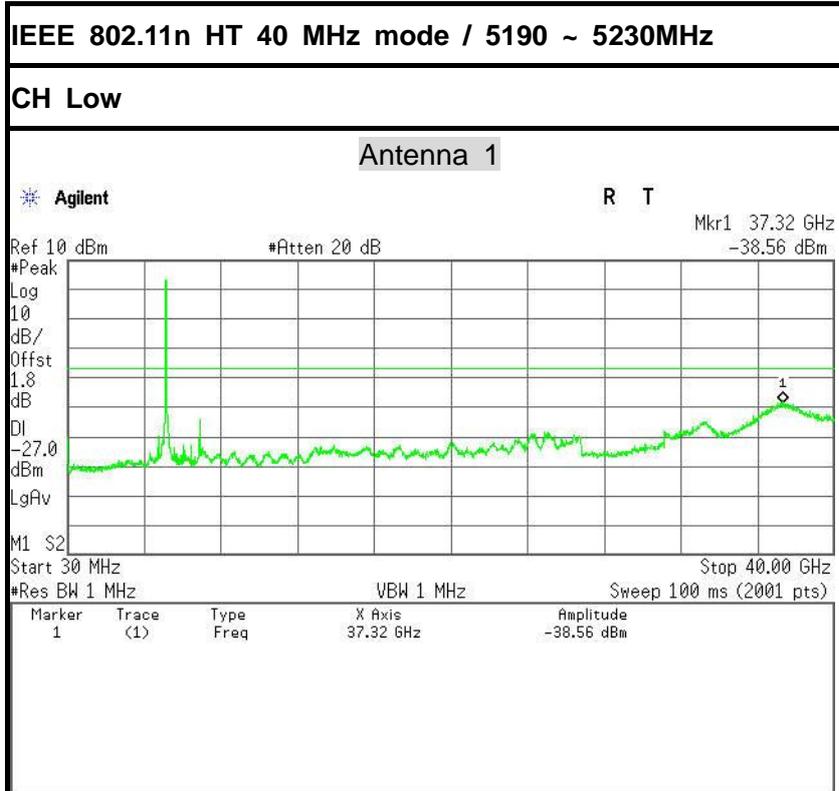


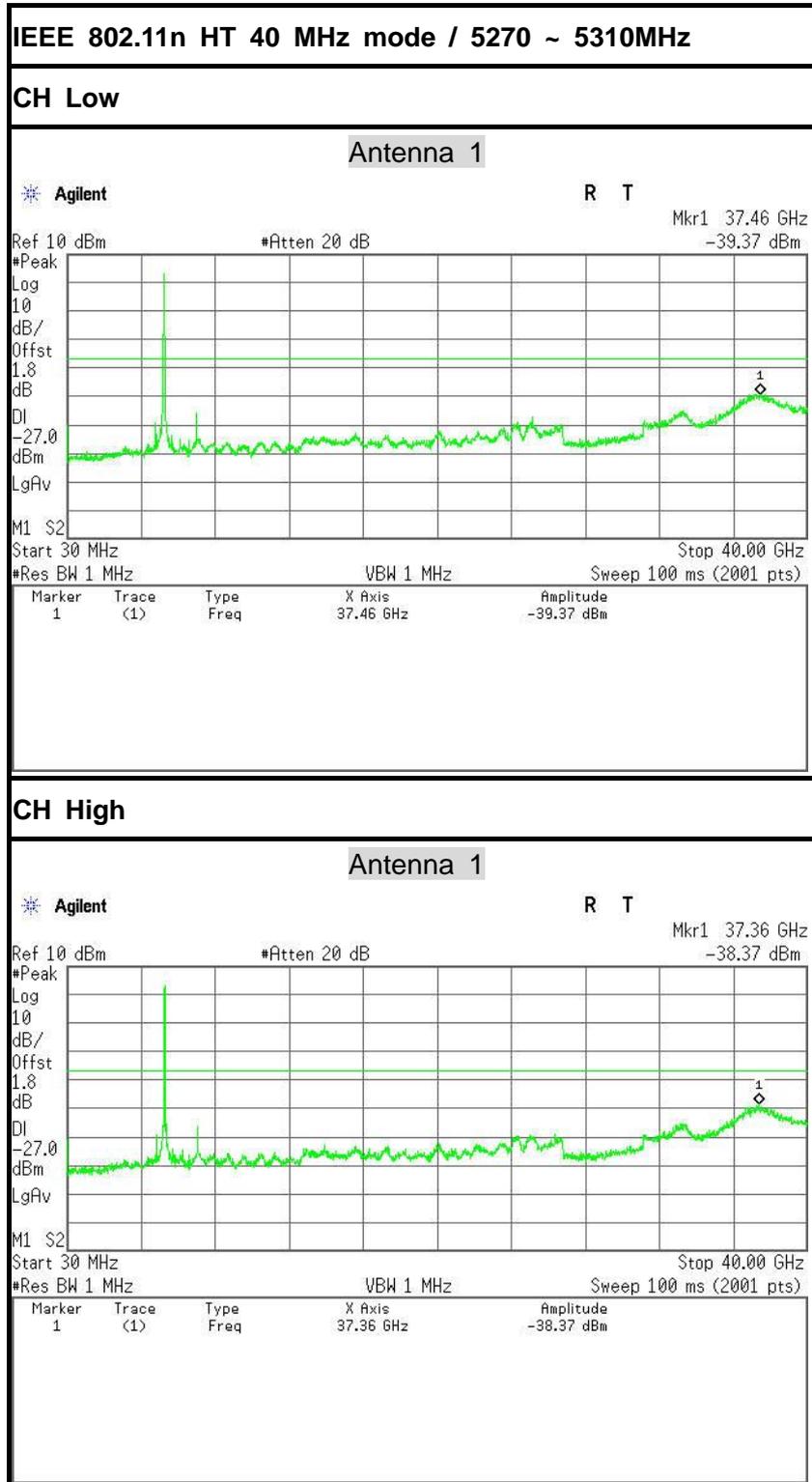


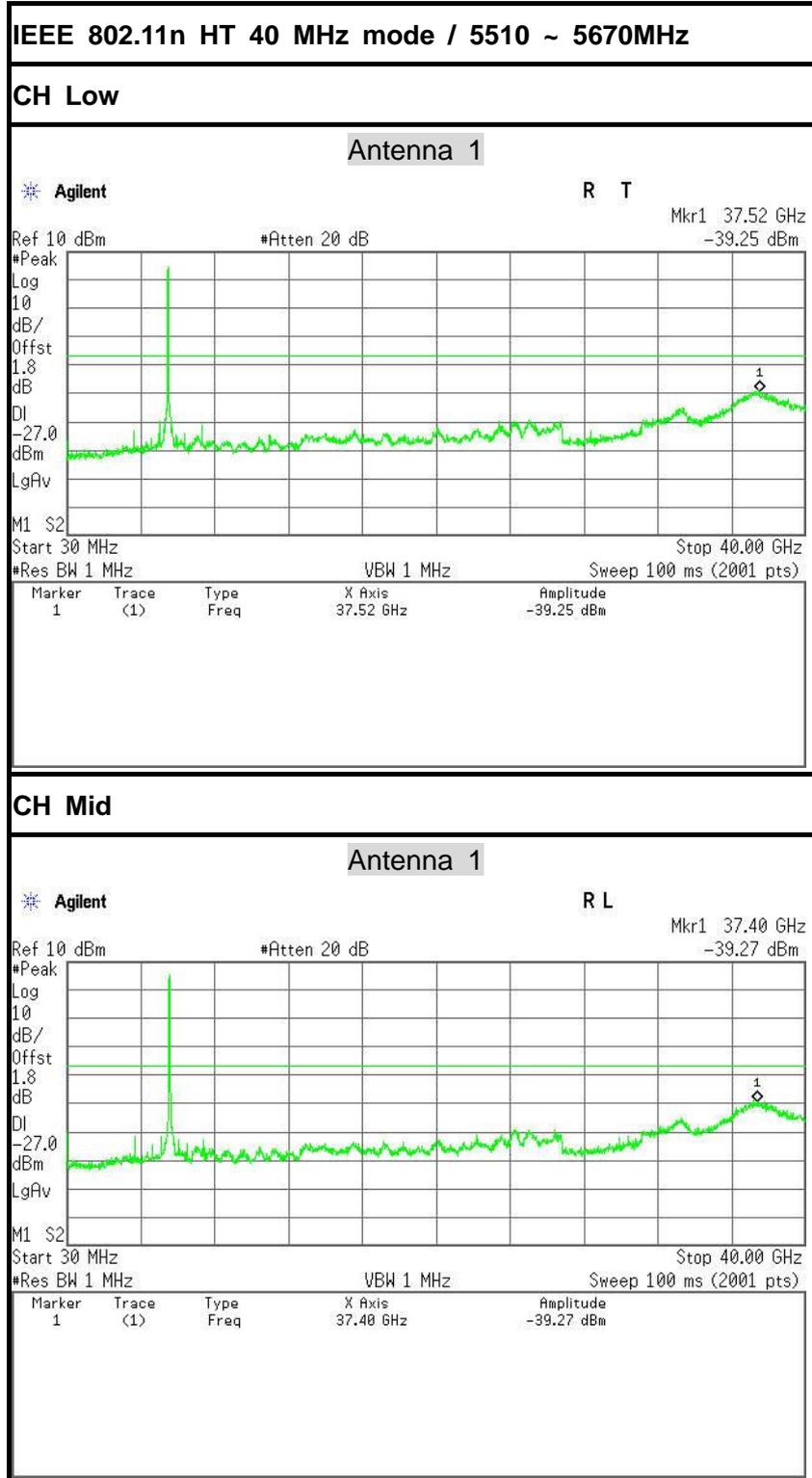
IEEE 802.11n HT 20 MHz mode / 5745 ~ 5825MHz

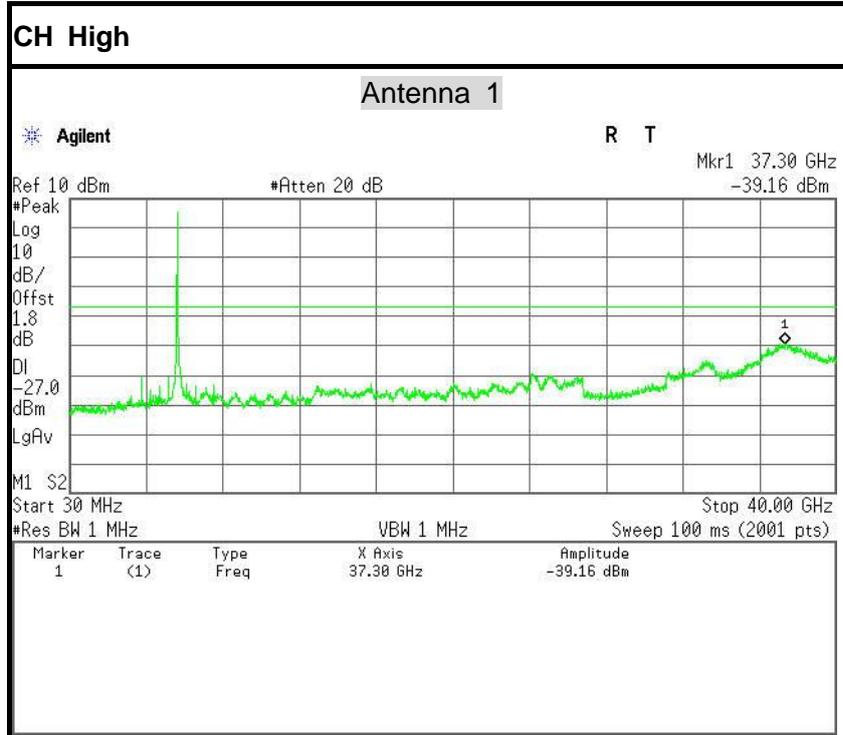




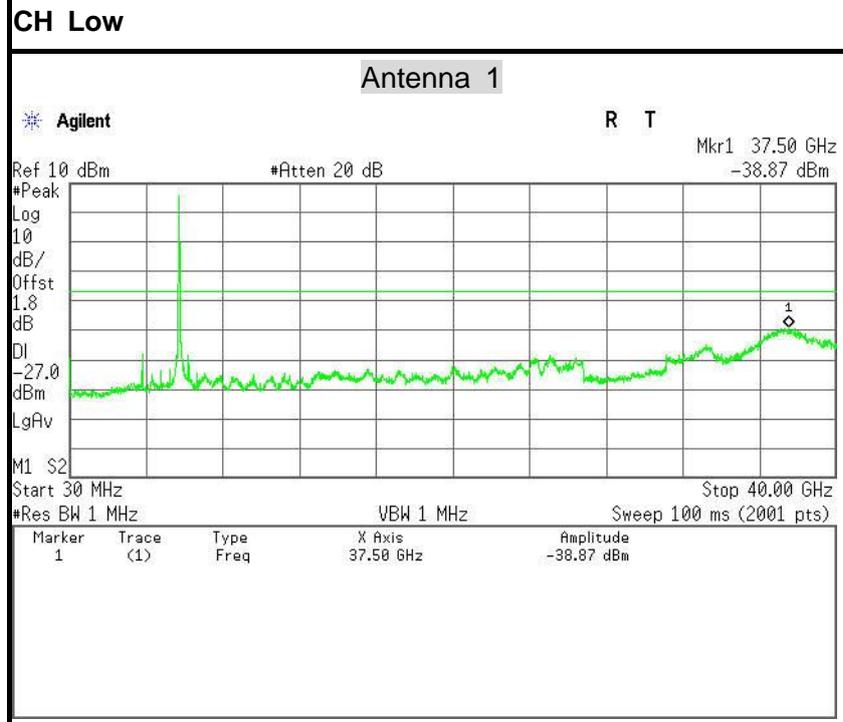


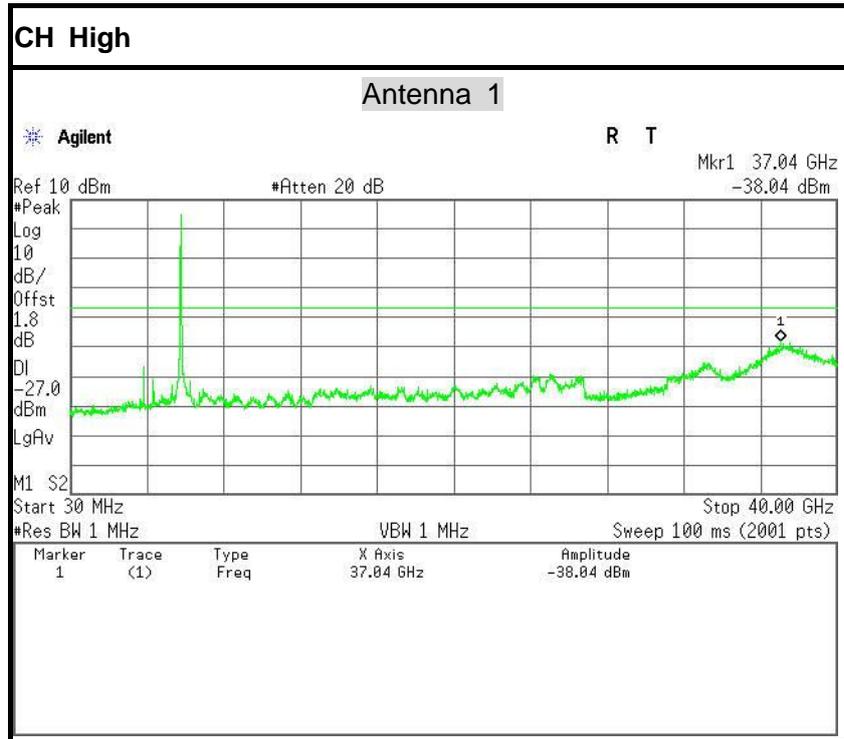






IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

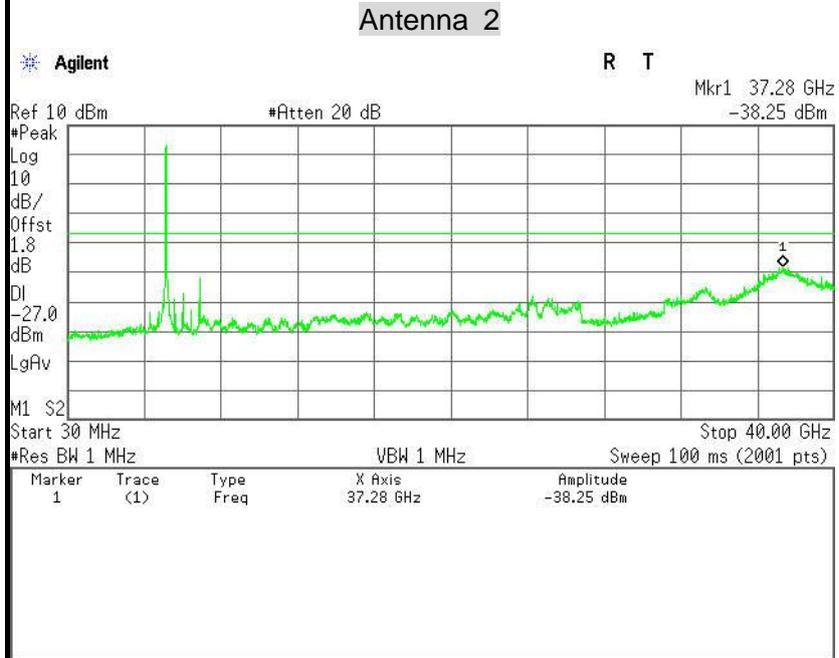




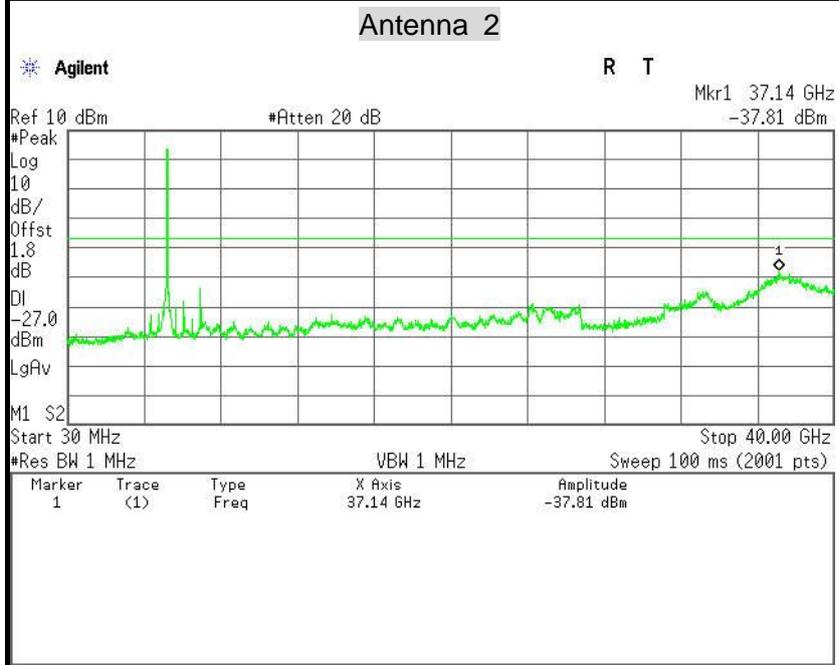


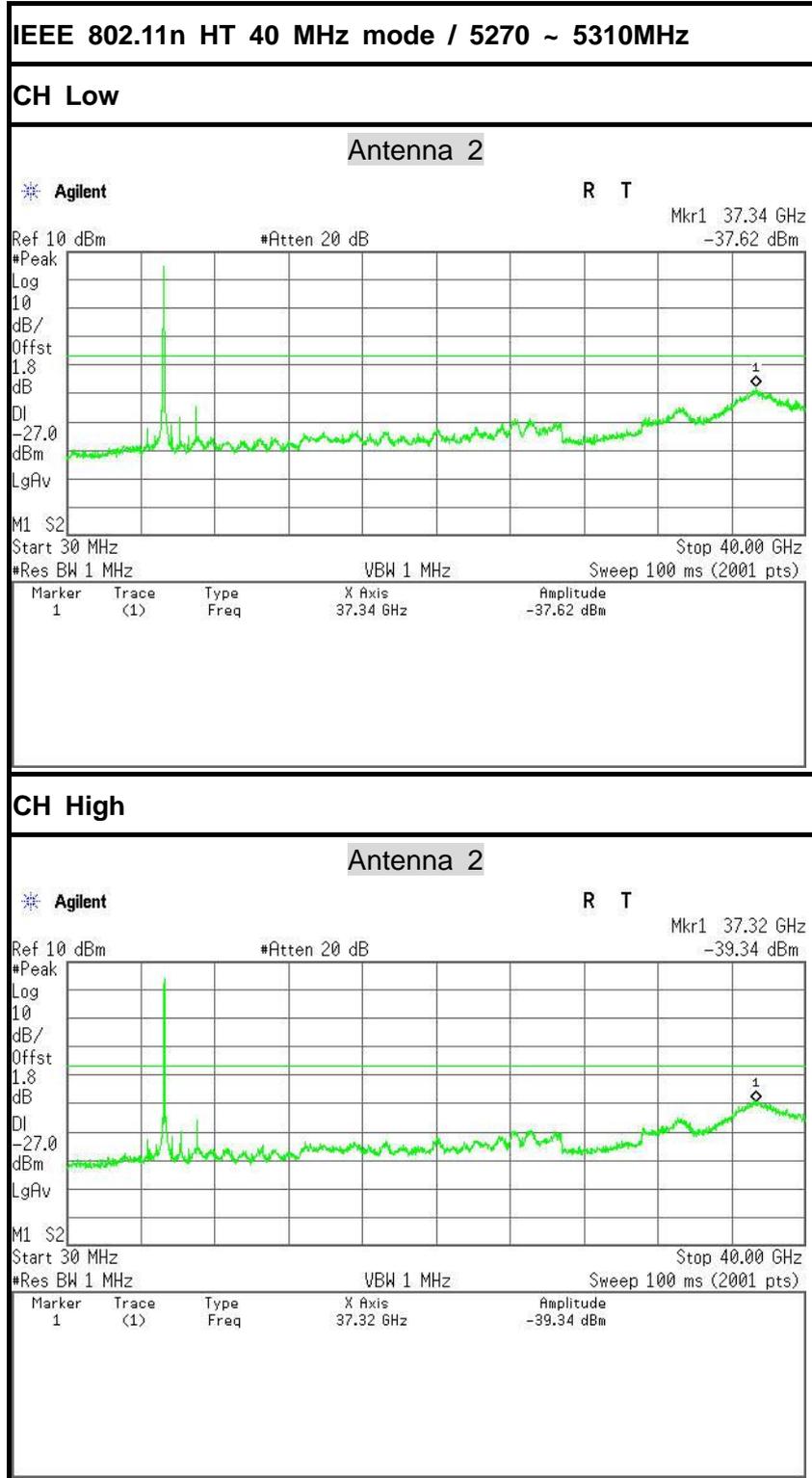
IEEE 802.11n HT 40 MHz mode / 5190 ~ 5230MHz

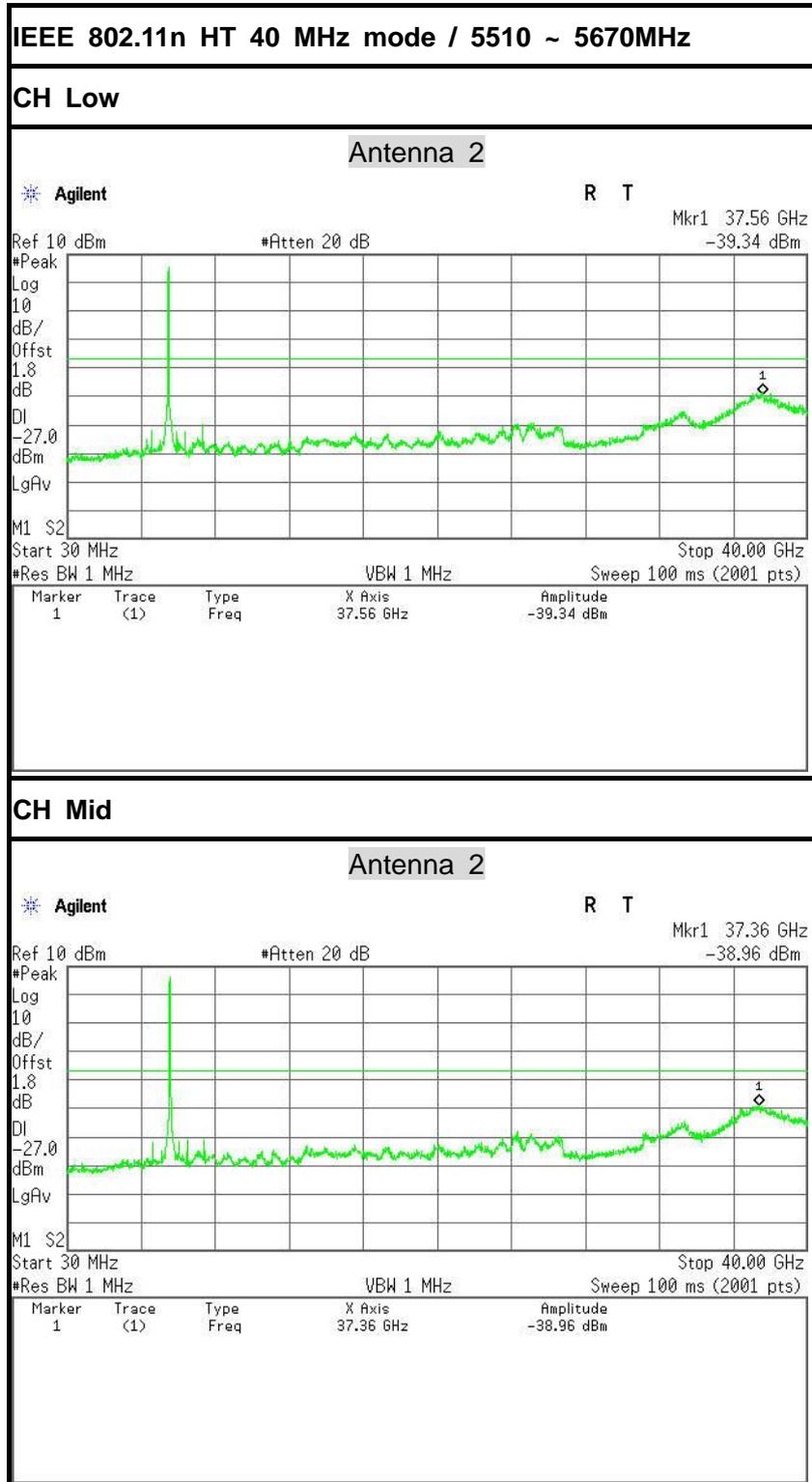
CH Low

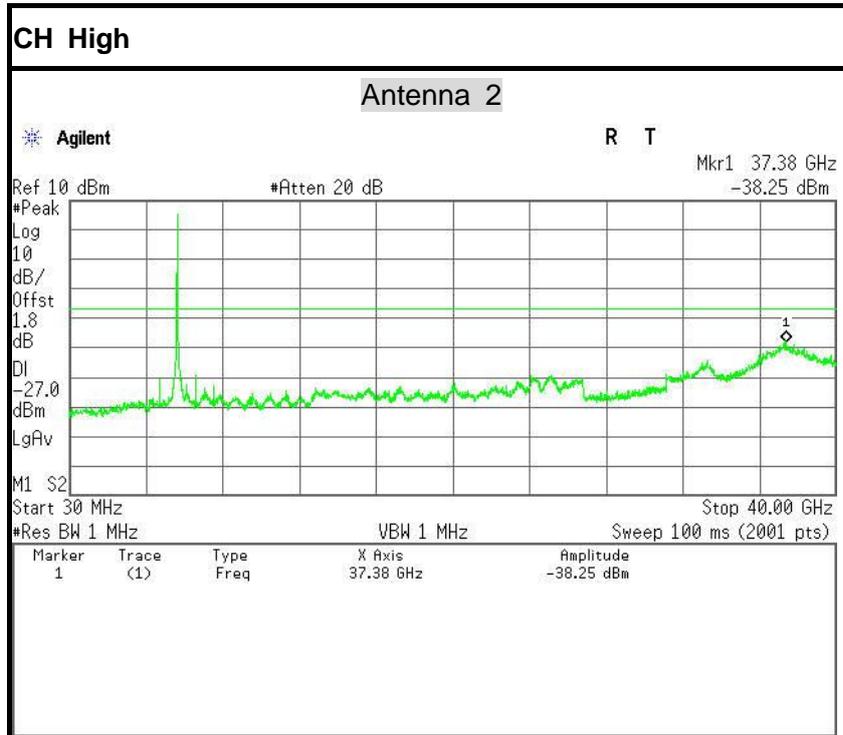


CH High

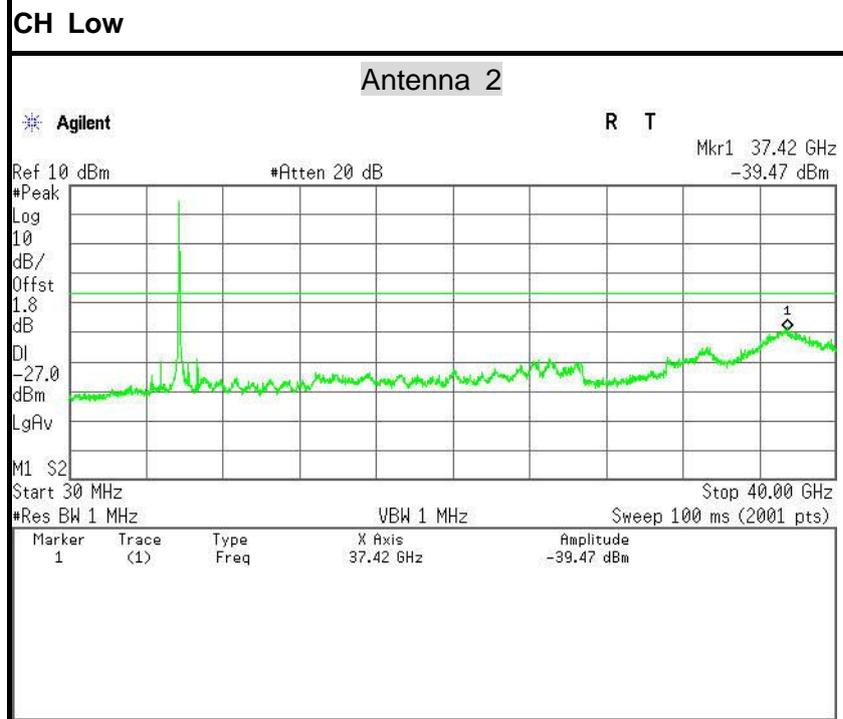


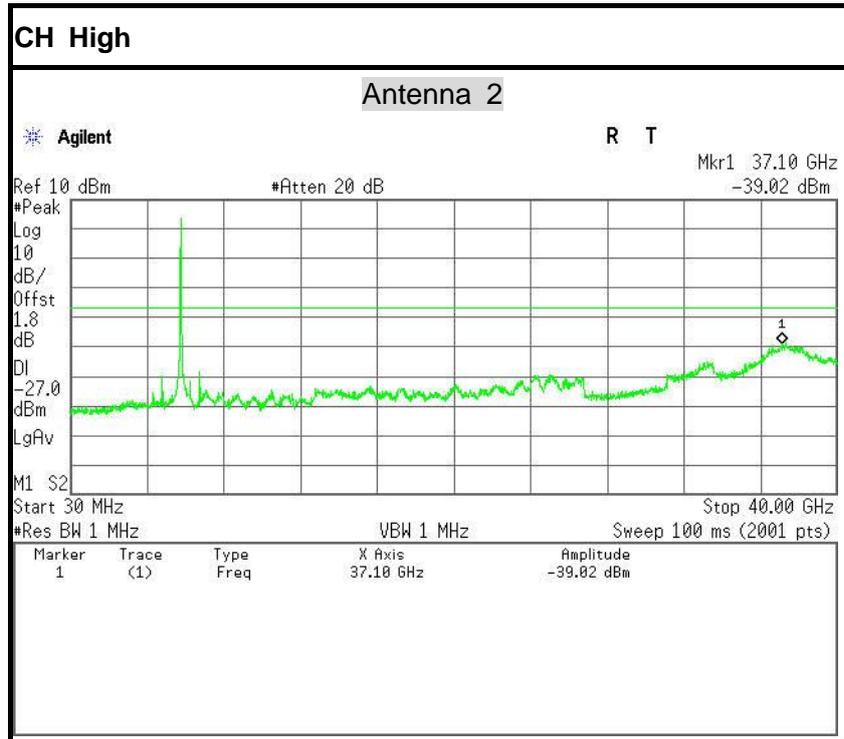


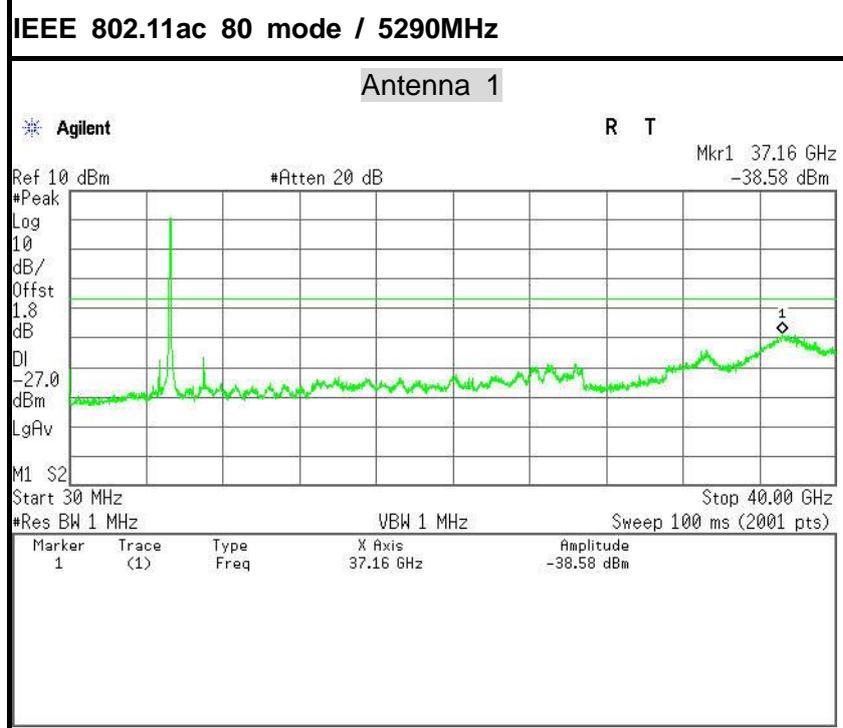
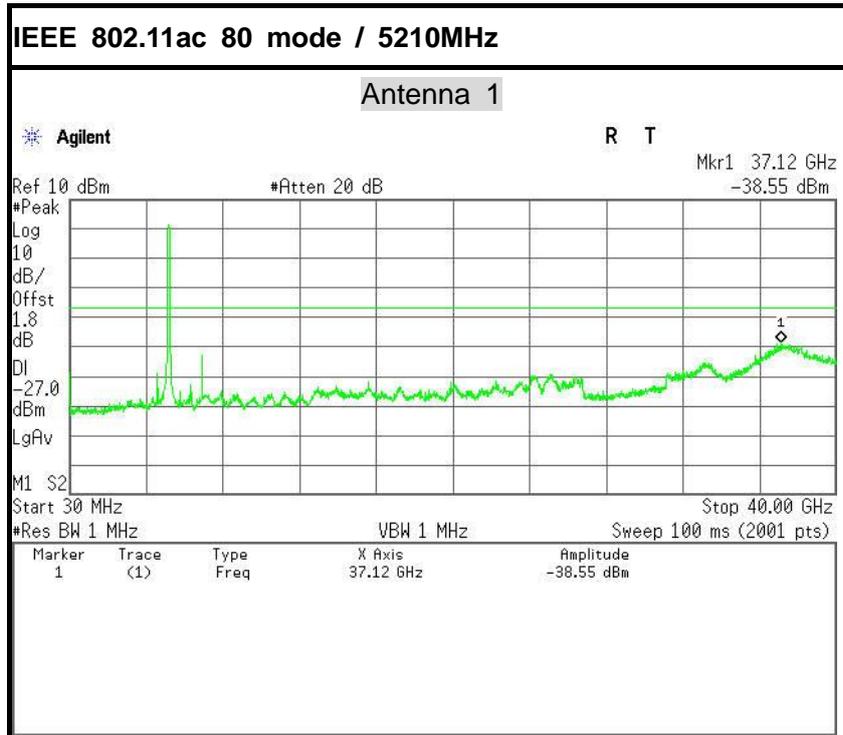


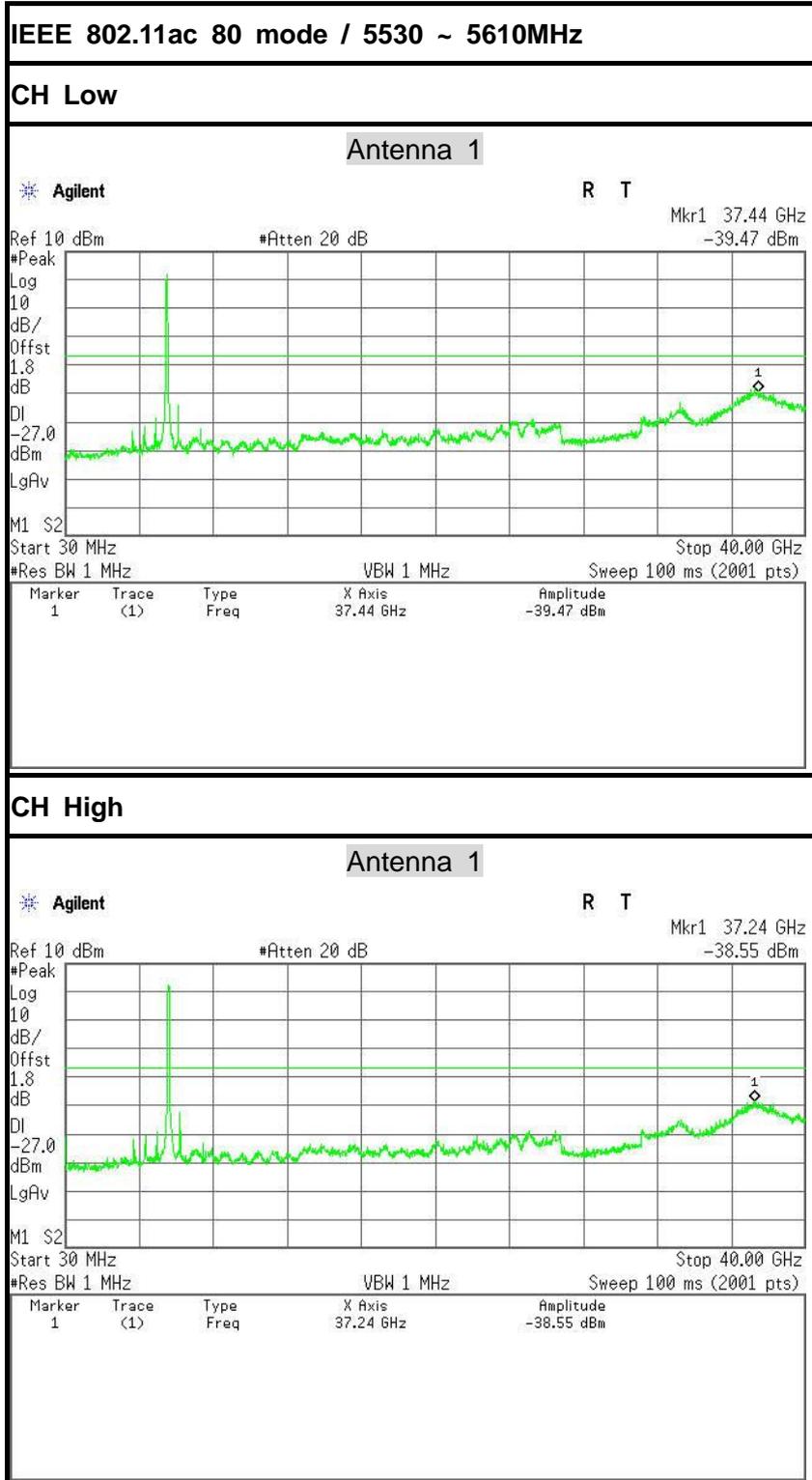


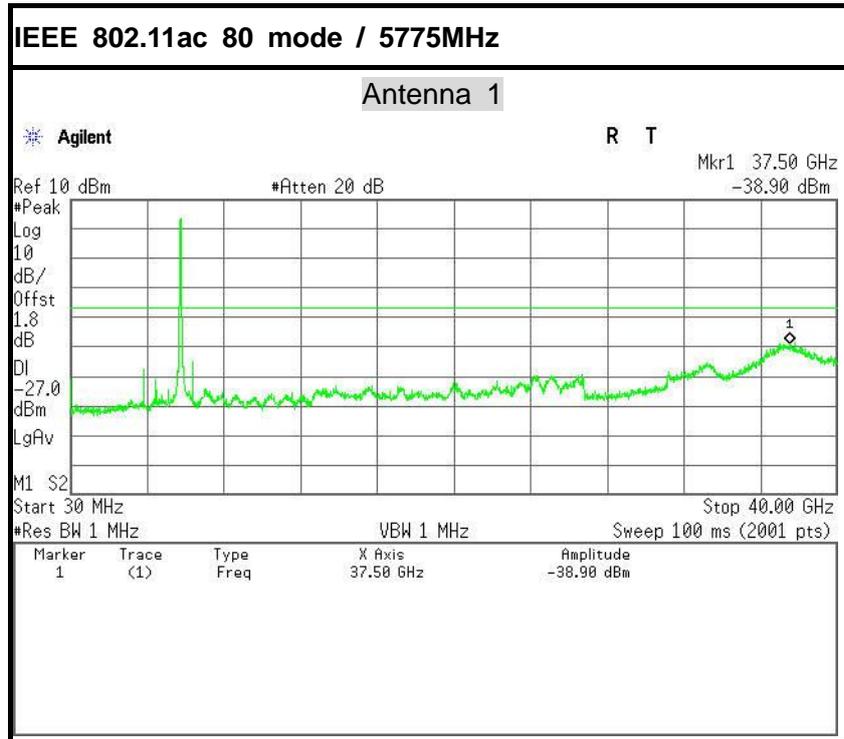
IEEE 802.11n HT 40 MHz mode / 5755 ~ 5795MHz

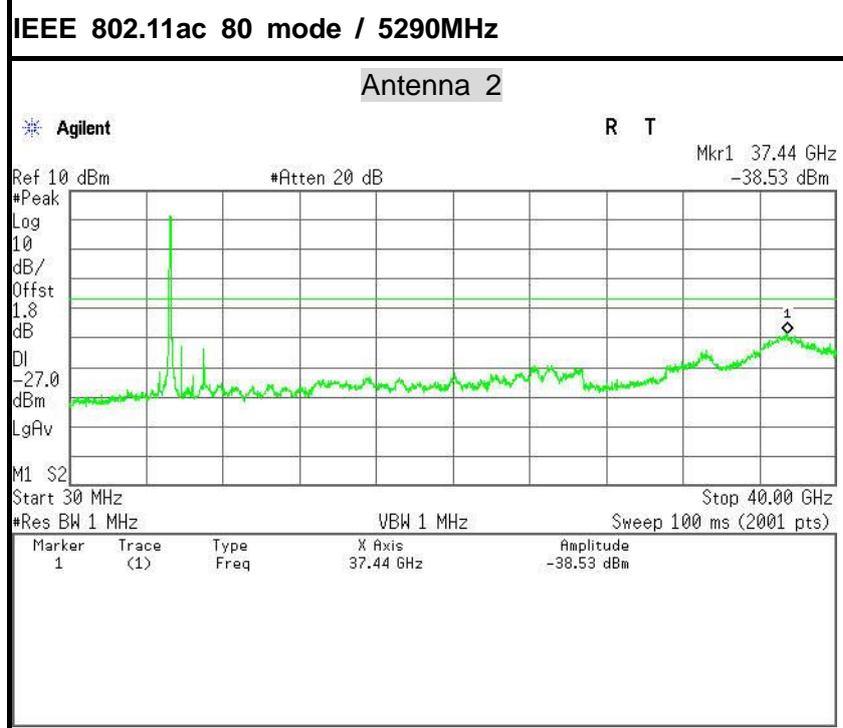
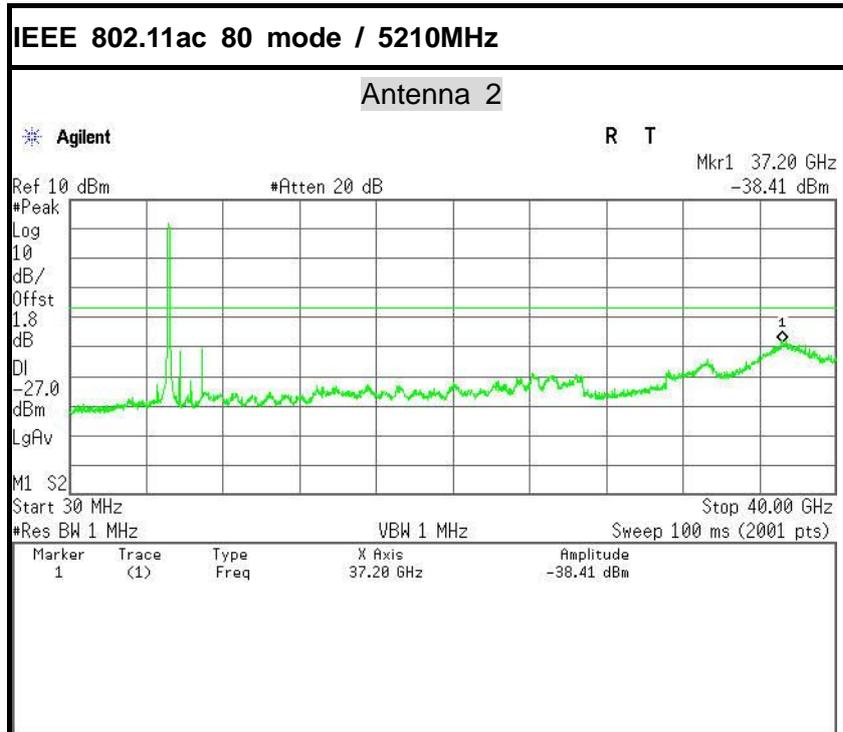


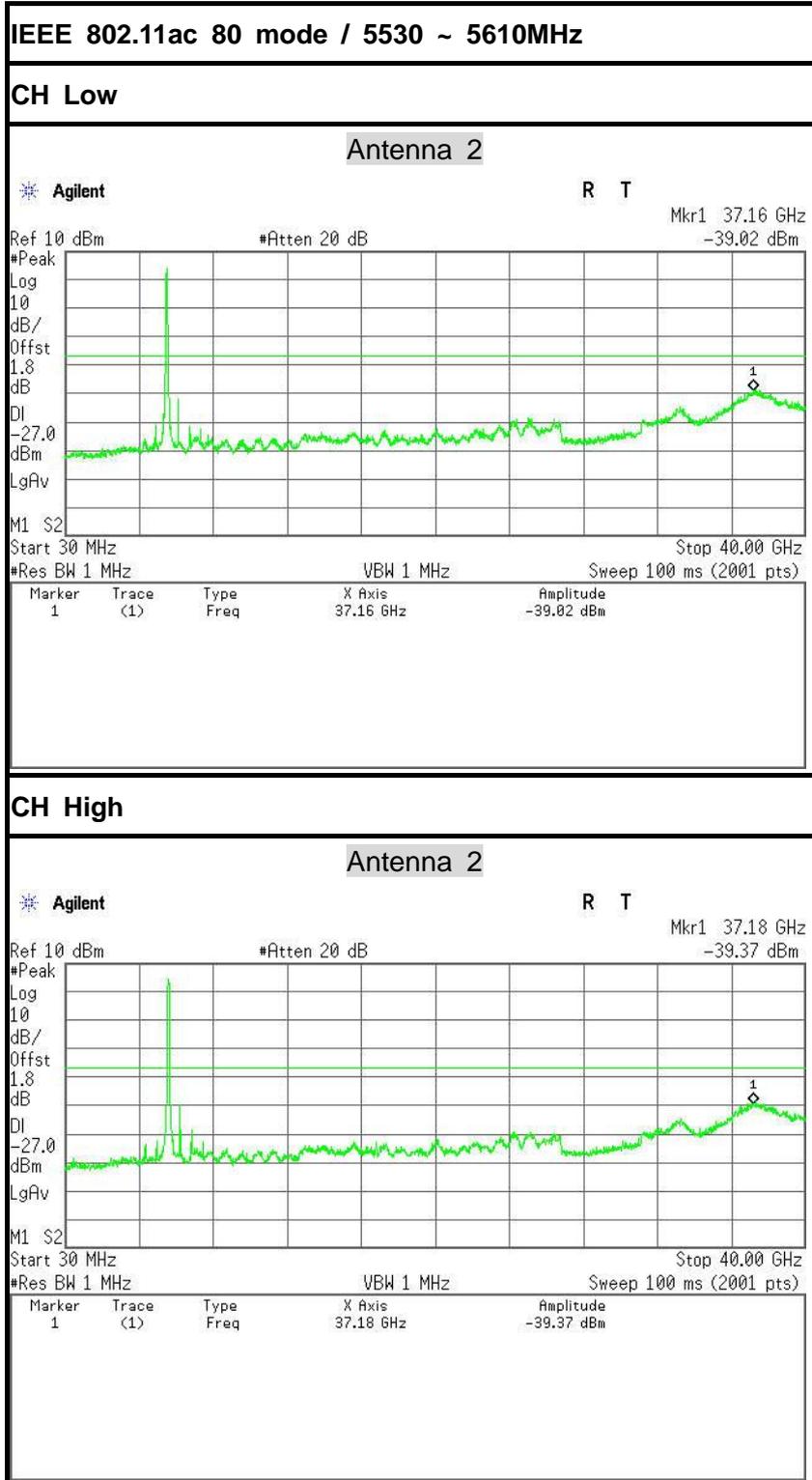


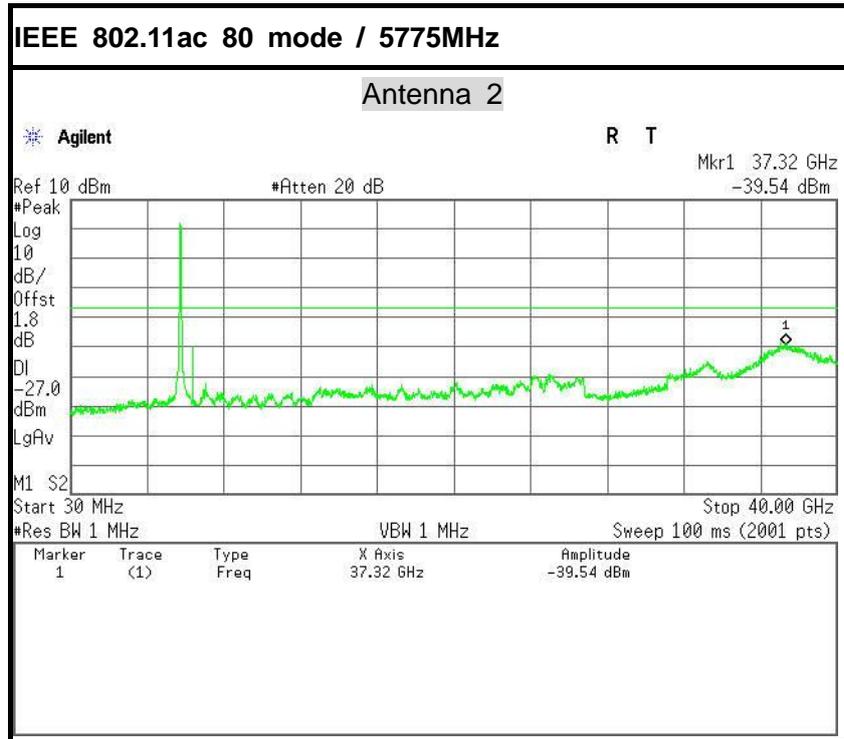














6.8 POWERLINE CONDUCTED EMISSIONS

6.8.1 LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dB μ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

* Decreases with the logarithm of the frequency.

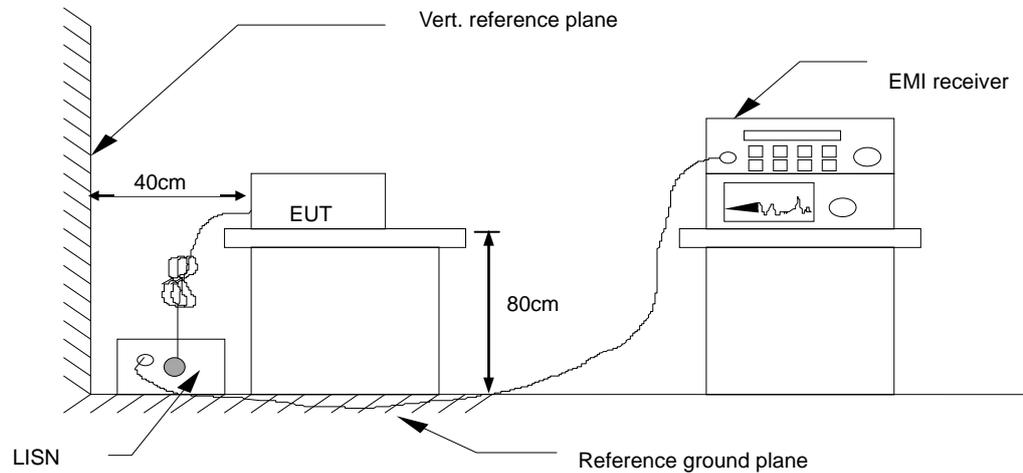
6.8.2 TEST INSTRUMENTS

Conducted Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/28/2015	02/27/2016
LISN(EUT)	ROHDE&SCHWARZ	ENV216	101543-WX	02/28/2015	02/27/2016
LISN	EMCO	3825/2	8901-1459	02/28/2015	02/27/2016
Temp. / Humidity Meter	VICTOR	HTC-1	N/A	02/28/2015	02/27/2016
Test S/W	FARAD	EZ-EMC/ CCS-3A1-CE			

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. N.C.R = No Calibration Request.

6.8.3 TEST CONFIGURATION



6.8.4 TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

6.8.5 DATA SAMPLE

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
 Result = Quasi-peak Reading/ Average Reading + Factor
 Limit = Limit stated in standard
 Margin = Result (dBuV) – Limit (dBuV)