

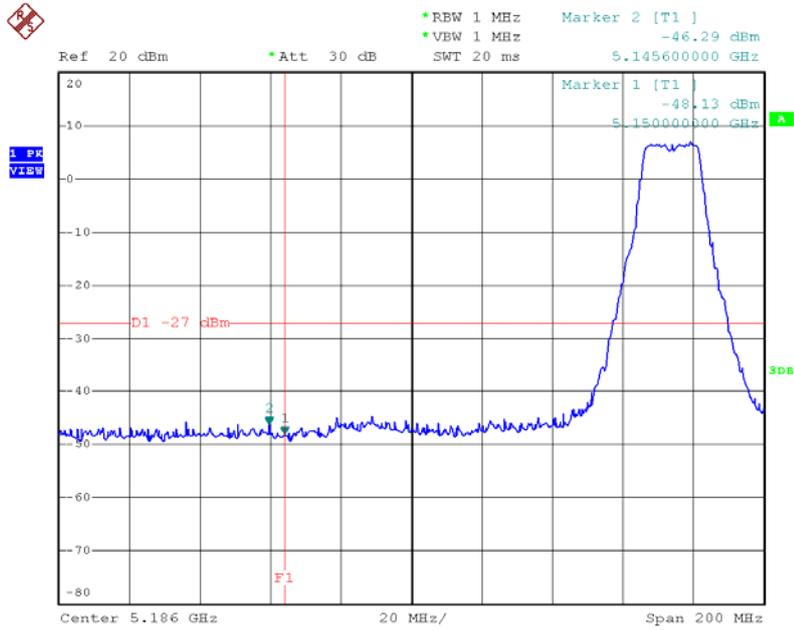


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX A Mode/ CH52, CH56 , CH60		

Channel of Worst Data: CH52			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5145.60	-46.29	5366.00	-45.58
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

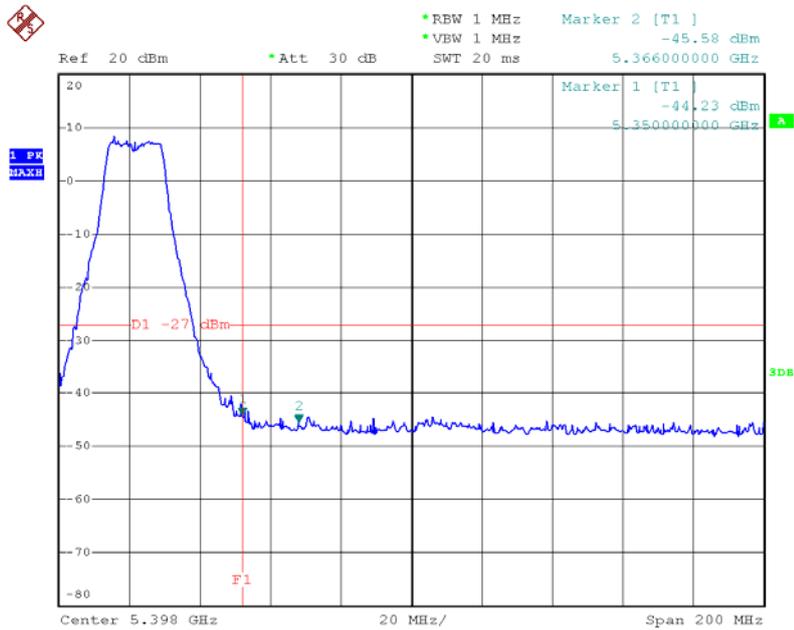


TX mode CH52



Date: 20.APR.2012 00:16:21

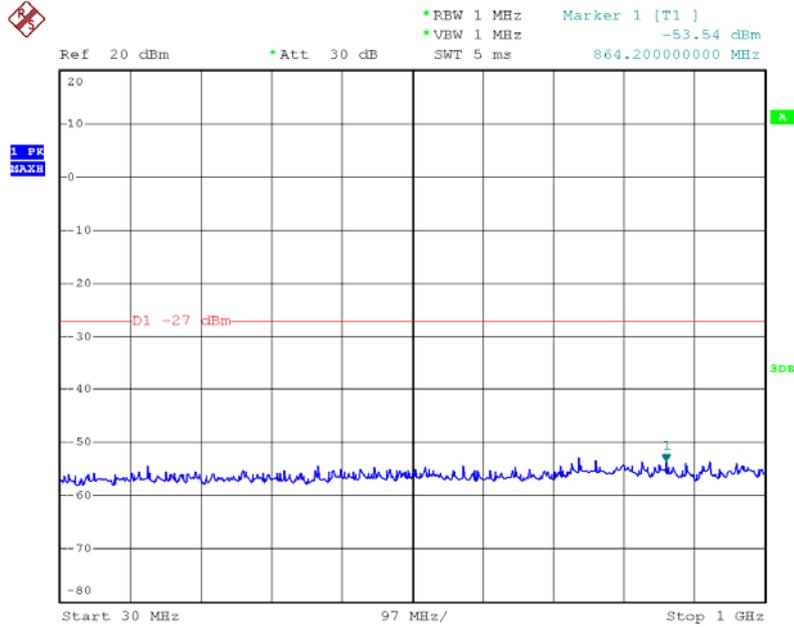
TX mode CH64



Date: 20.APR.2012 00:08:09

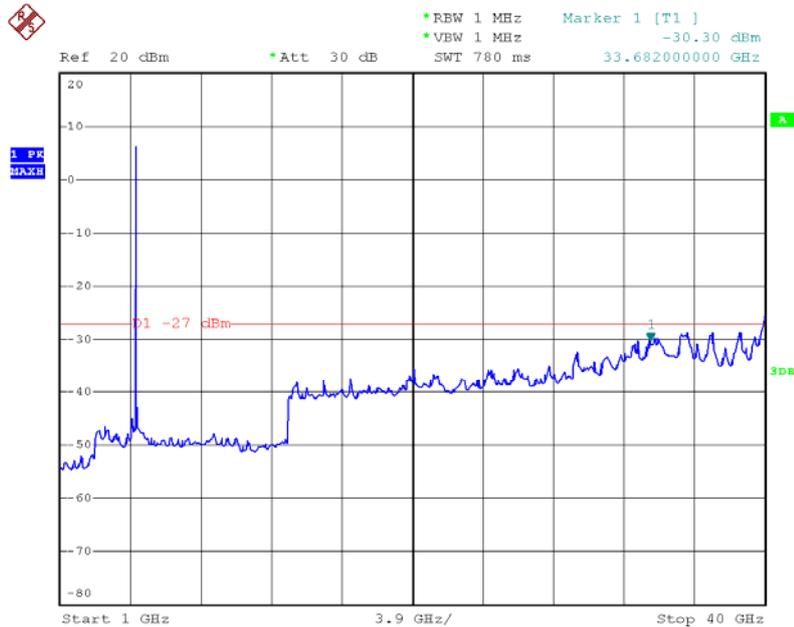


TX mode CH52 (30M~1000MHz)

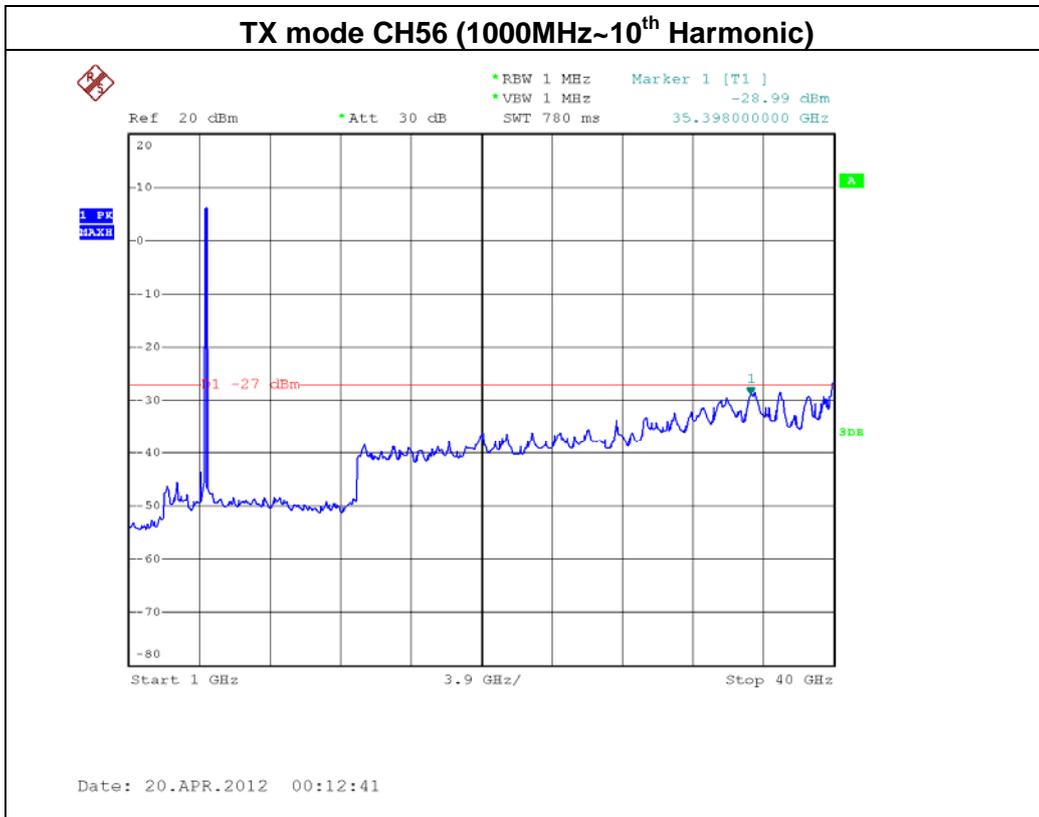
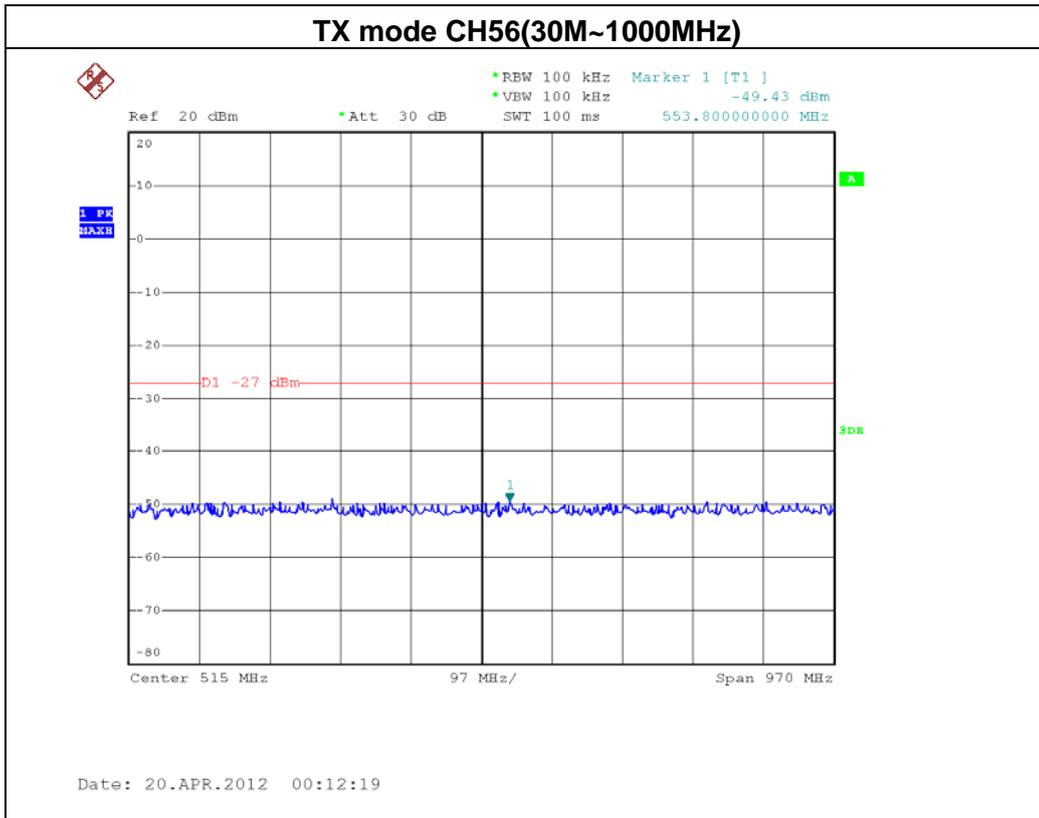


Date: 20.APR.2012 00:13:48

TX mode CH52(1000MHz~10th Harmonic)

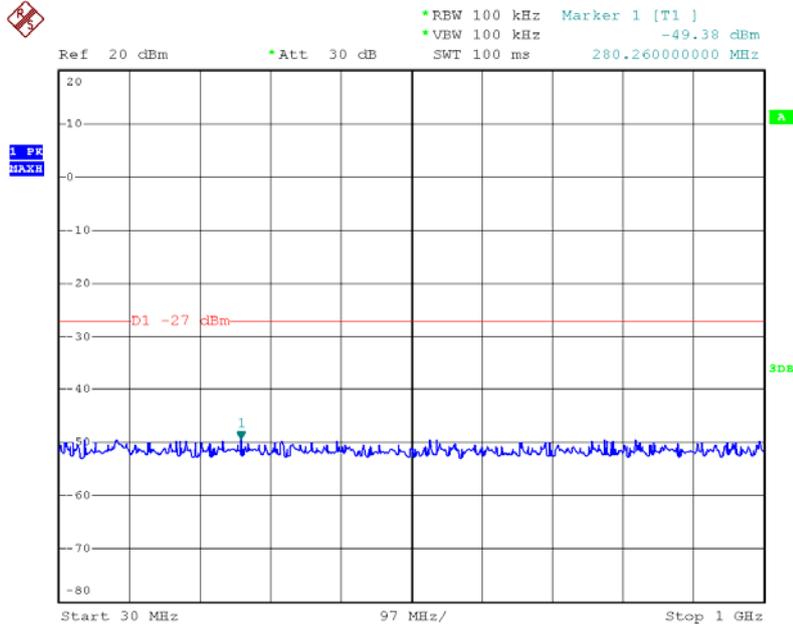


Date: 20.APR.2012 00:13:38



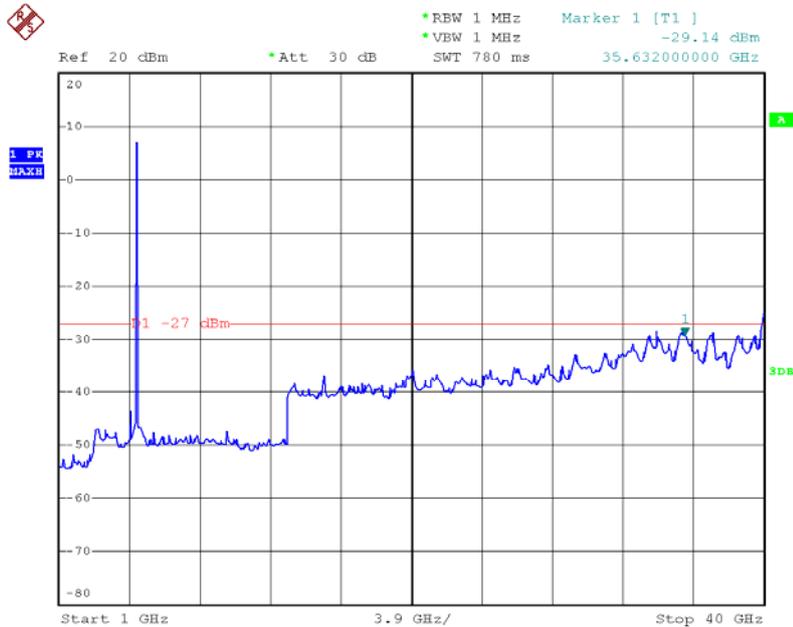


TX mode CH64(30M~1000MHz)



Date: 20.APR.2012 00:08:49

TX mode CH64(1000MHz~10th Harmonic)



Date: 20.APR.2012 00:08:29

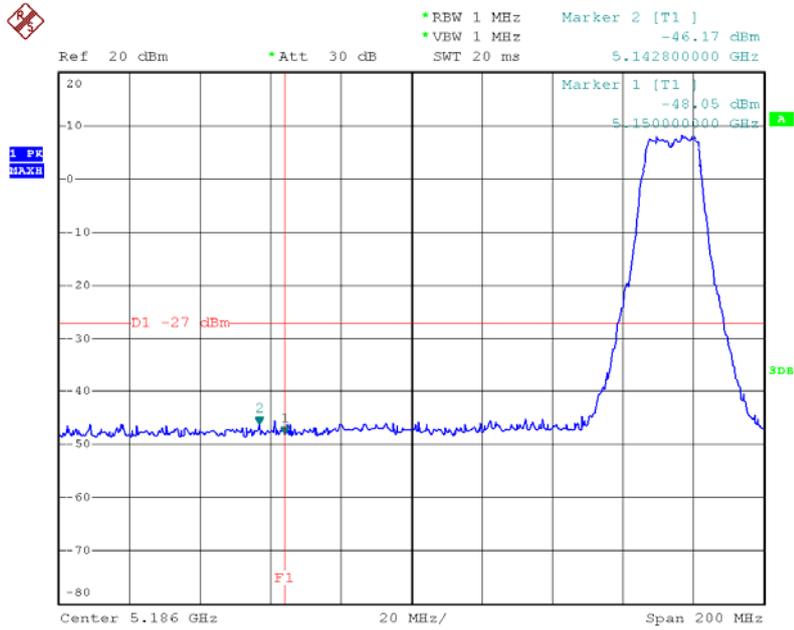


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N20 Mode/ CH52, CH56 , CH64 (ANT 1)		

Channel of Worst Data: CH52			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5142.00	-46.17	5400.4	-45.25
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

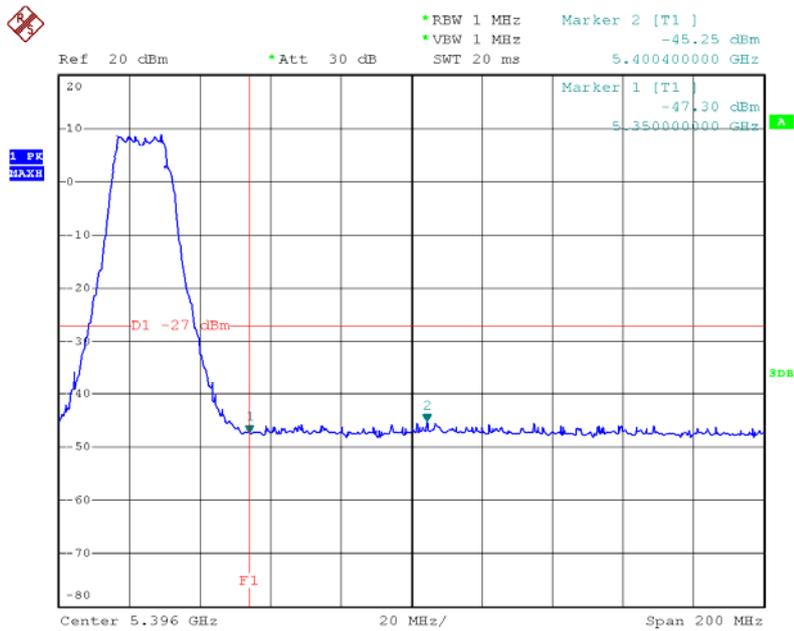


TX mode CH52

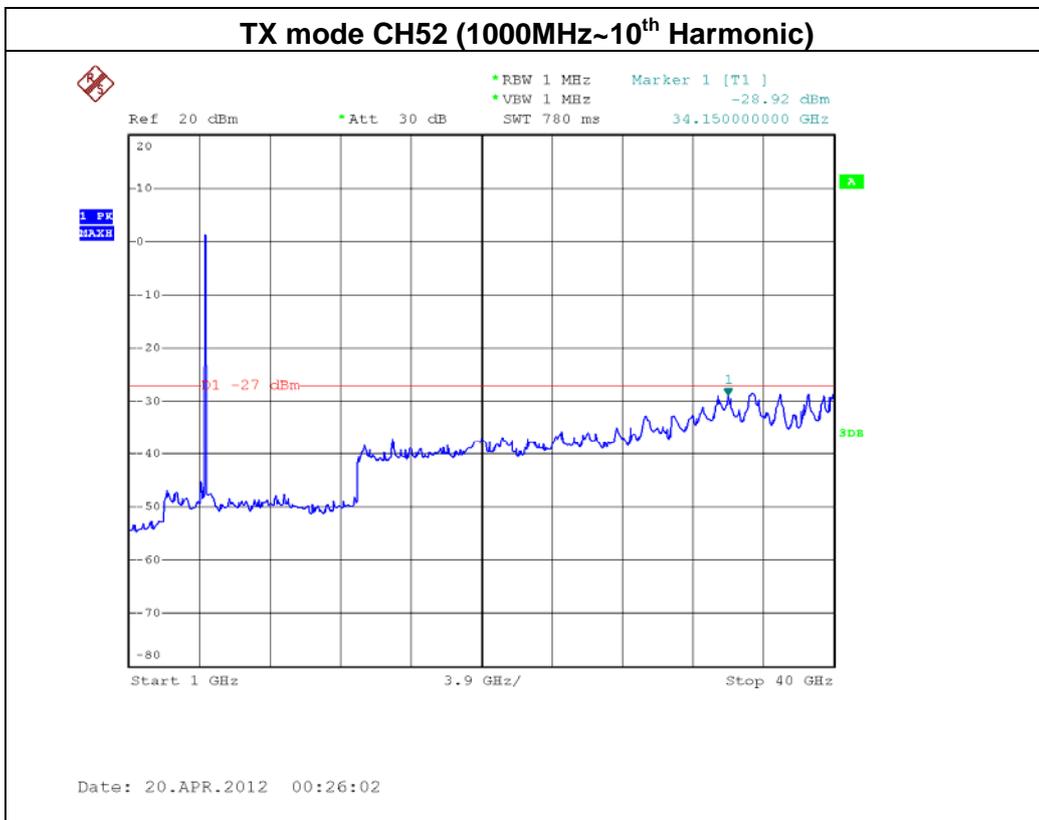
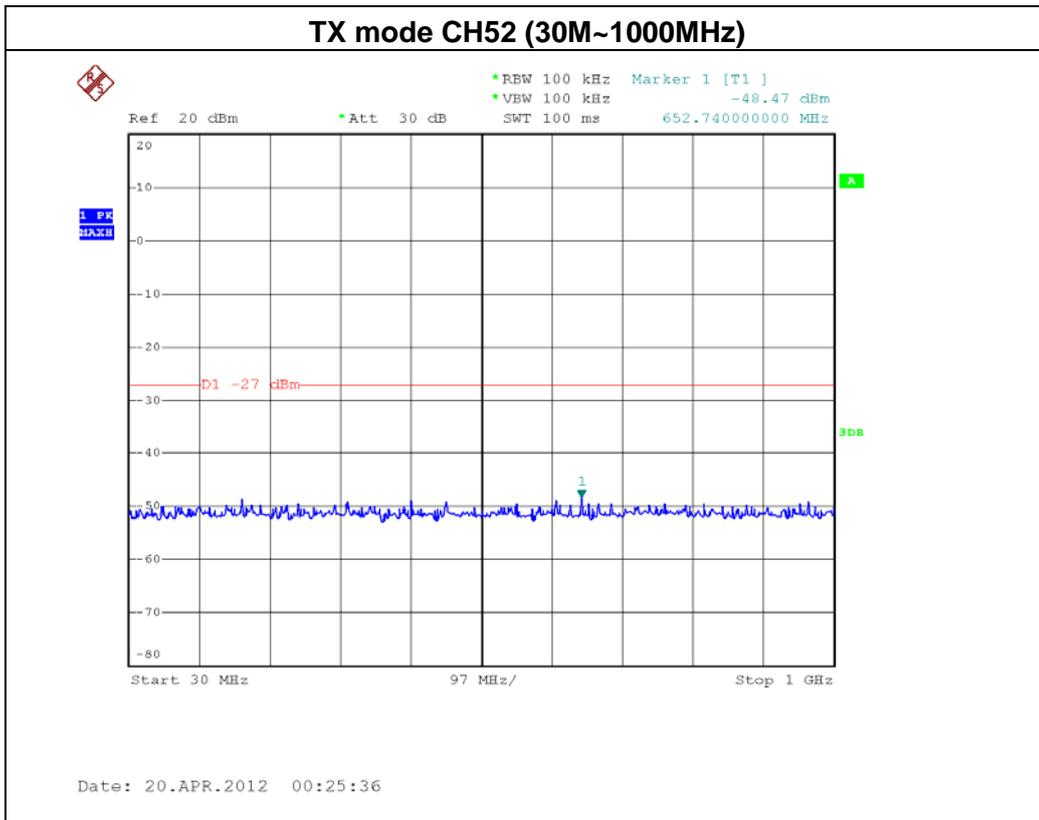


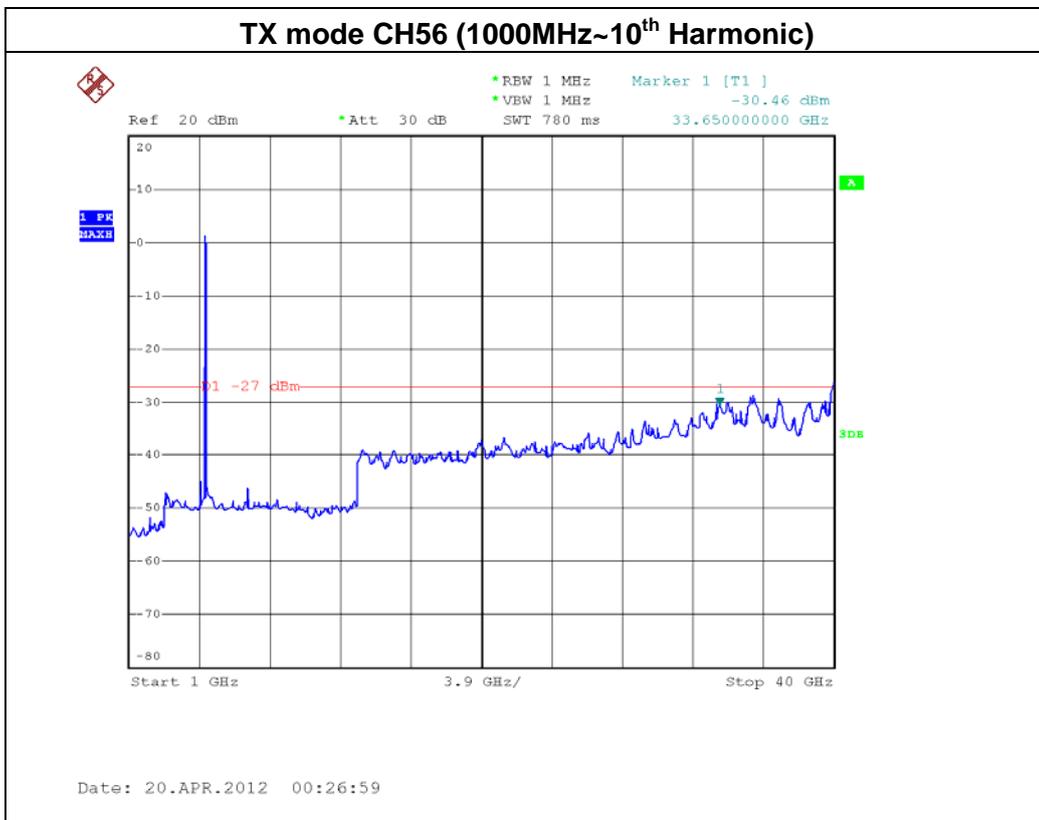
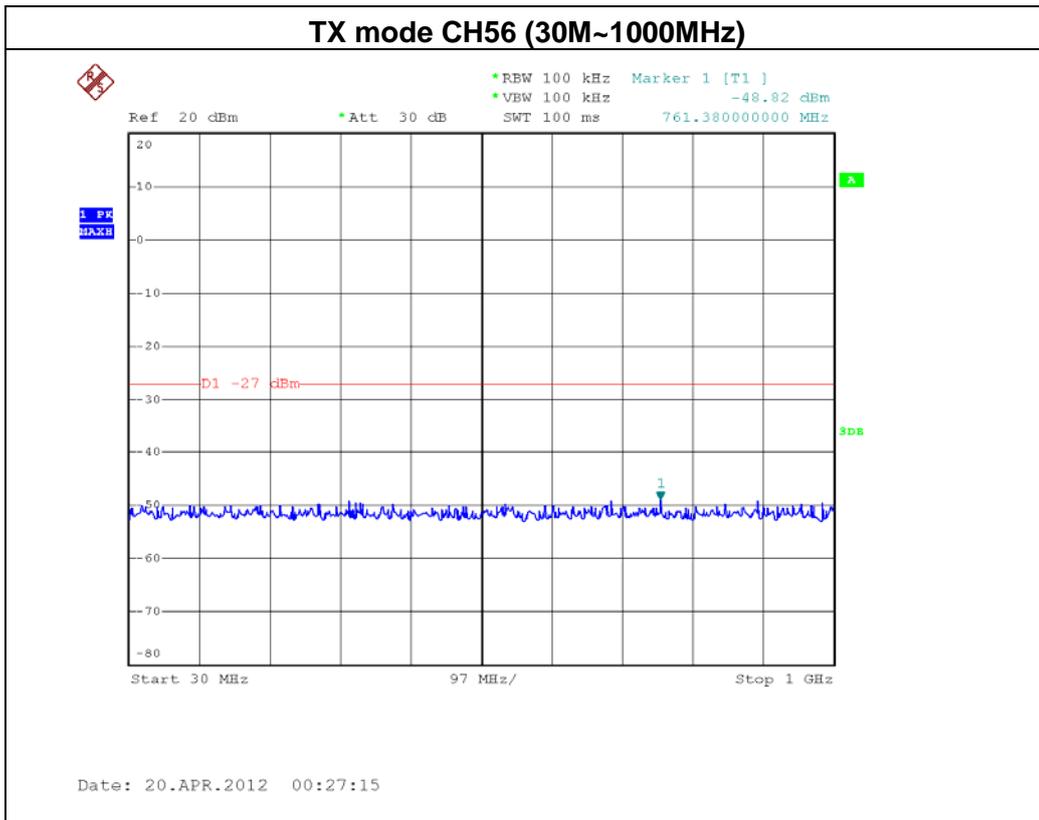
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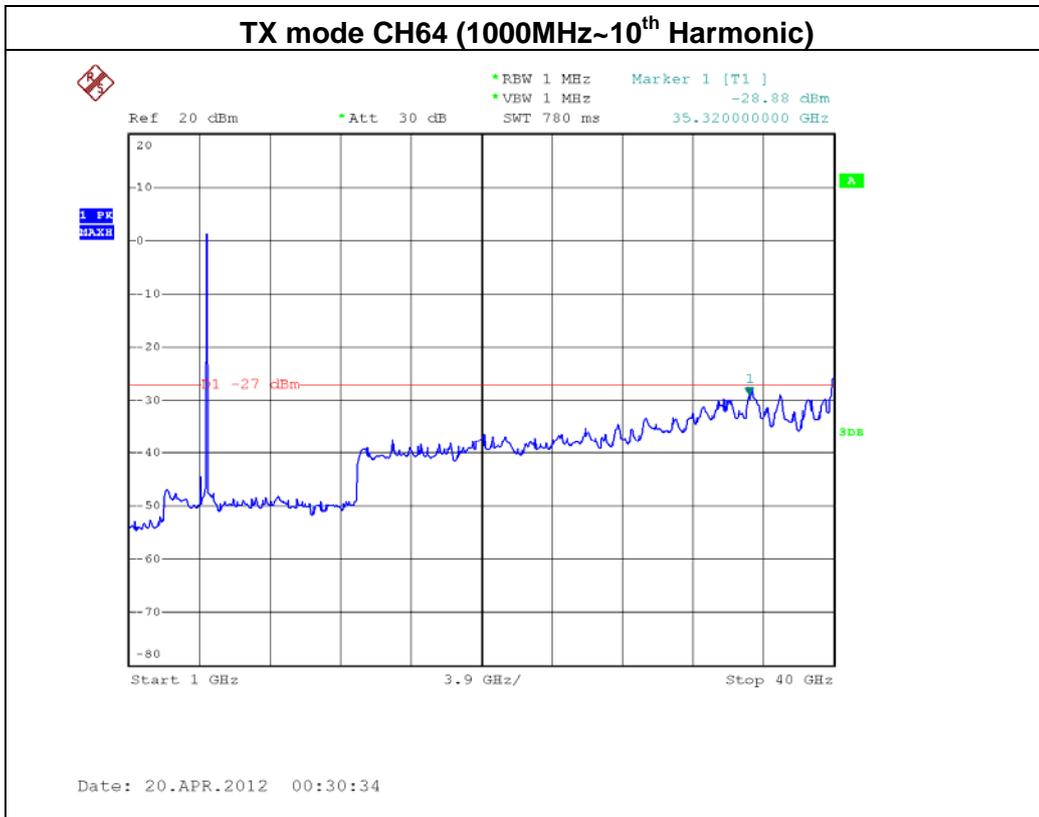
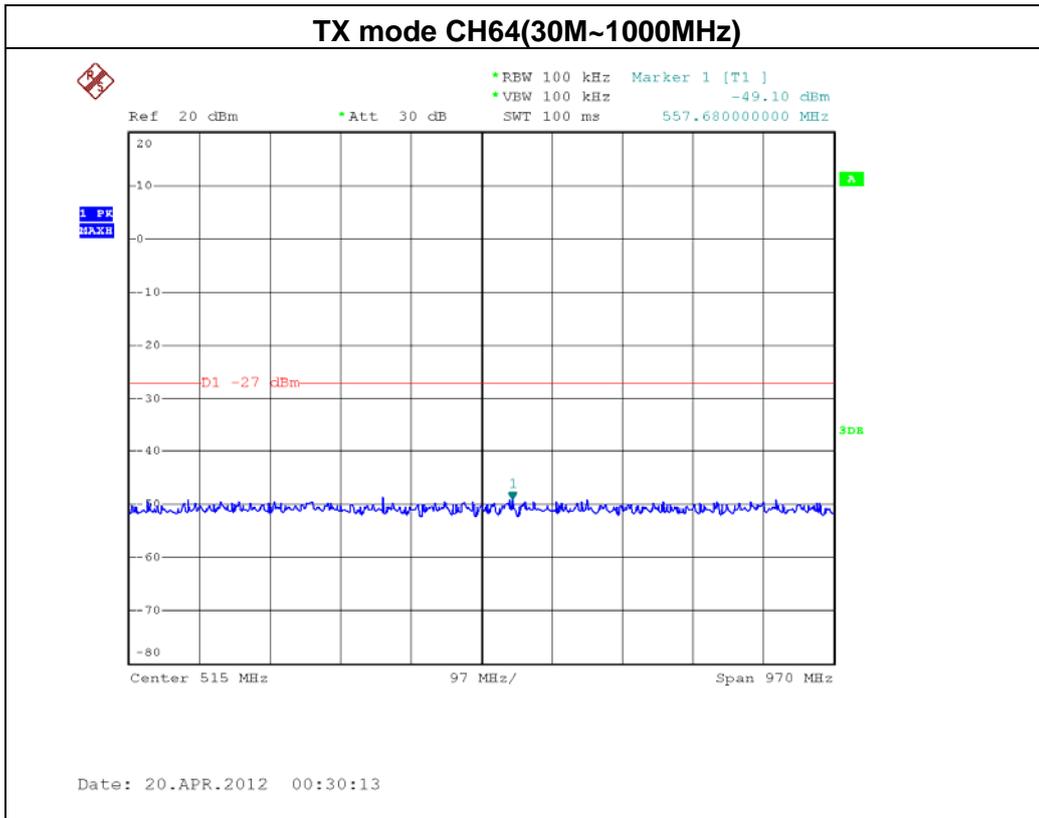
TX mode CH64



Date: 20.APR.2012 00:31:23









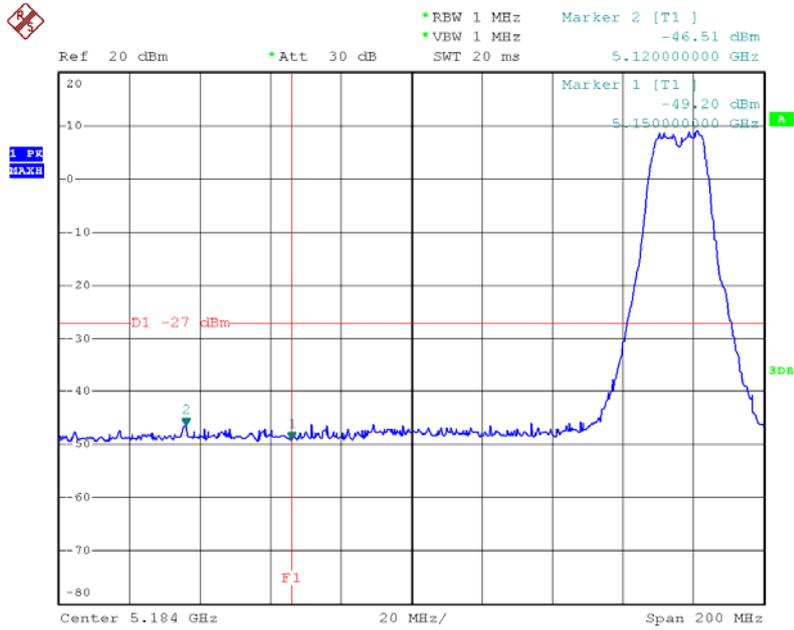
Neutron Engineering Inc.

EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N20 Mode/ CH52, CH56 , CH64 (ANT 2)		

Channel of Worst Data: CH52			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5120.00	-46.51	5357.20	-45.85
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

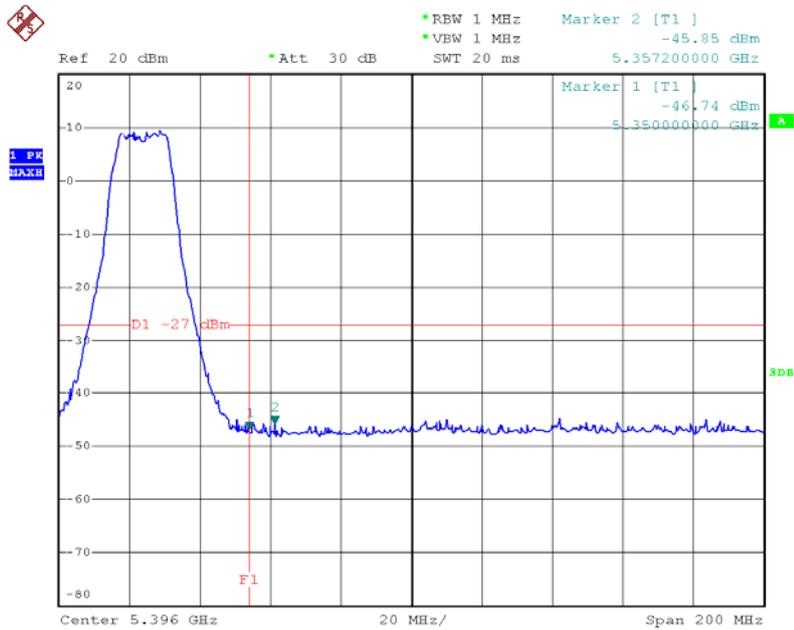


TX mode CH52

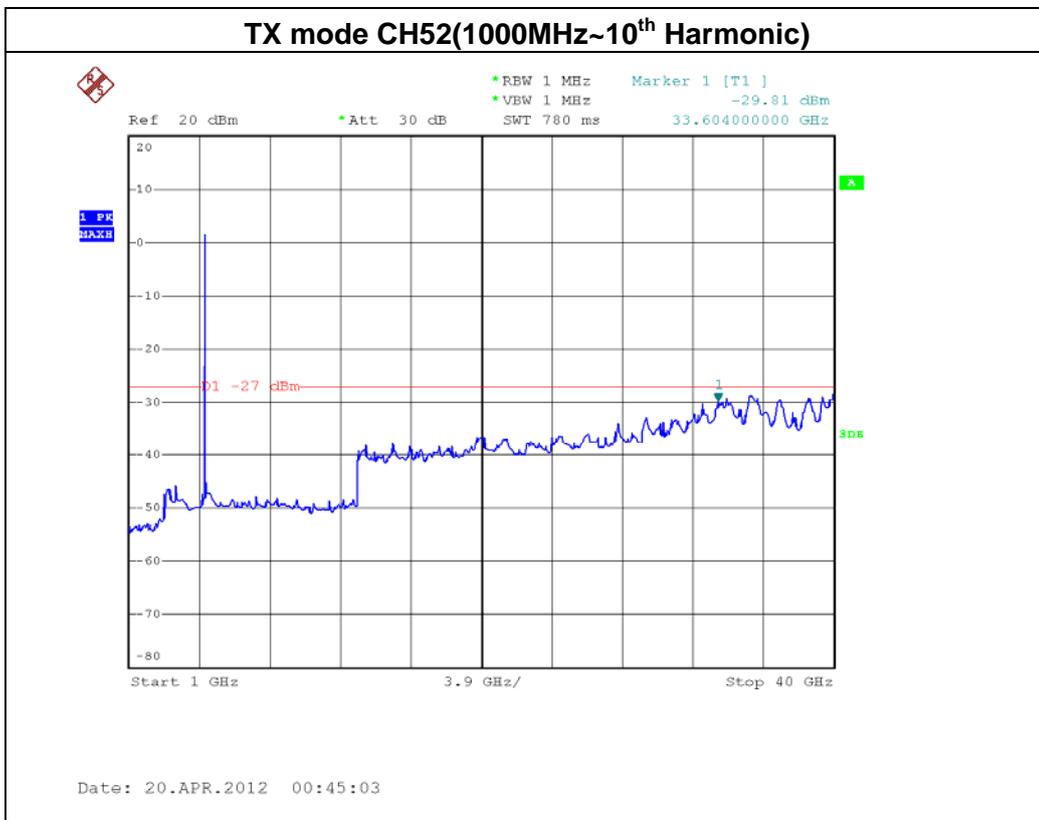
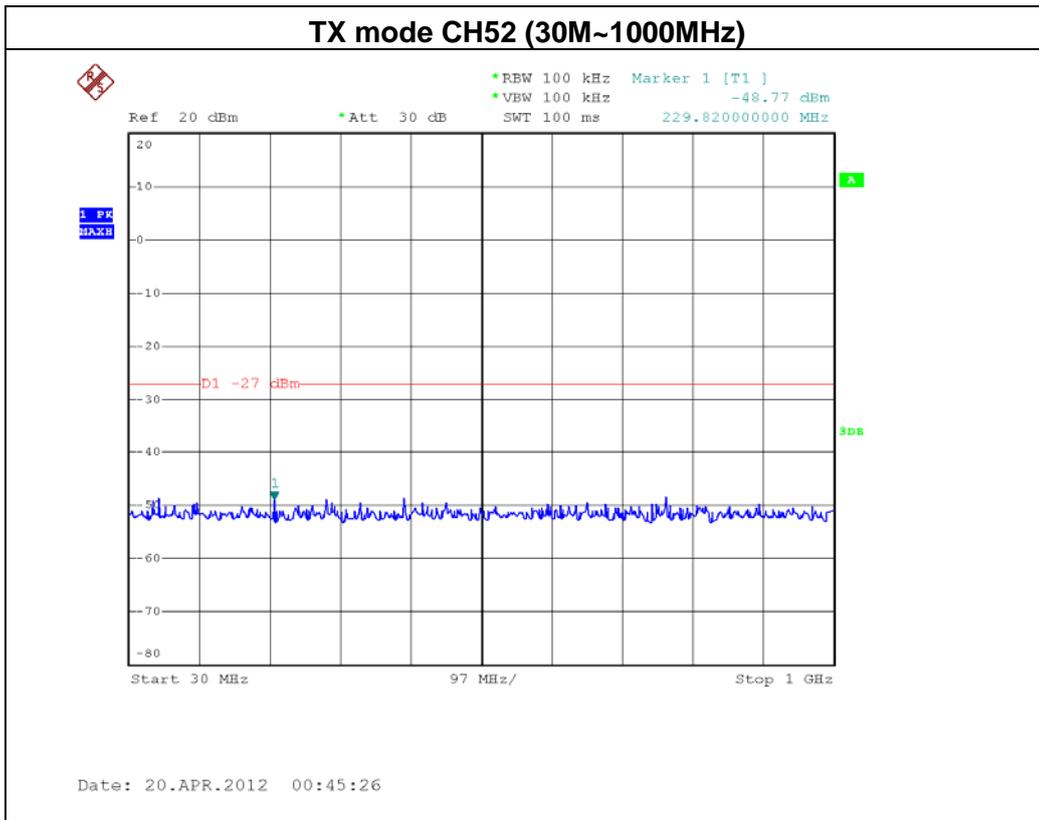


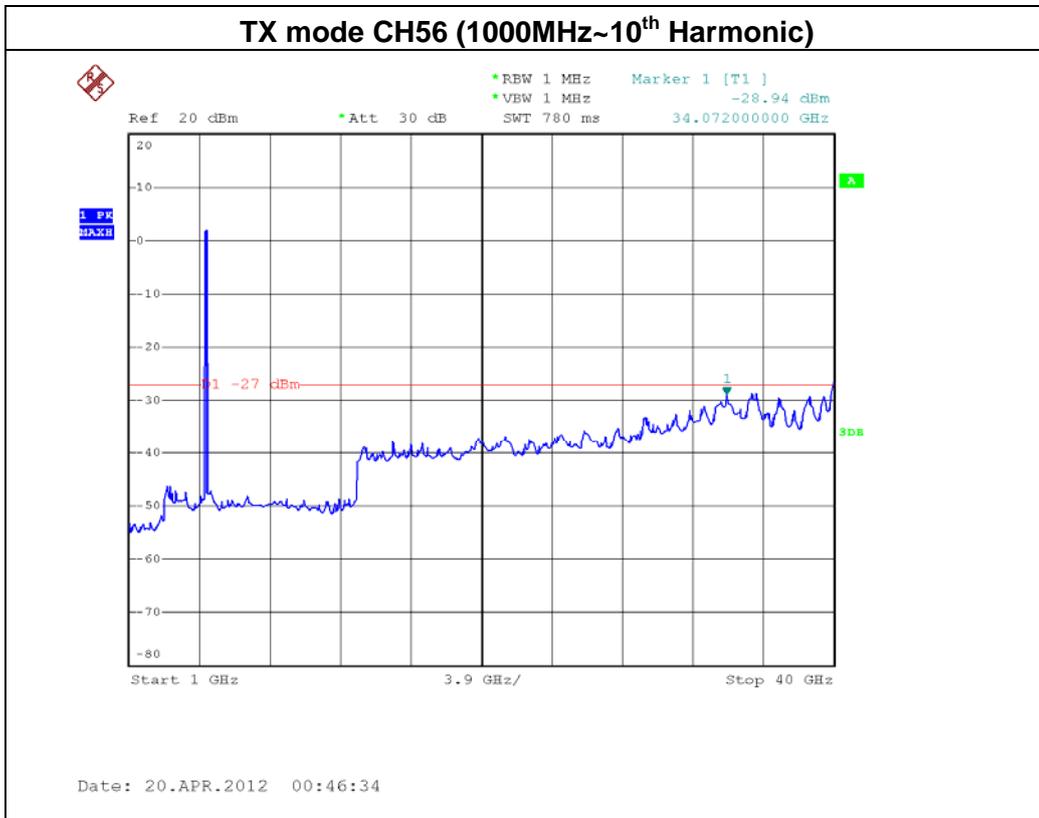
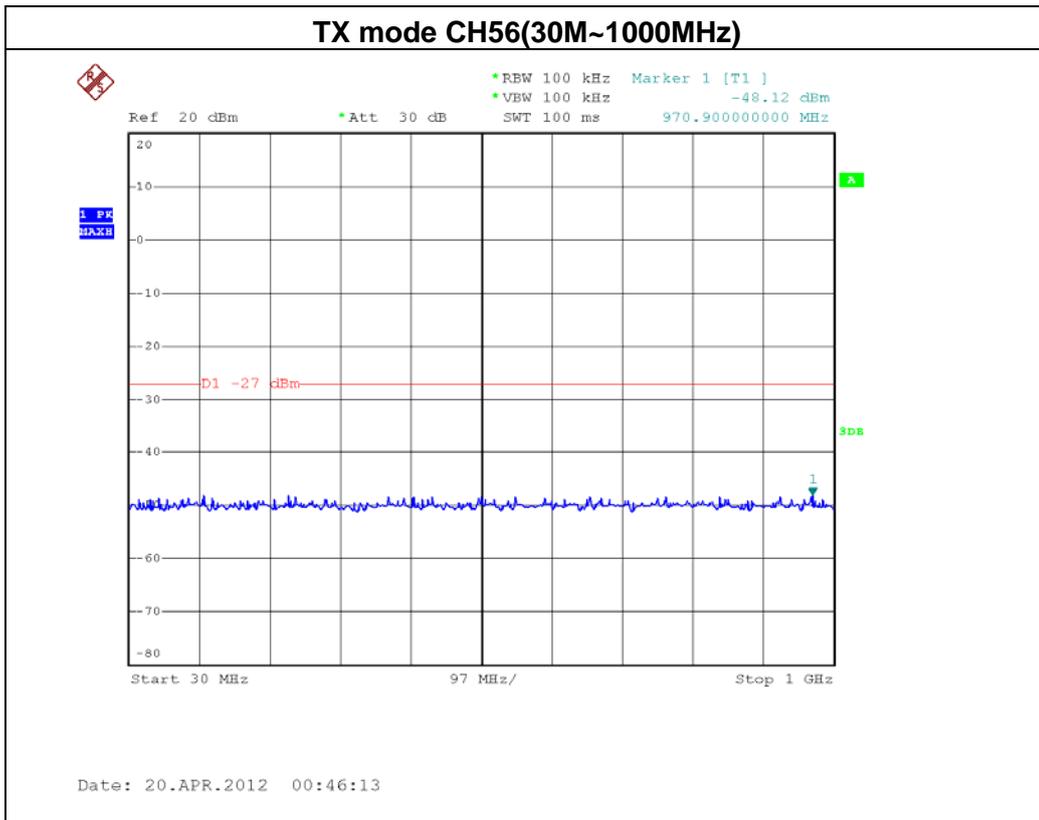
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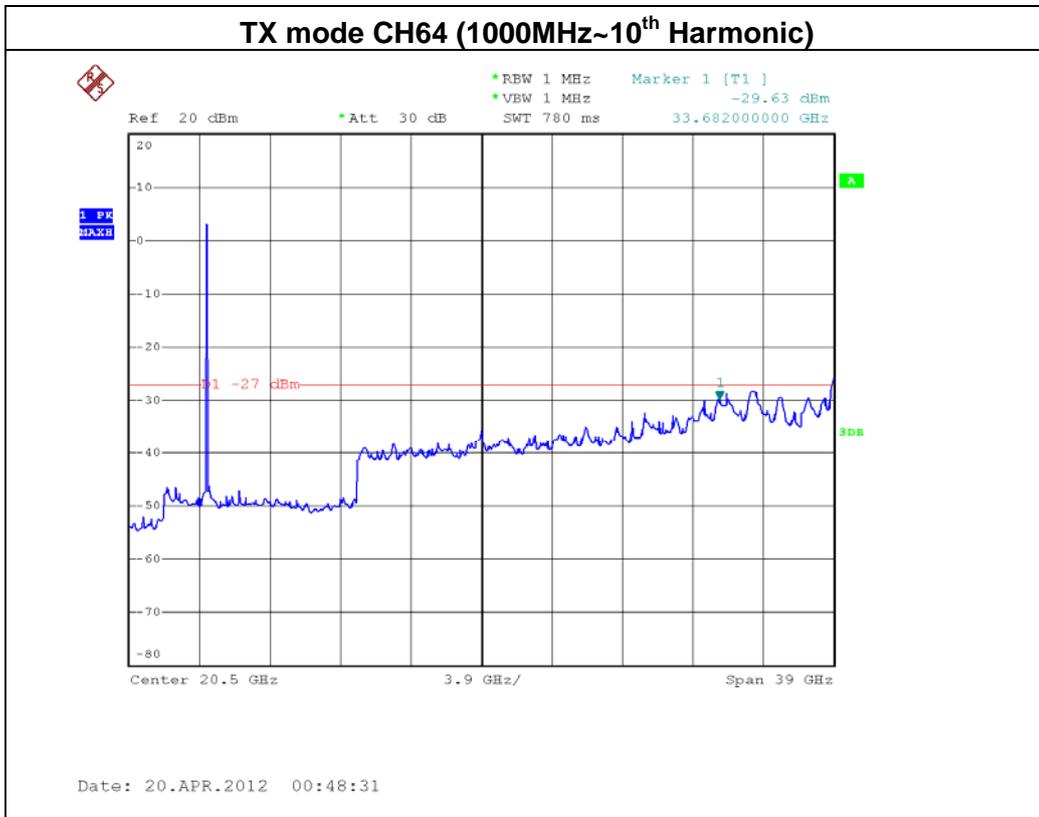
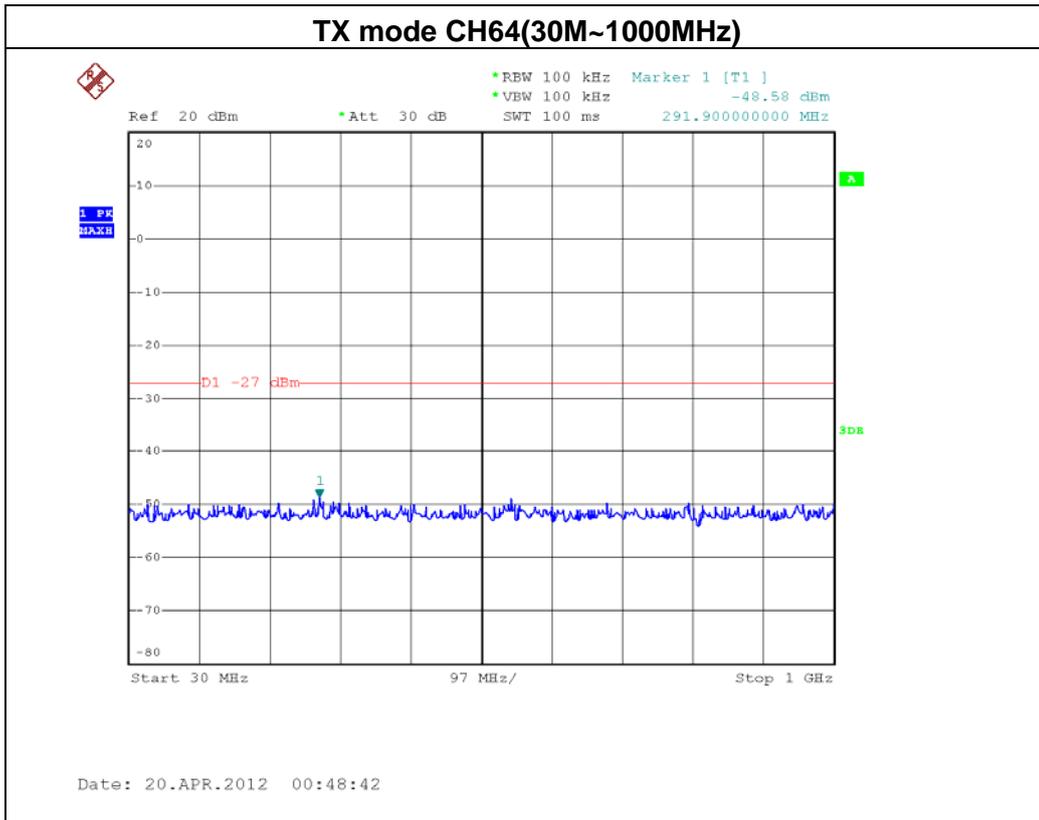
TX mode CH64



Date: 20.APR.2012 00:49:26







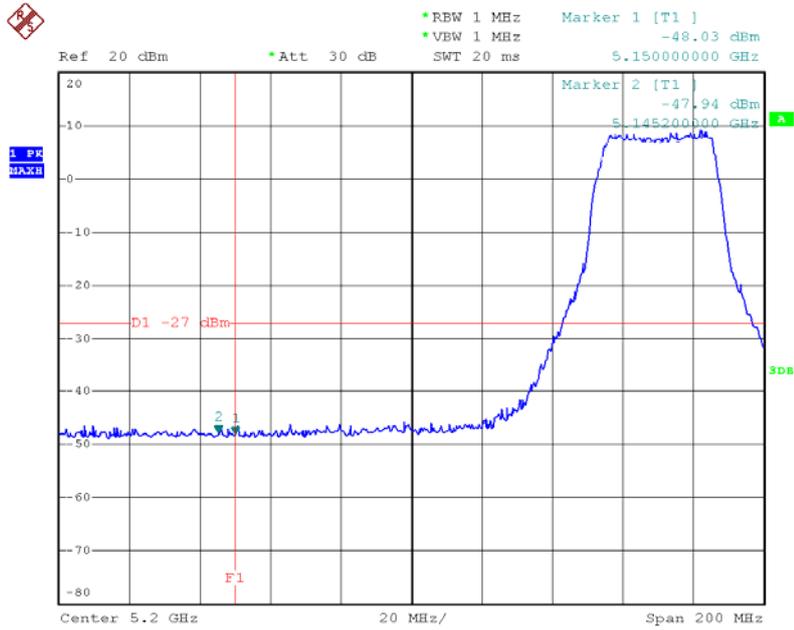


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N40 Mode/ CH54, CH62 (ANT 1)		

Channel of Worst Data: CH54			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5145.20	-47.94	5350.00	-42.07
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

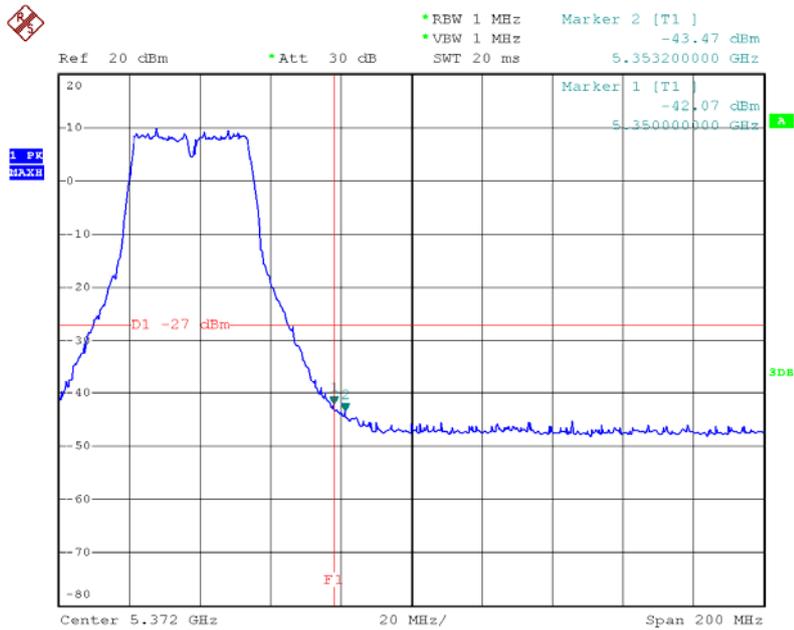


TX mode CH54

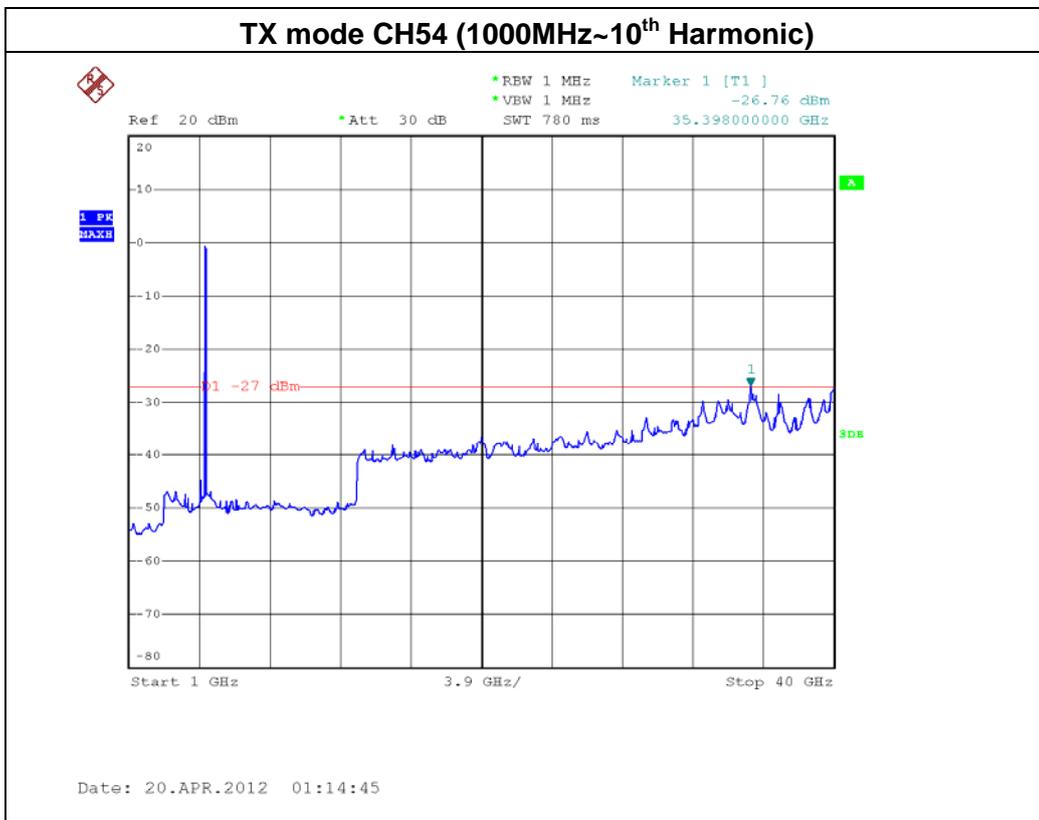
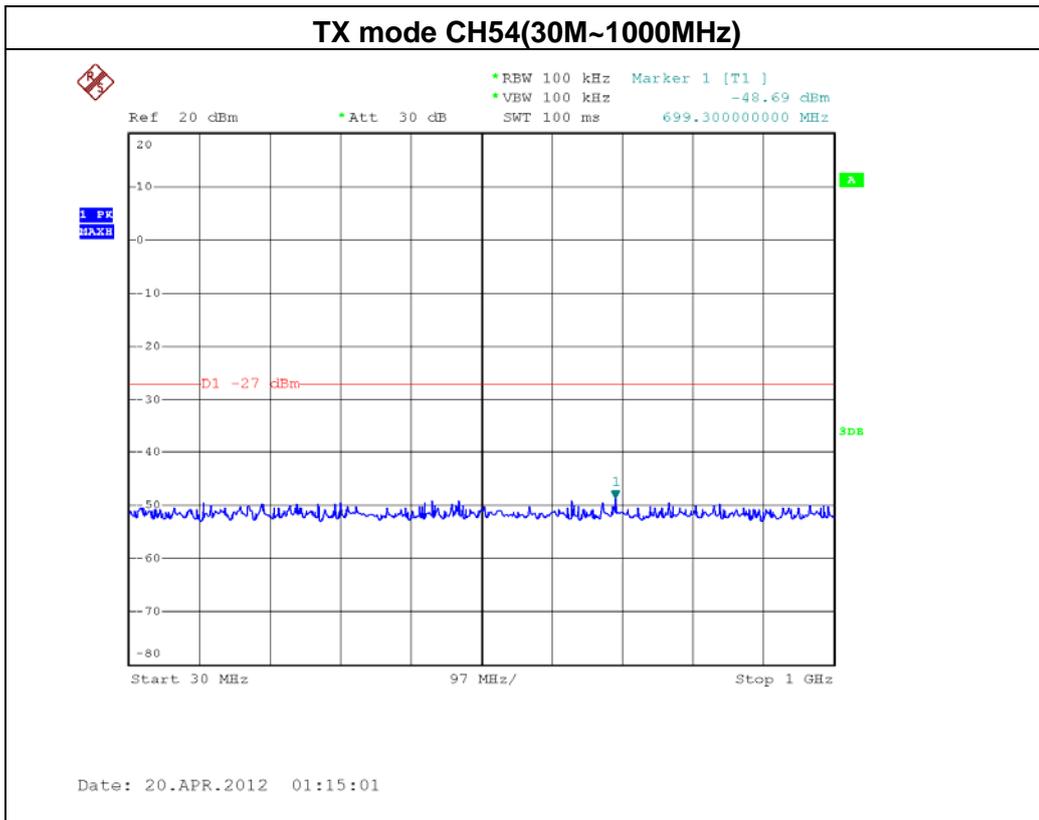


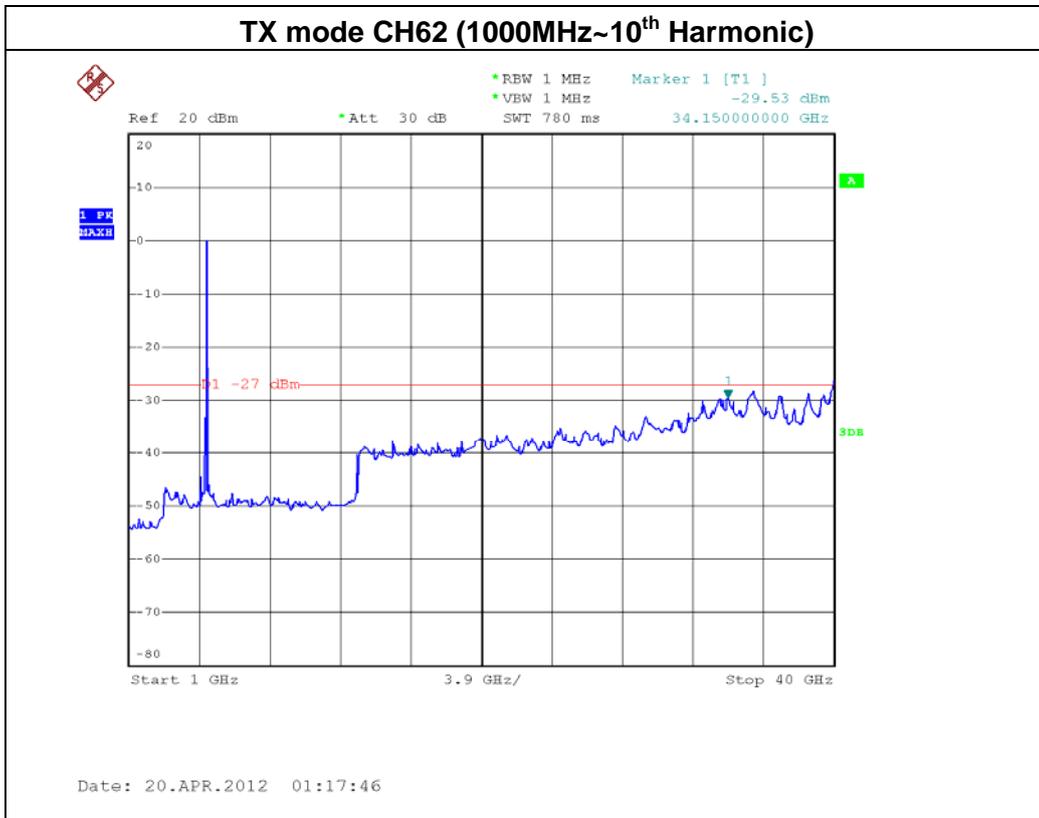
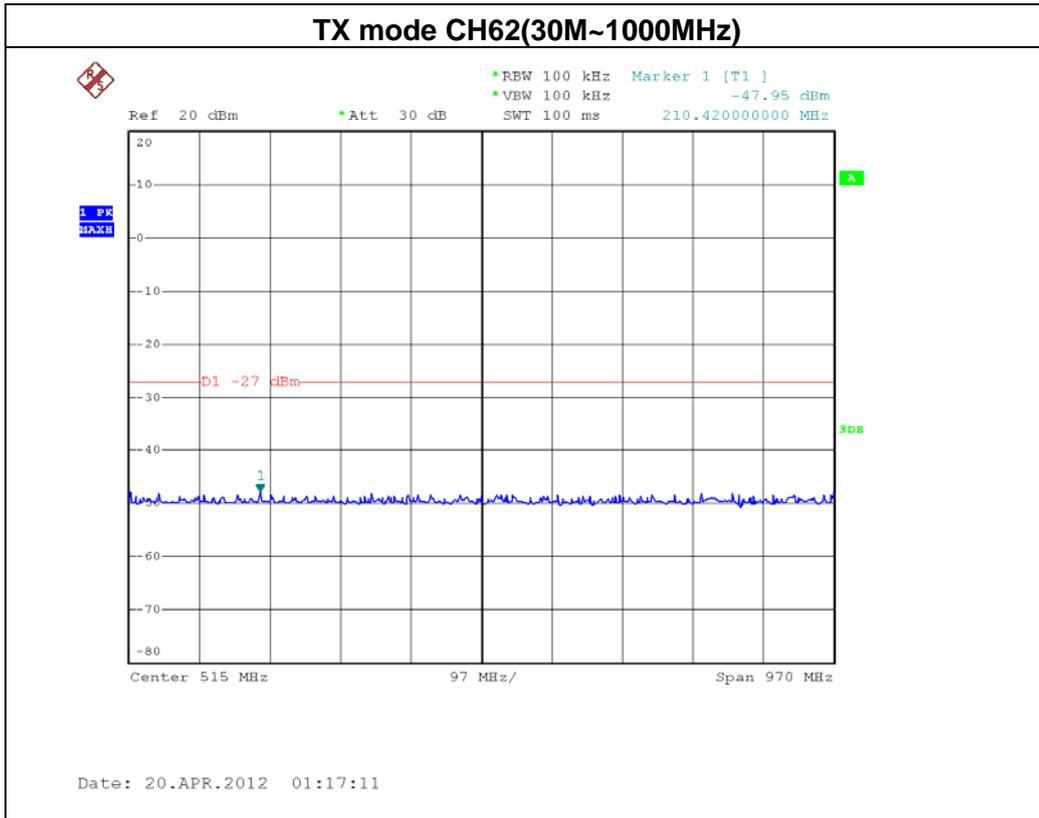
Date: 20.APR.2012 01:13:17

TX mode CH62



Date: 20.APR.2012 01:18:40





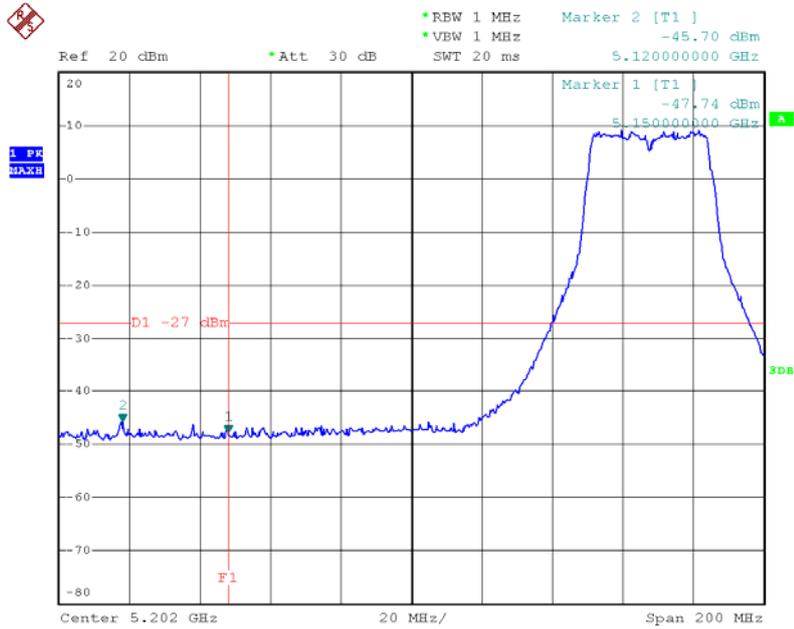


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N40 Mode/ CH54, CH62 (ANT 2)		

Channel of Worst Data: CH54			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5130.00	-45.70	5350.0	-41.93
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

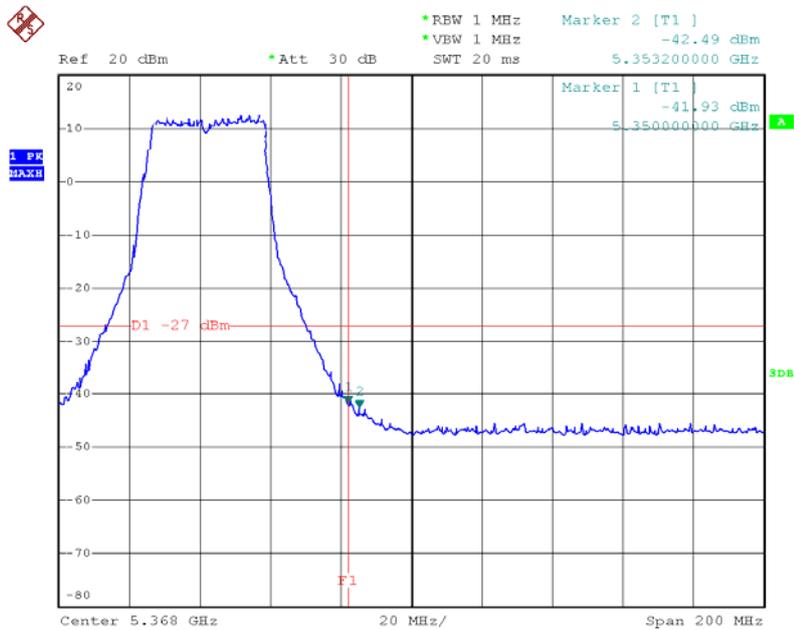


TX mode CH54

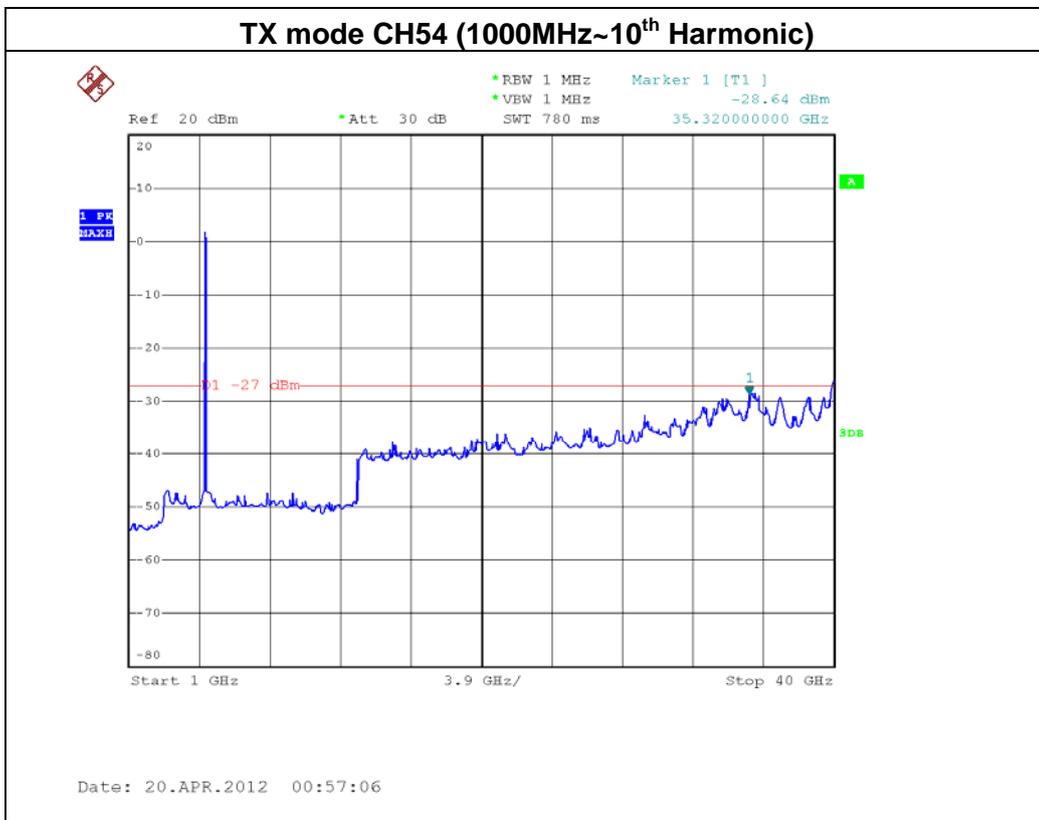
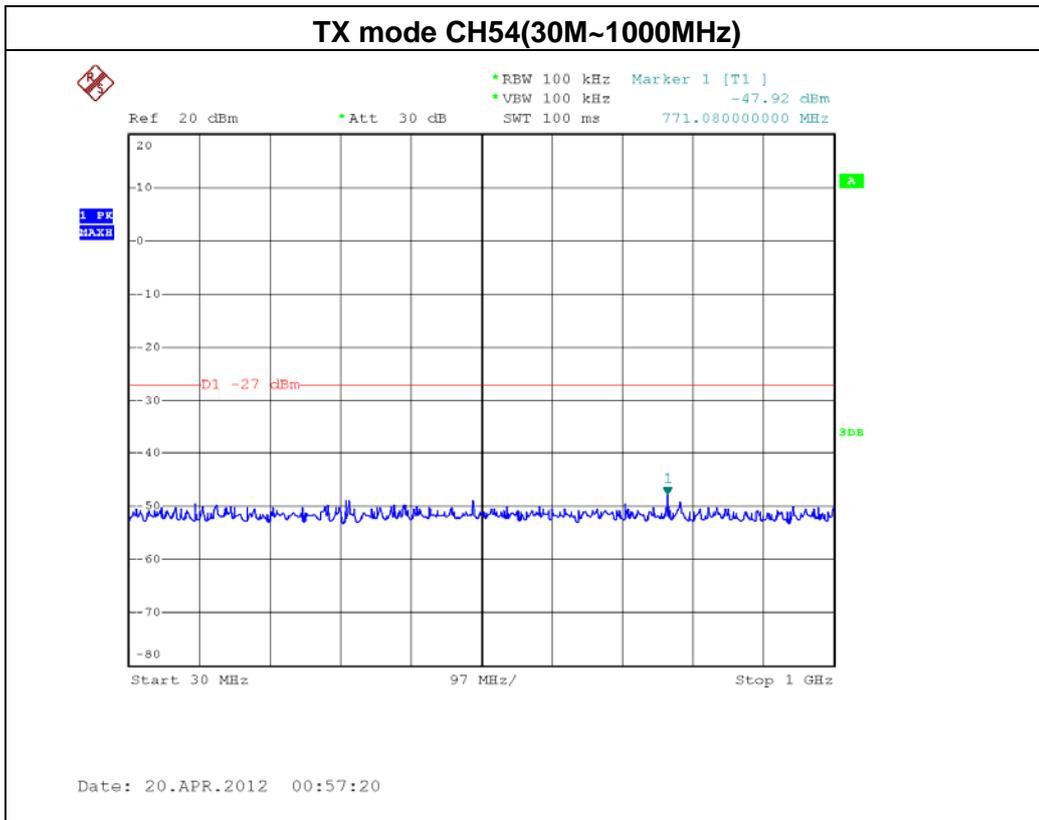


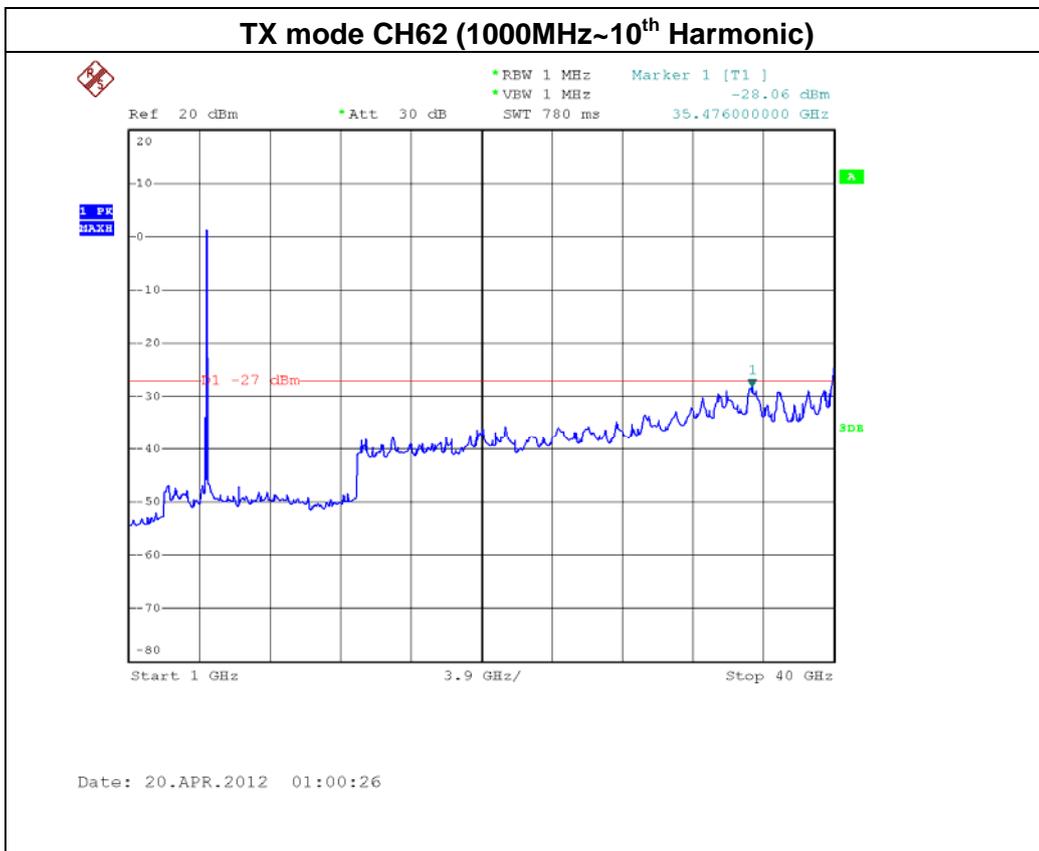
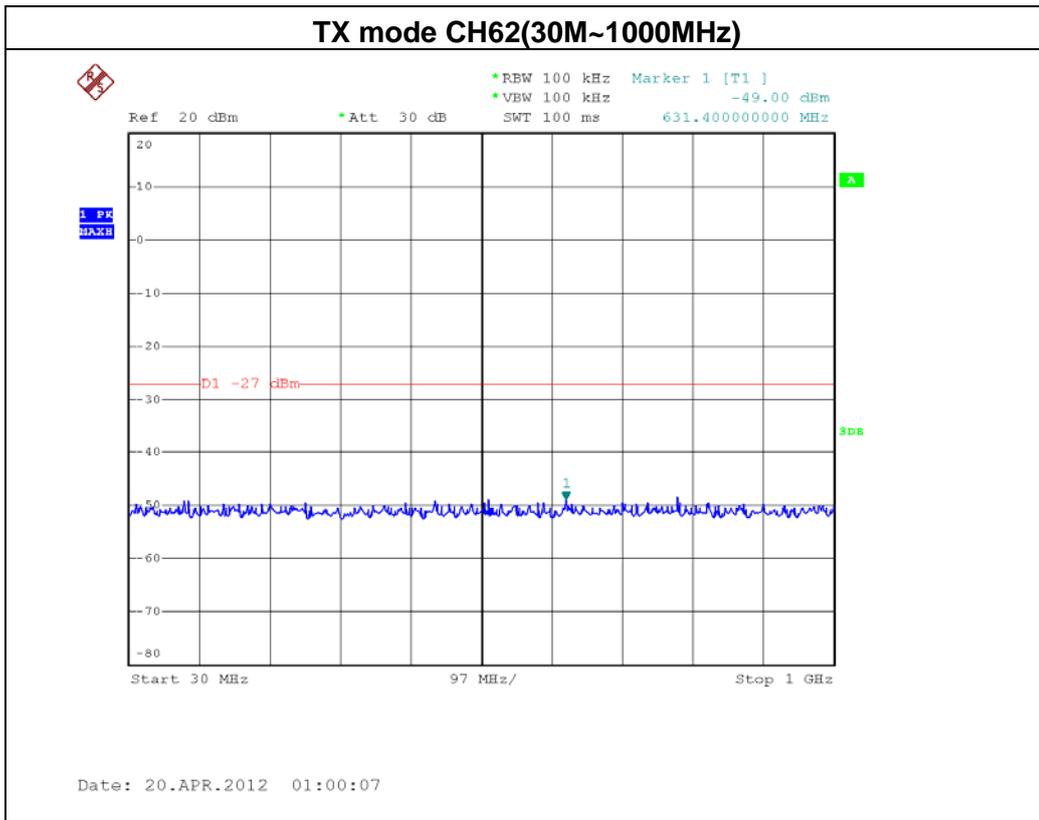
Date: 20.APR.2012 00:56:03

TX mode CH62



Date: 20.APR.2012 01:01:00





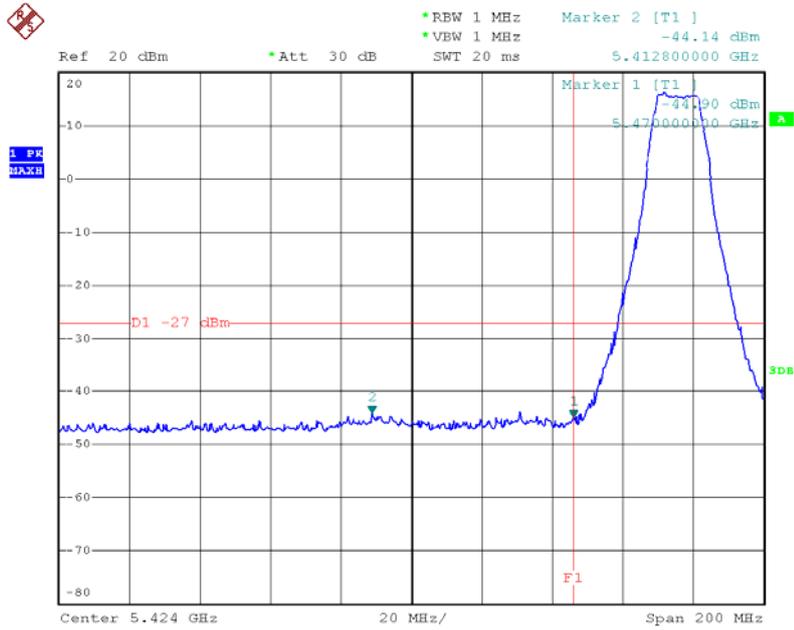


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX A Mode/ CH100, CH116 , CH140		

Channel of Worst Data: CH100			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5412.80	-44.14	5725.00	-44.85
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

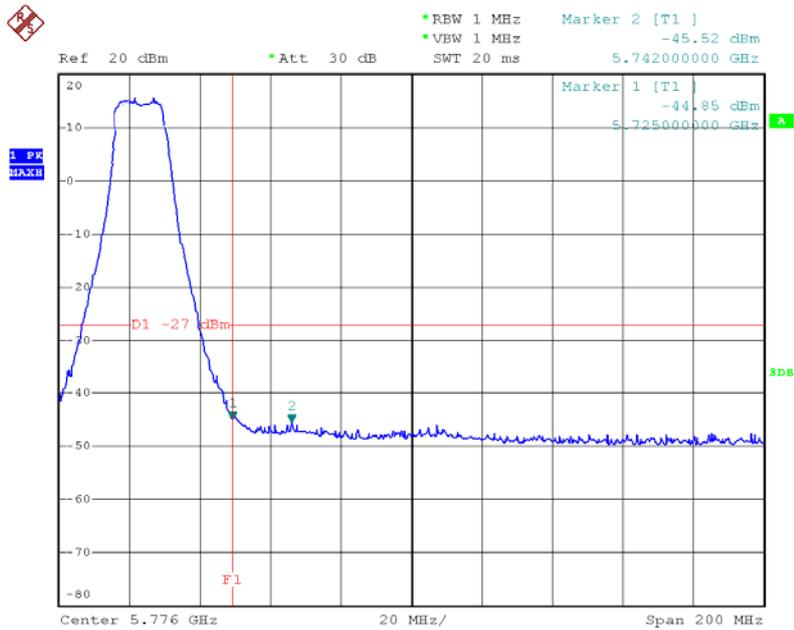


TX mode CH100

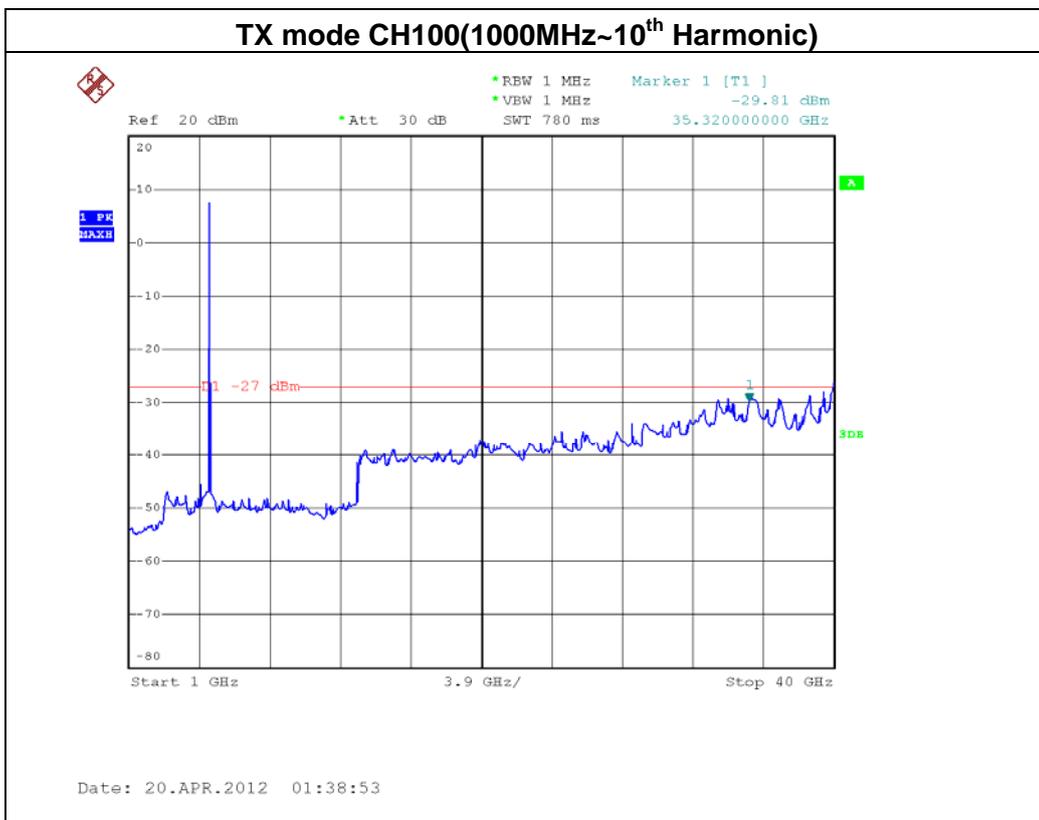
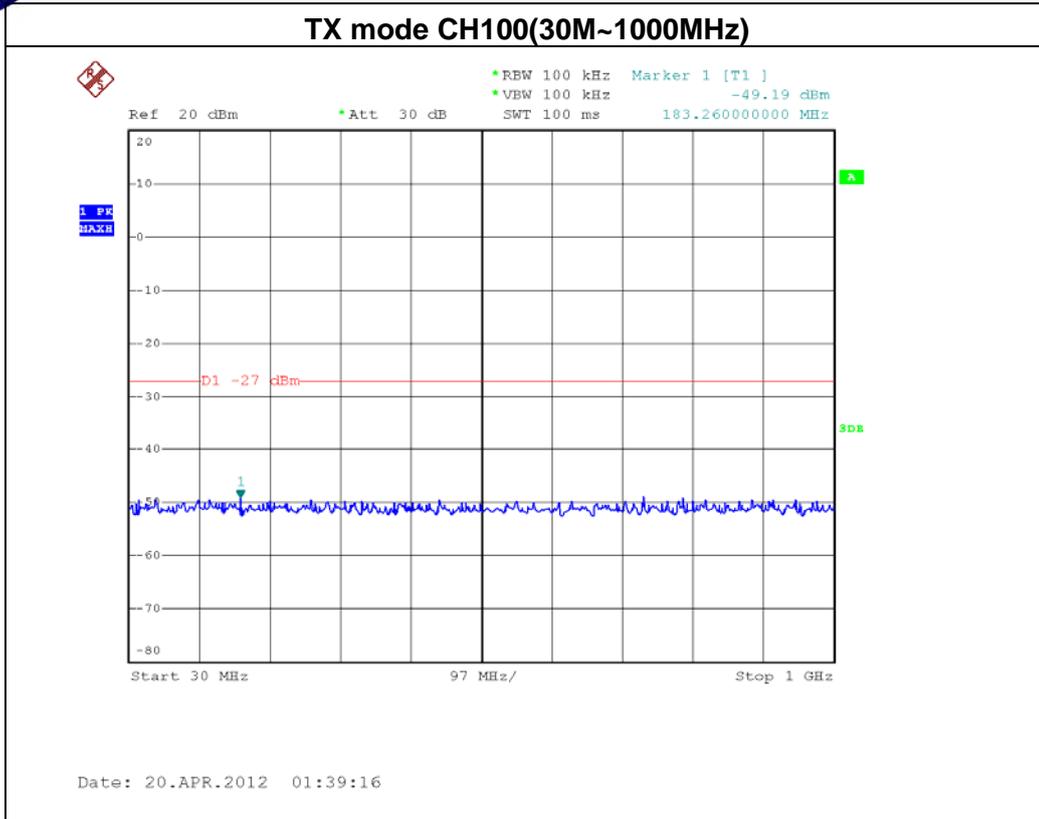


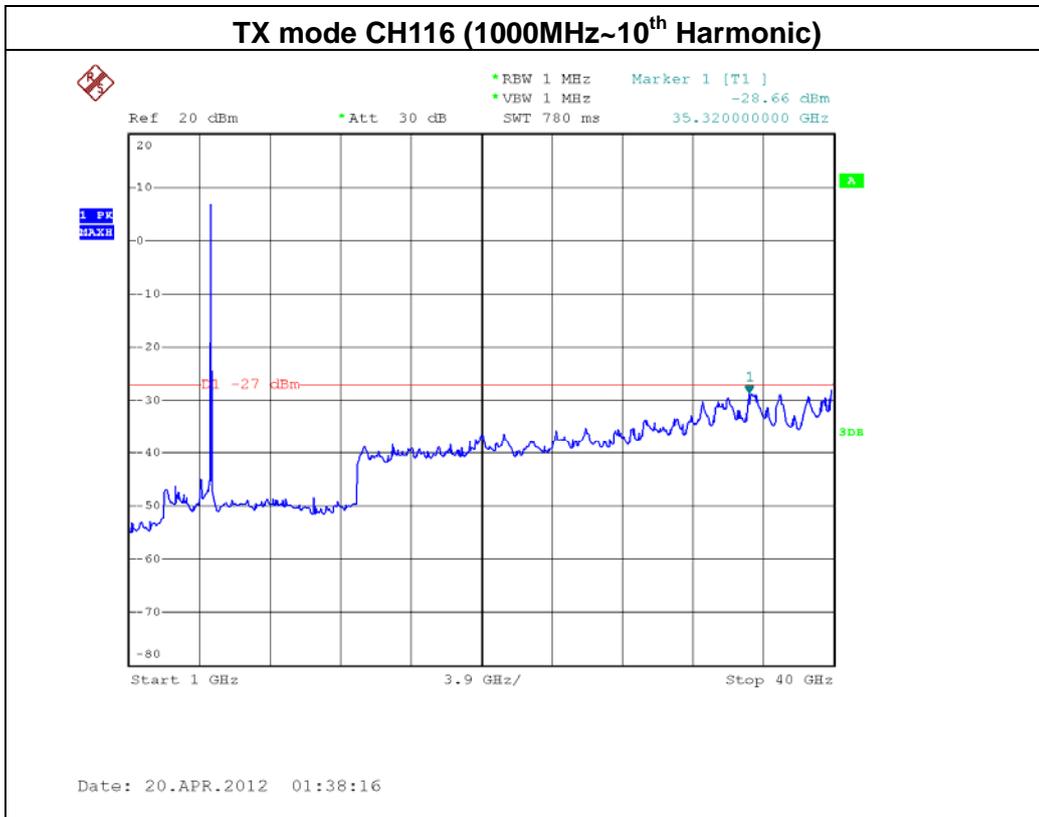
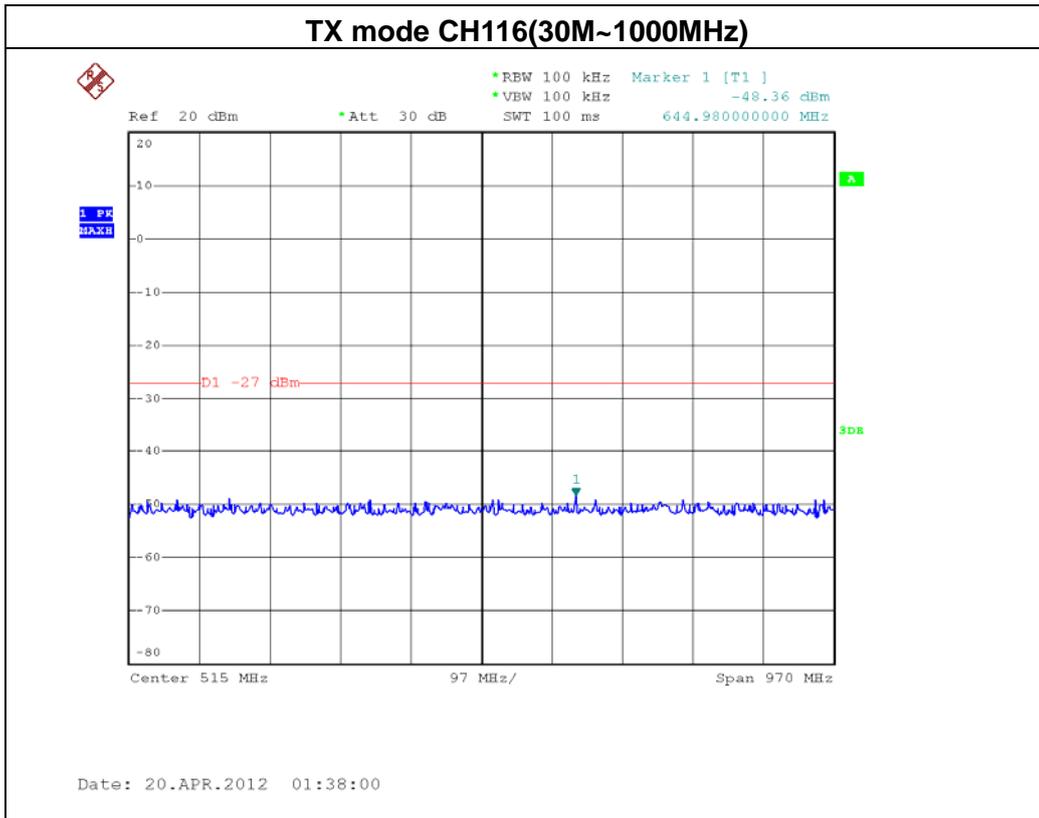
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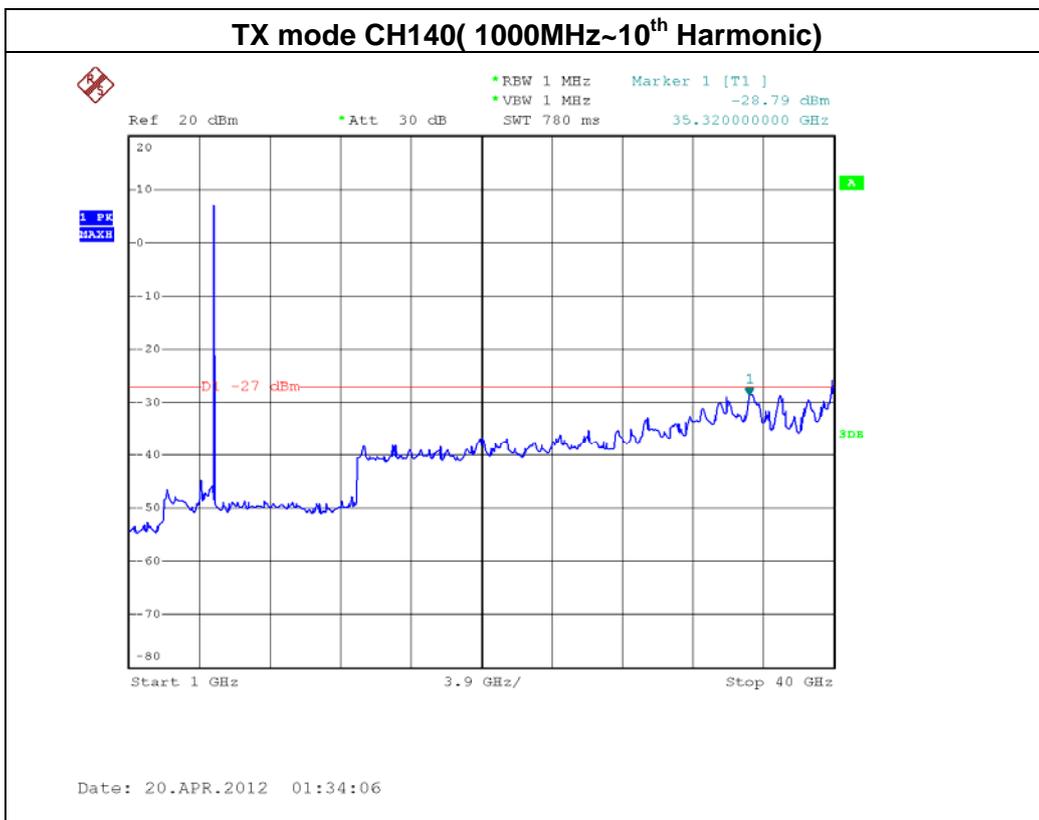
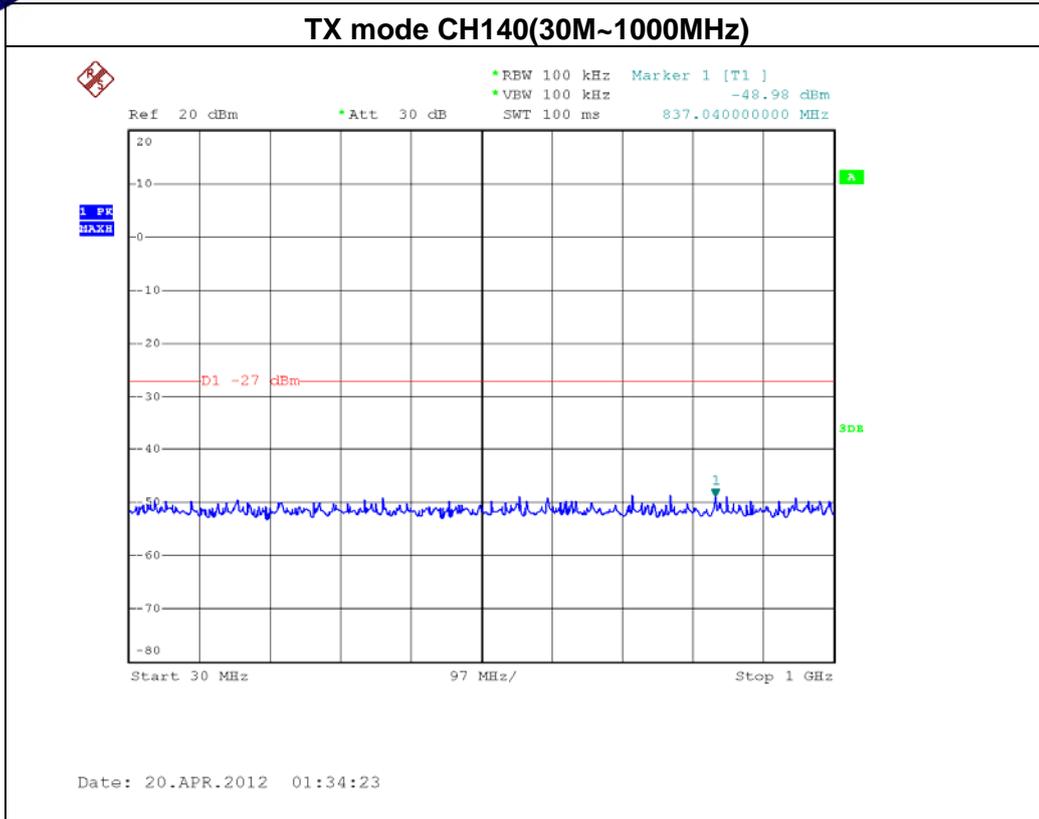
TX mode CH140



Date: 20.APR.2012 01:33:28







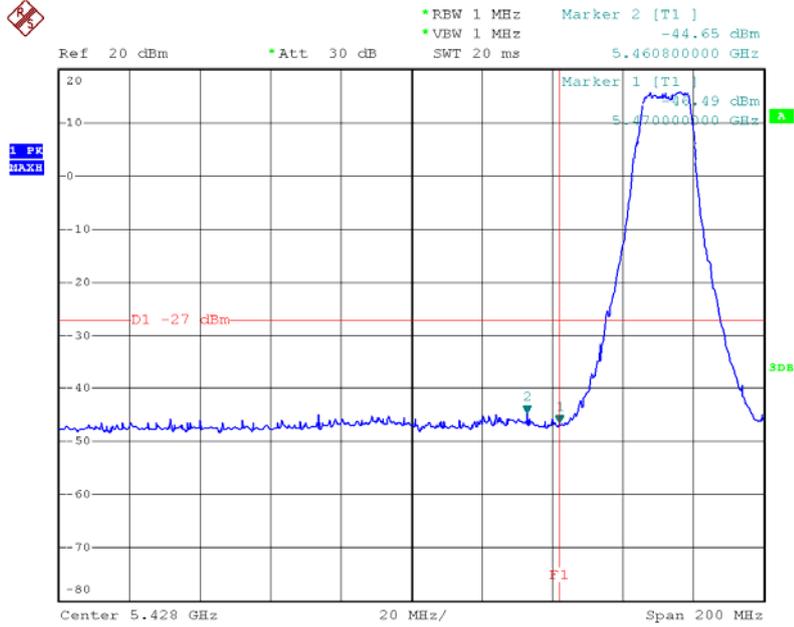


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX N20 Mode/ CH100, CH116 , CH140 (ANT 1)		

Channel of Worst Data: CH100			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5460.80	-44.65	5725.00	-46.71
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

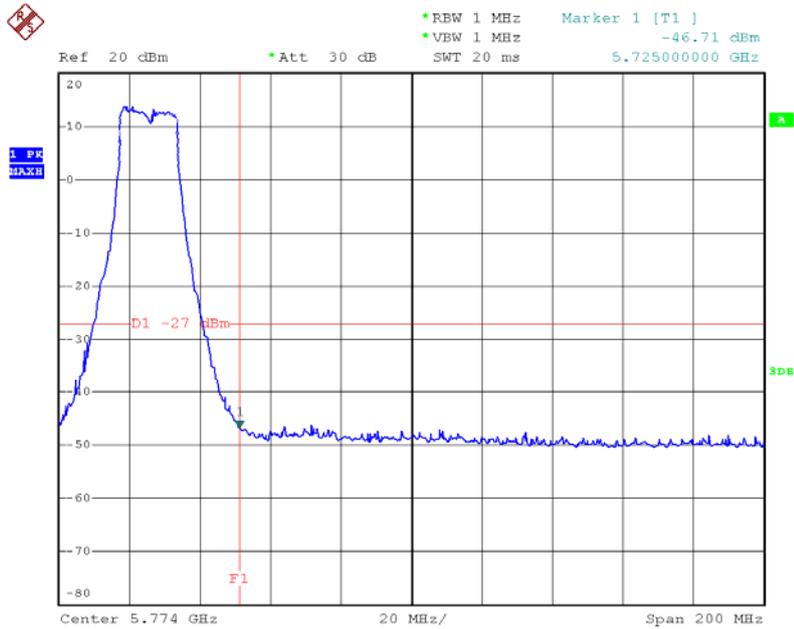


TX mode CH100

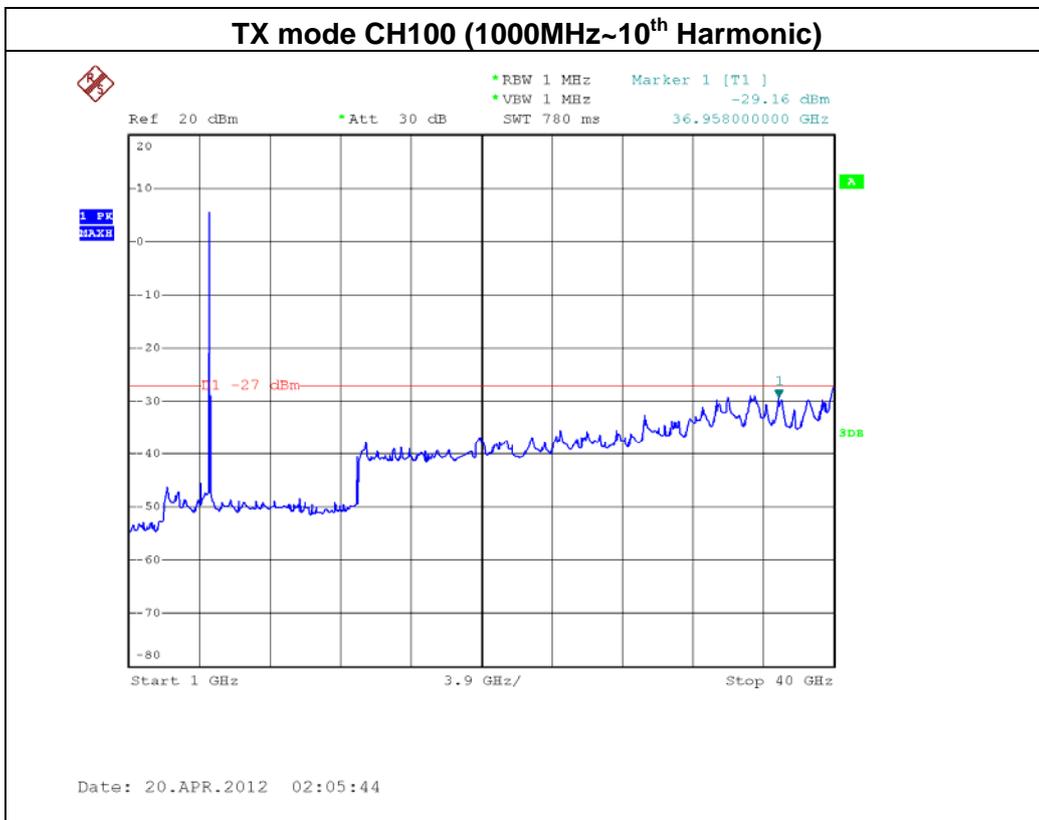
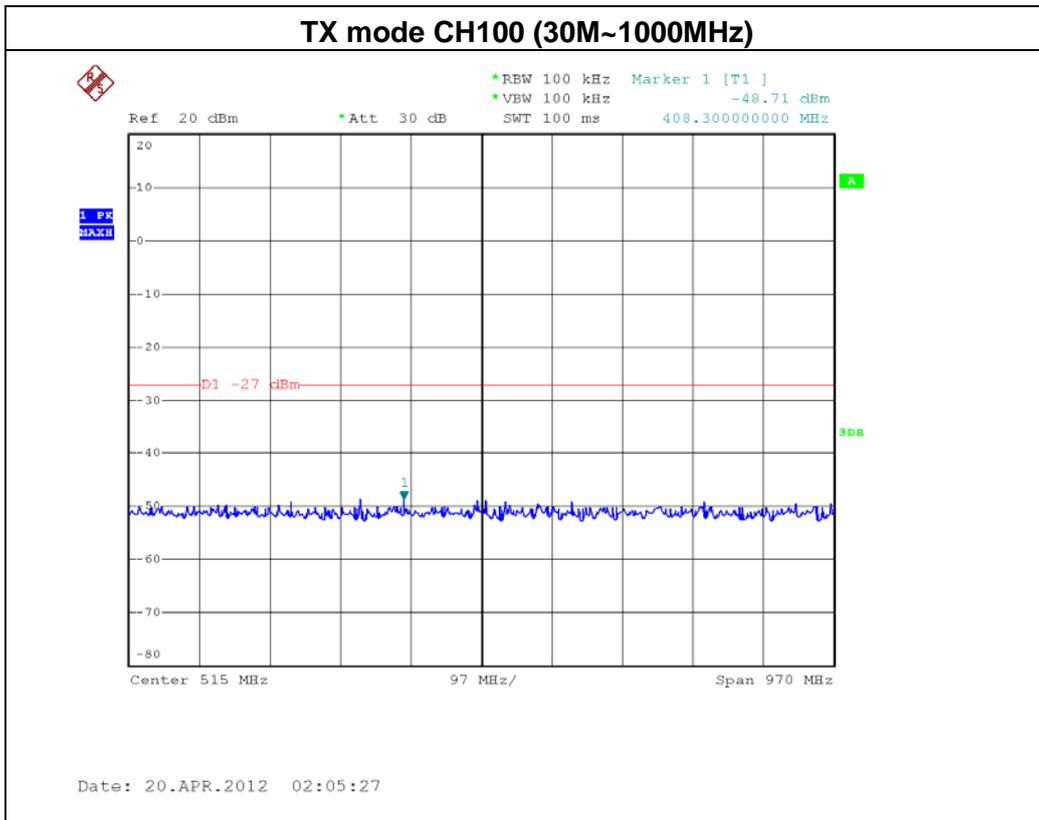


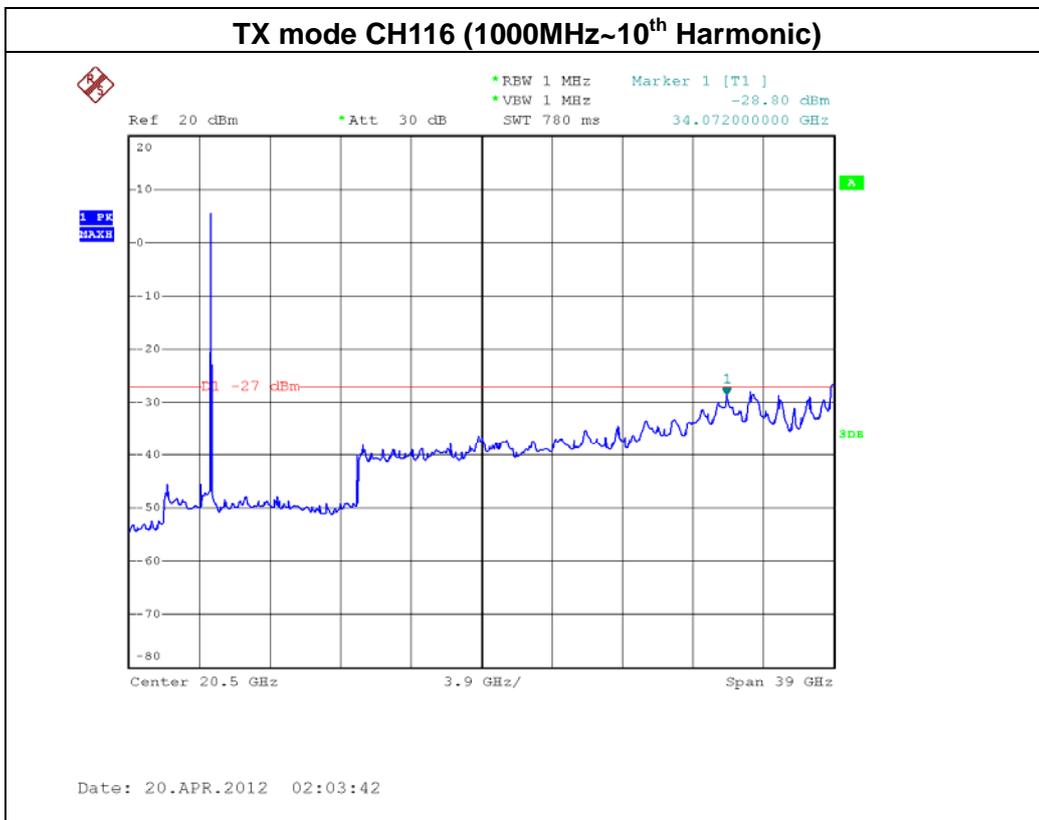
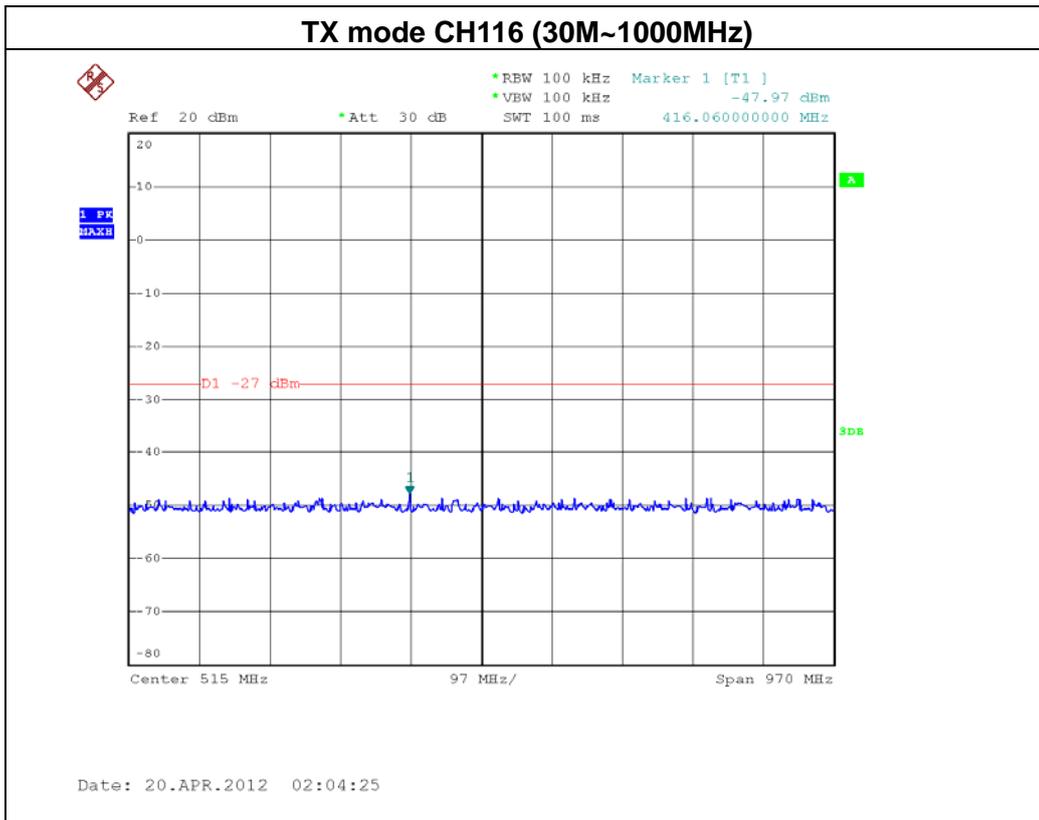
Date: 20.APR.2012 02:07:00

TX mode CH140



Date: 20.APR.2012 01:58:36





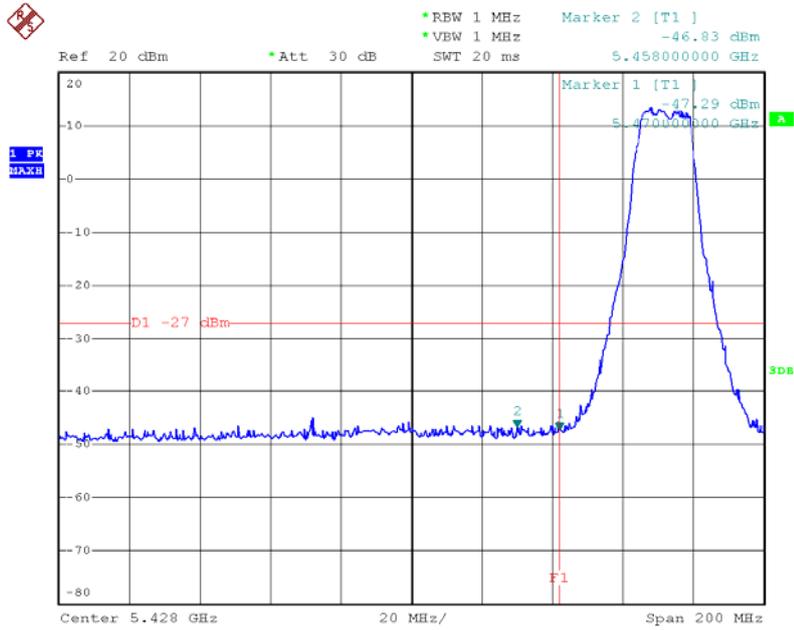


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX N20 Mode/ CH100, CH116 , CH140 (ANT 2)		

Channel of Worst Data: CH100			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5458.00	-46.83	575.00	-45.76
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

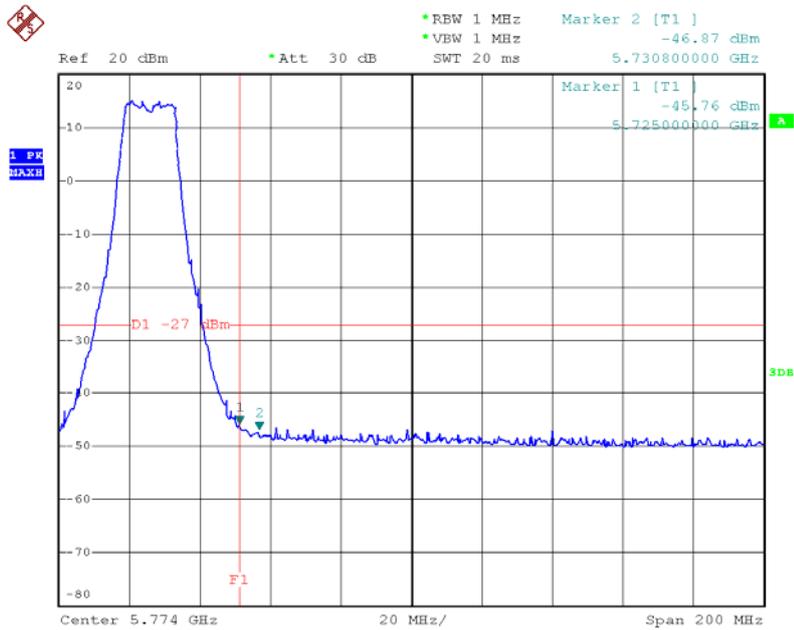


TX mode CH100

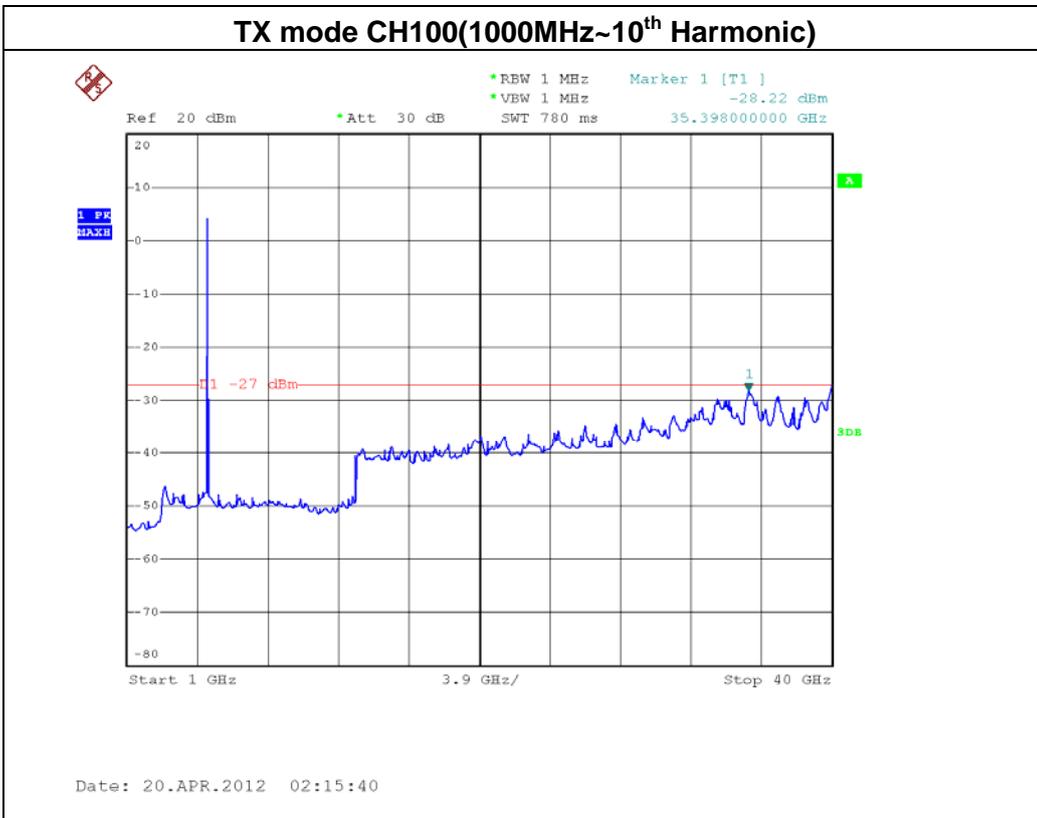
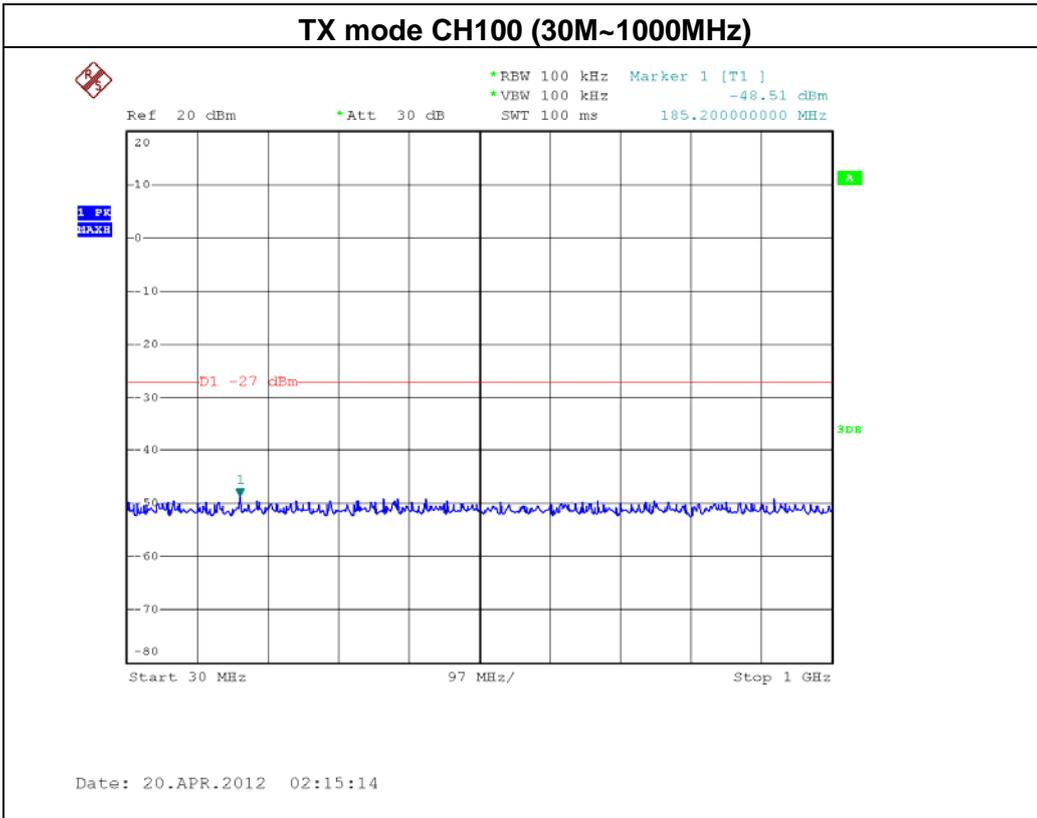


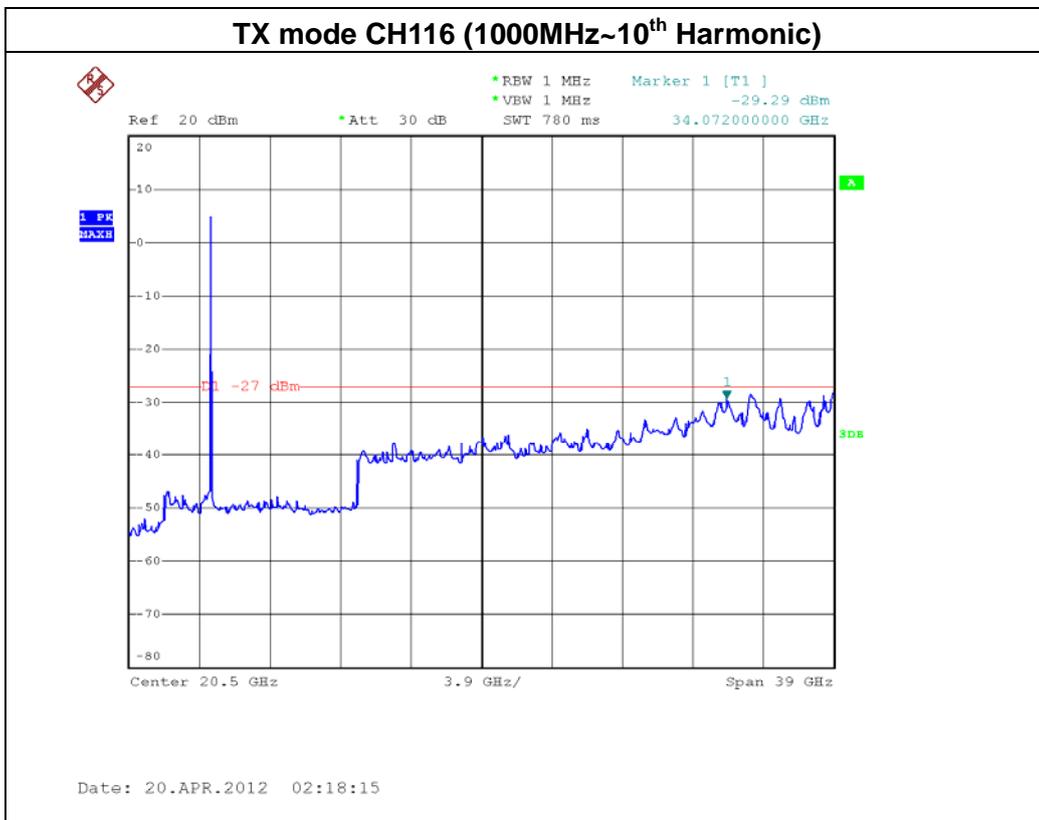
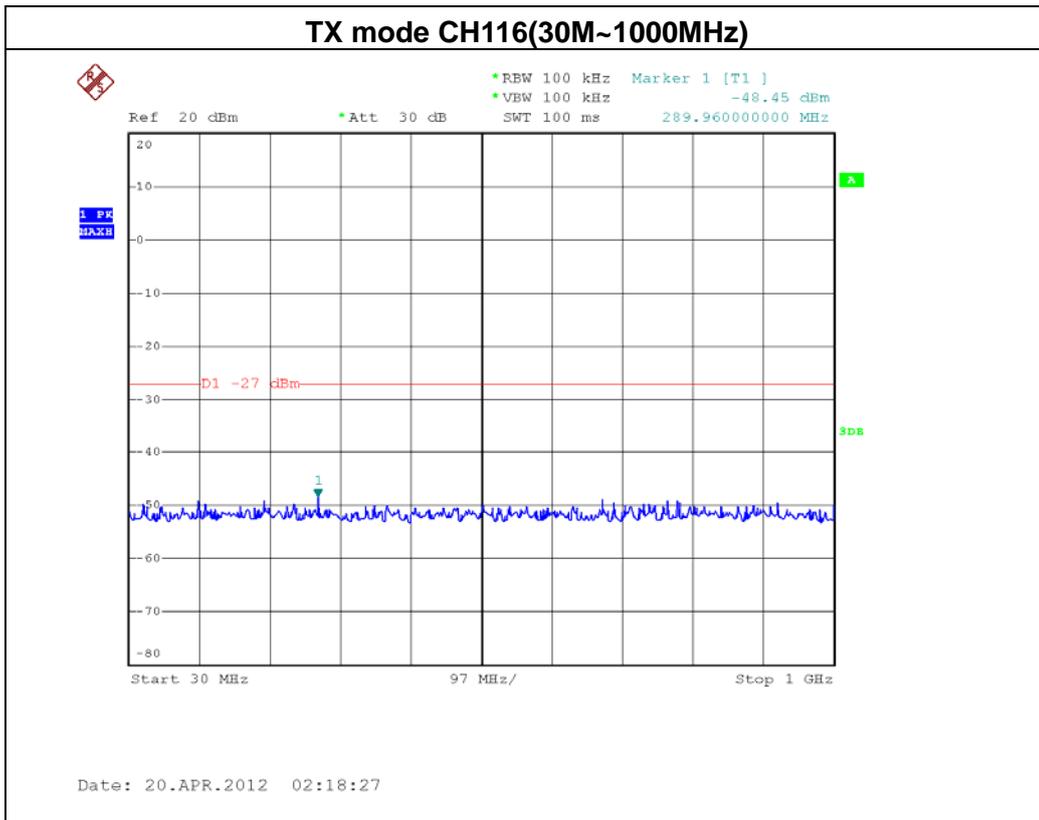
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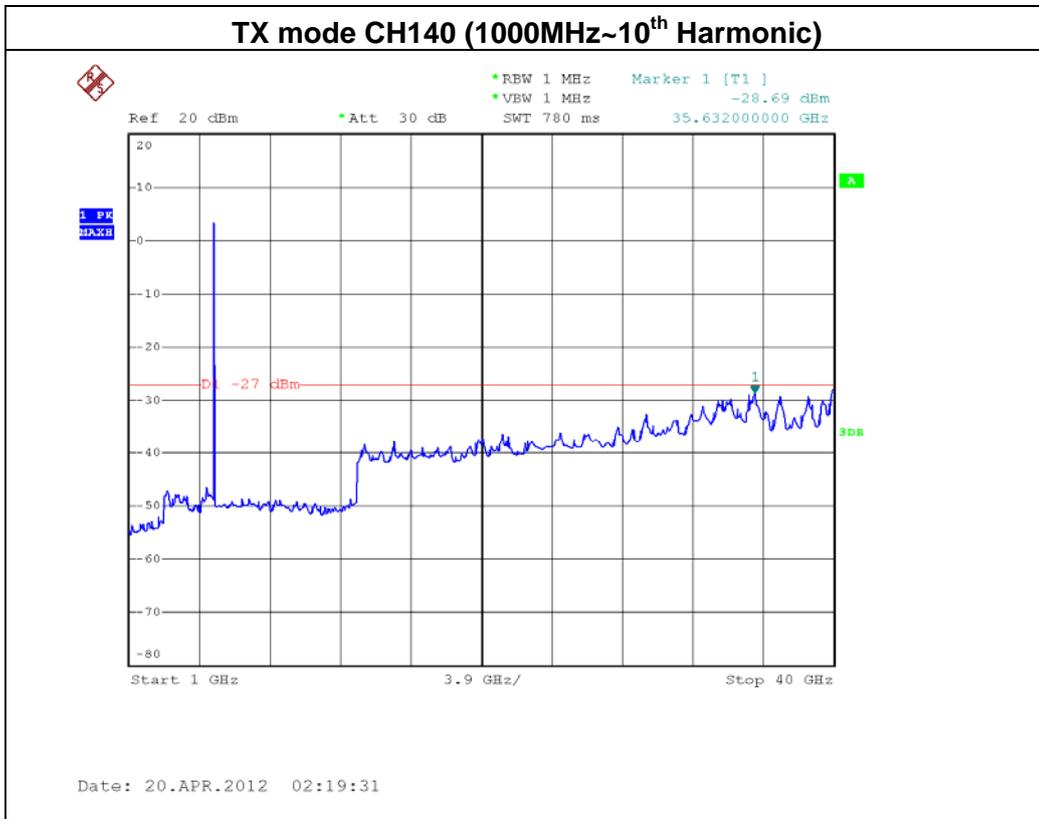
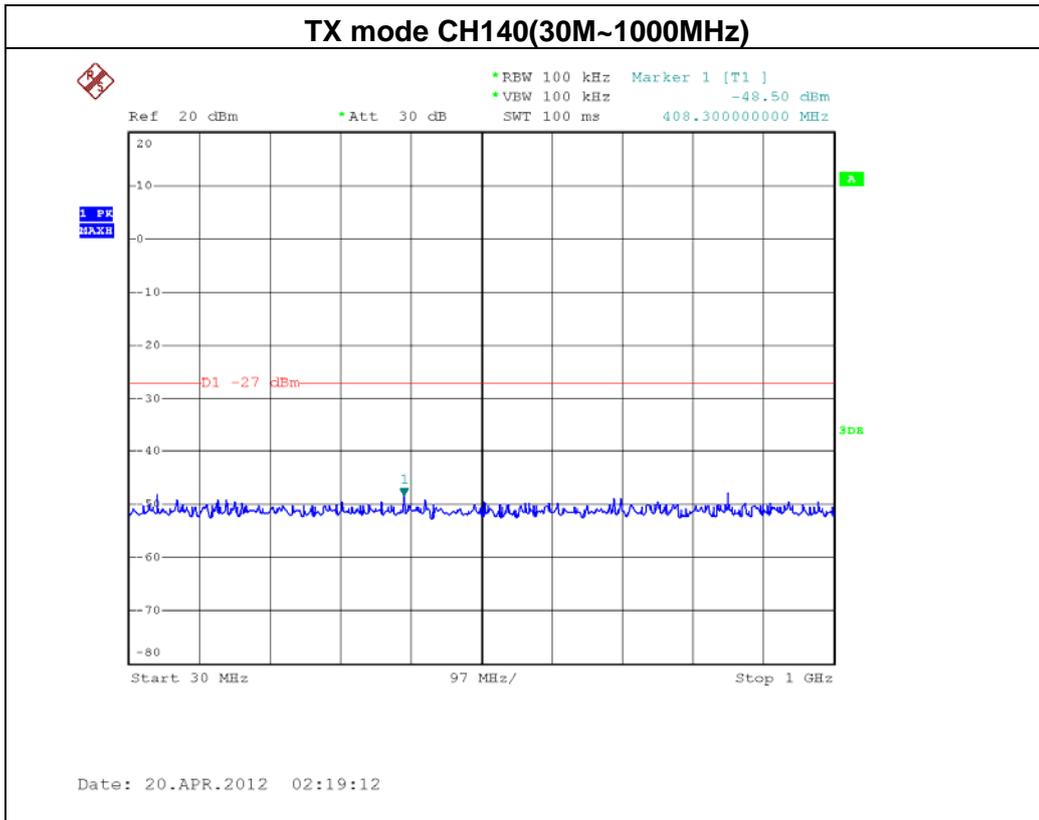
TX mode CH140



Date: 20.APR.2012 02:21:06







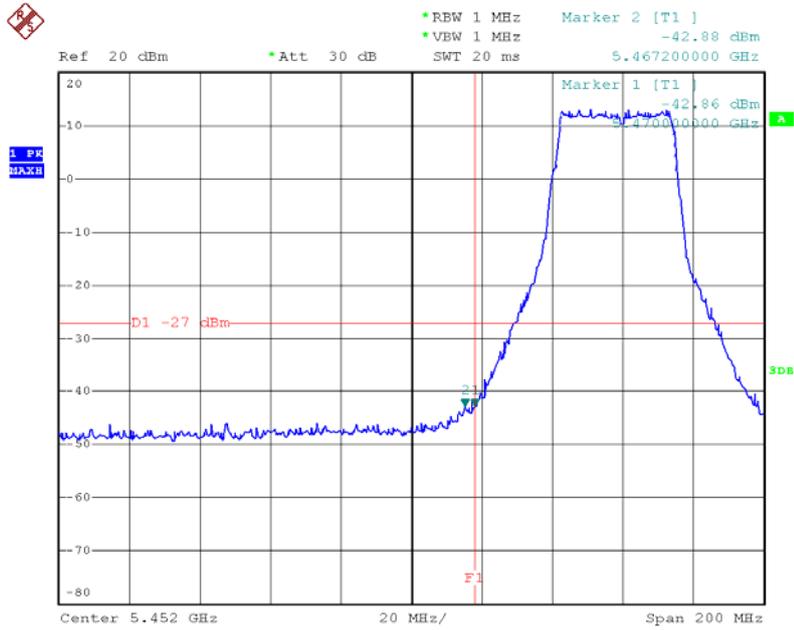


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX N40 Mode/ CH102, CH110,CH134 (ANT 1)		

Channel of Worst Data: CH102			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5740.00	-42.86	5730.80	-46.80
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

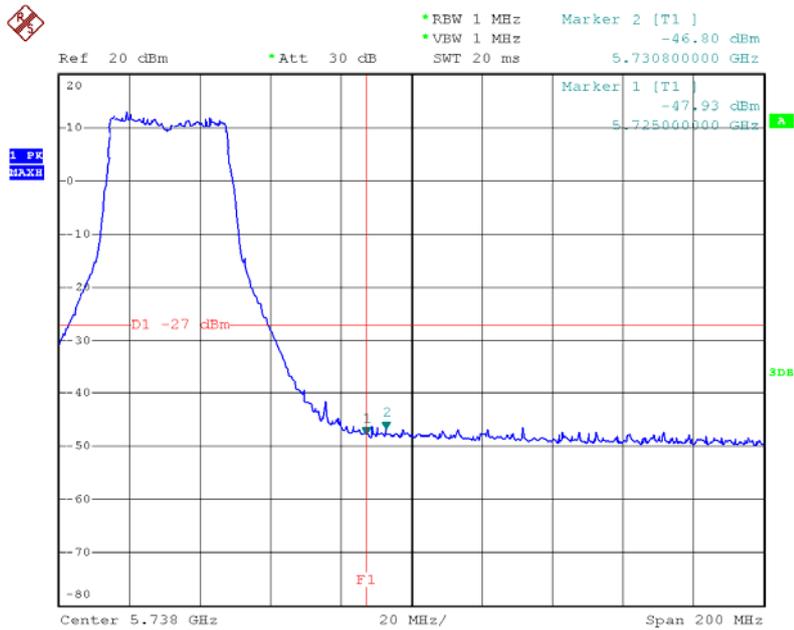


TX mode CH102

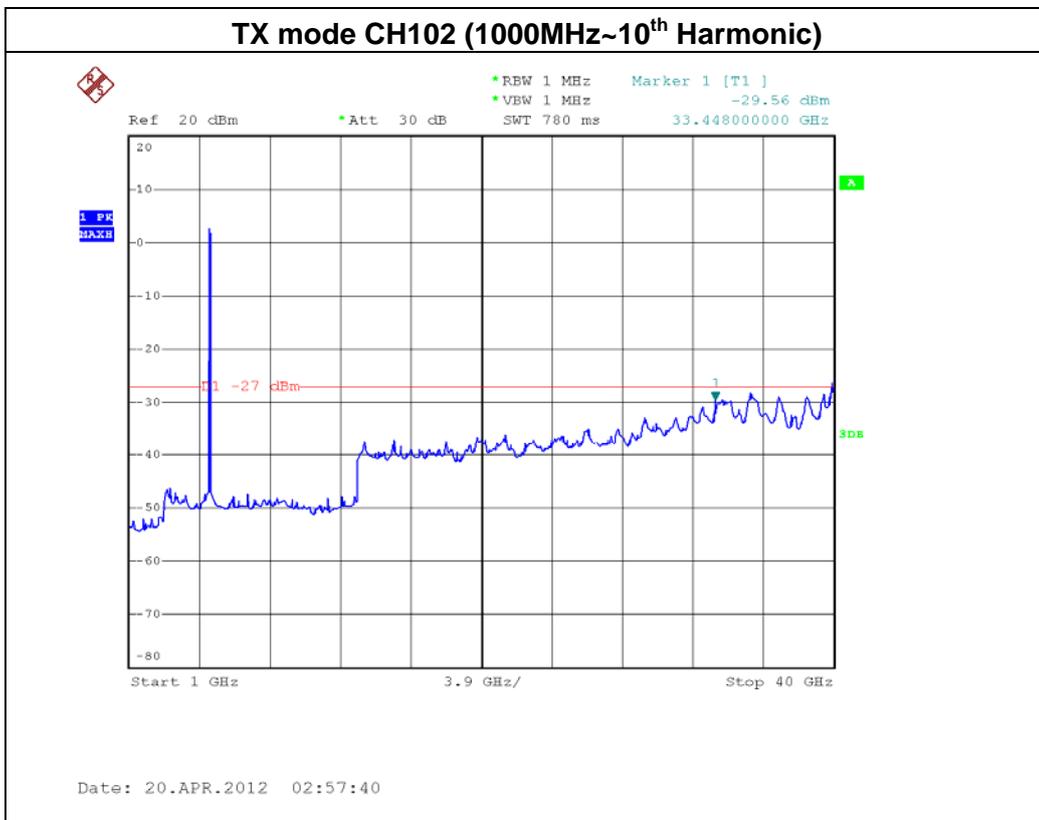
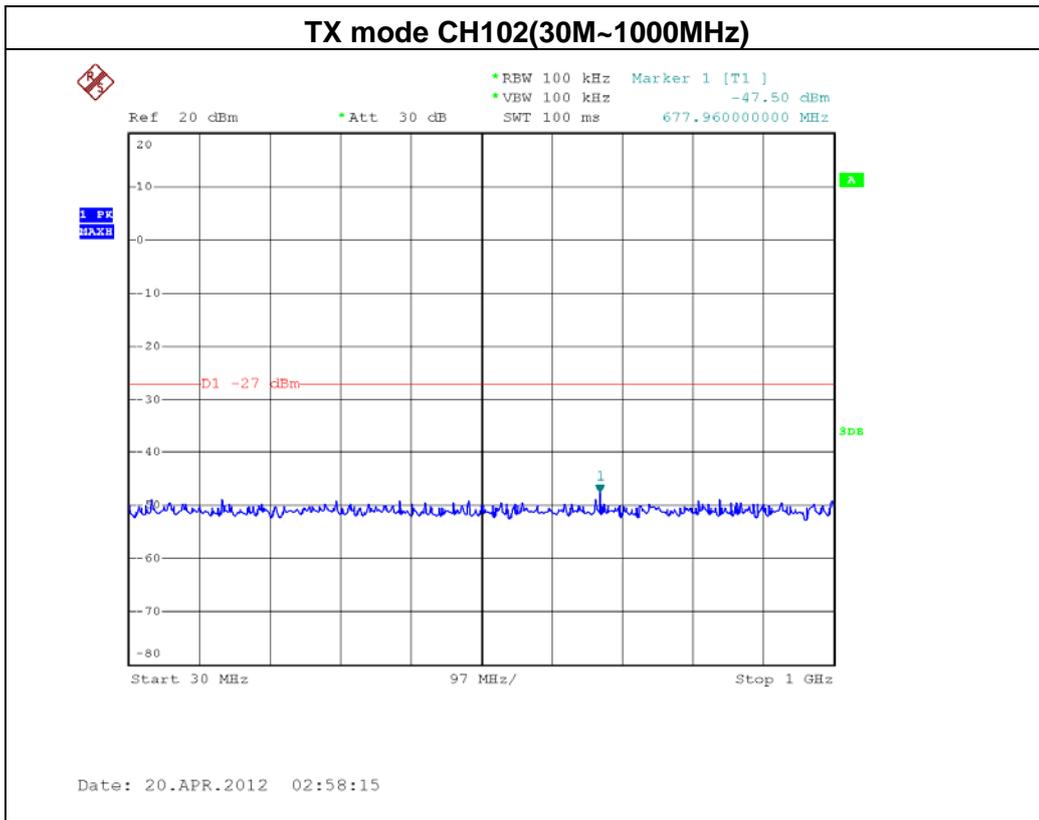


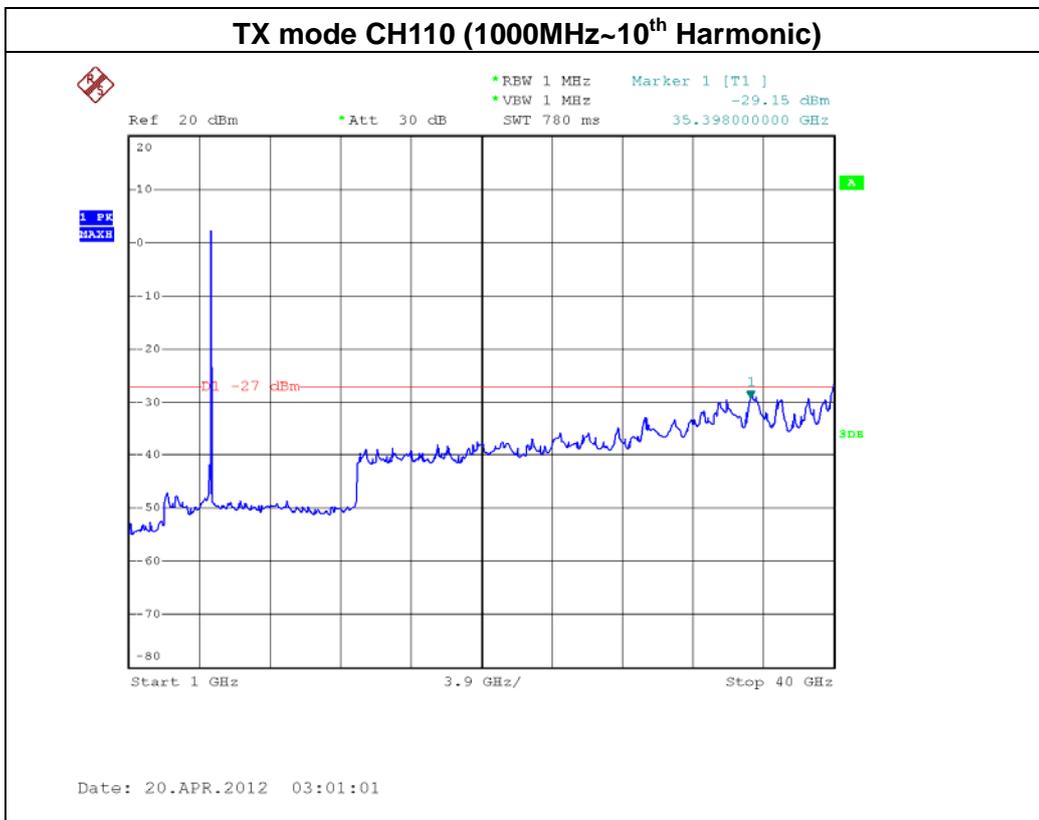
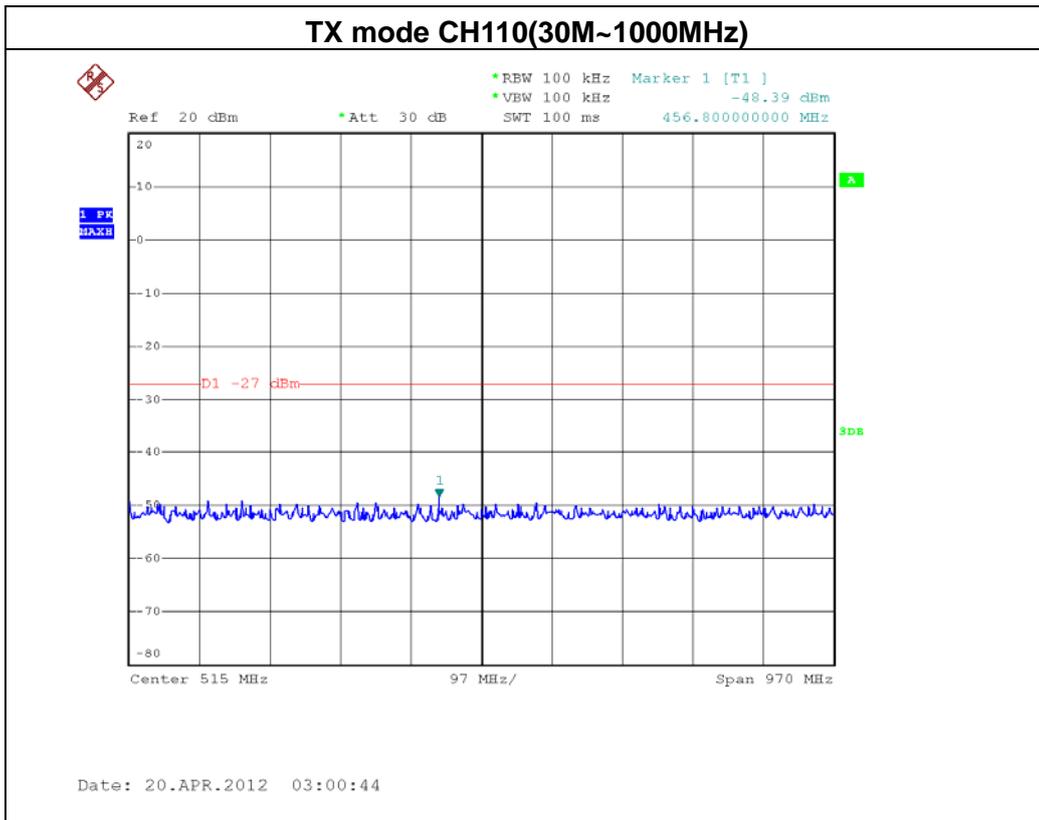
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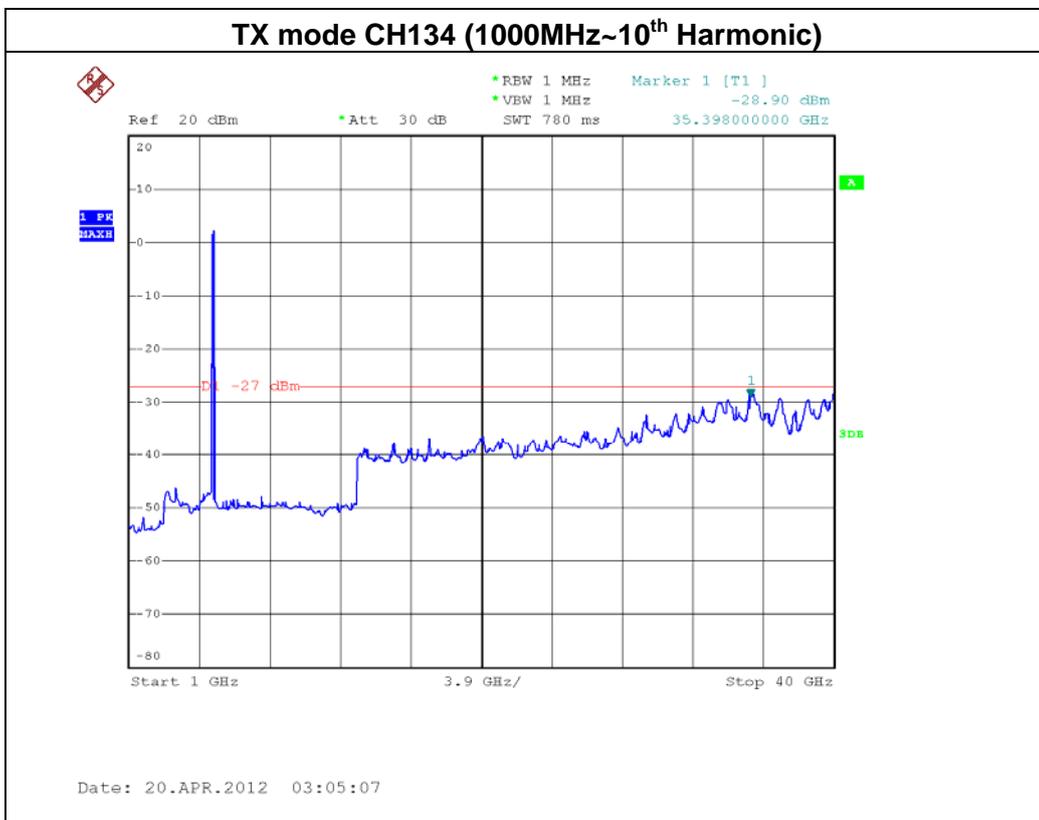
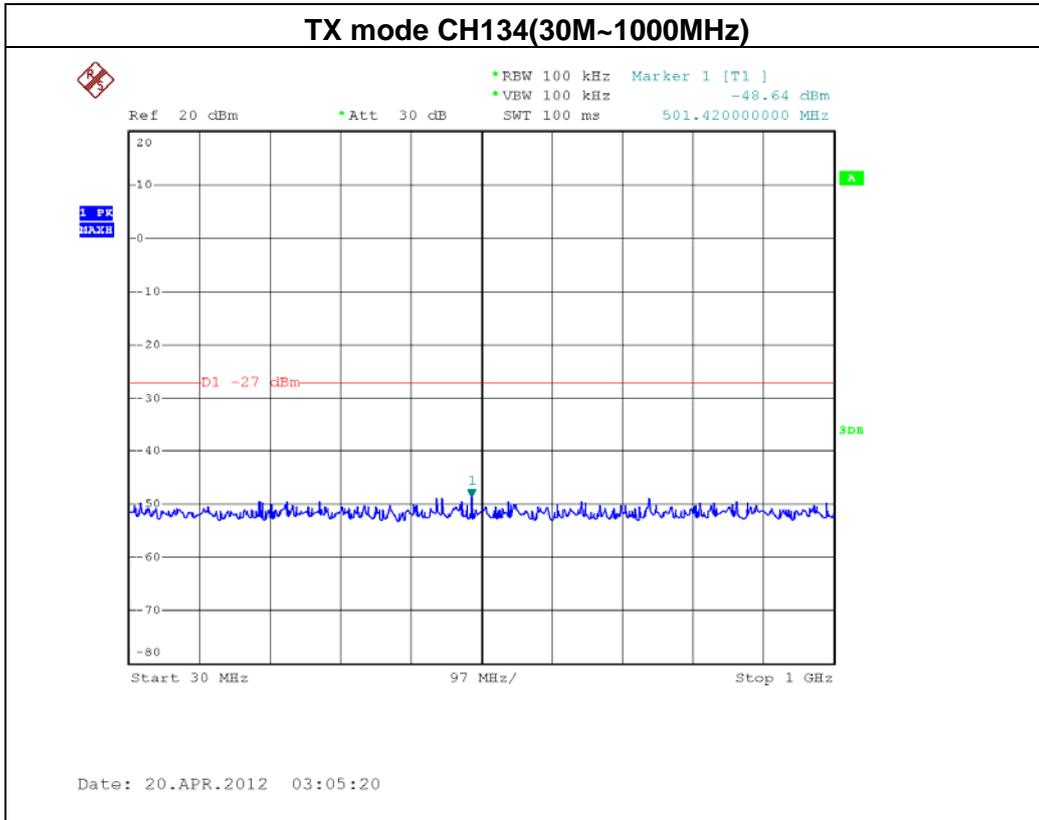
TX mode CH134



Date: 20.APR.2012 03:03:59







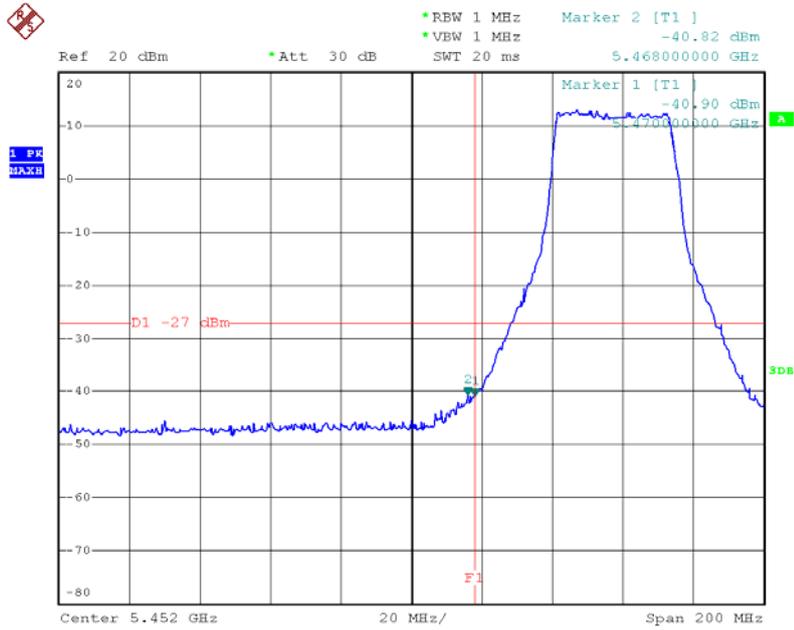


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX N40 Mode/ CH102, CH110,CH134 (ANT 2)		

Channel of Worst Data: CH102			
The max. radio frequency power in any 1000kHz bandwidth outside the frequency band		The max. radio frequency power in any 1000kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
5468.00	-40.82	5736.4	-47.12
Limit: -27 dBm/1MHz		Result:PASS	
Measurement method: S.A Read value+Ant gain+cable loss			

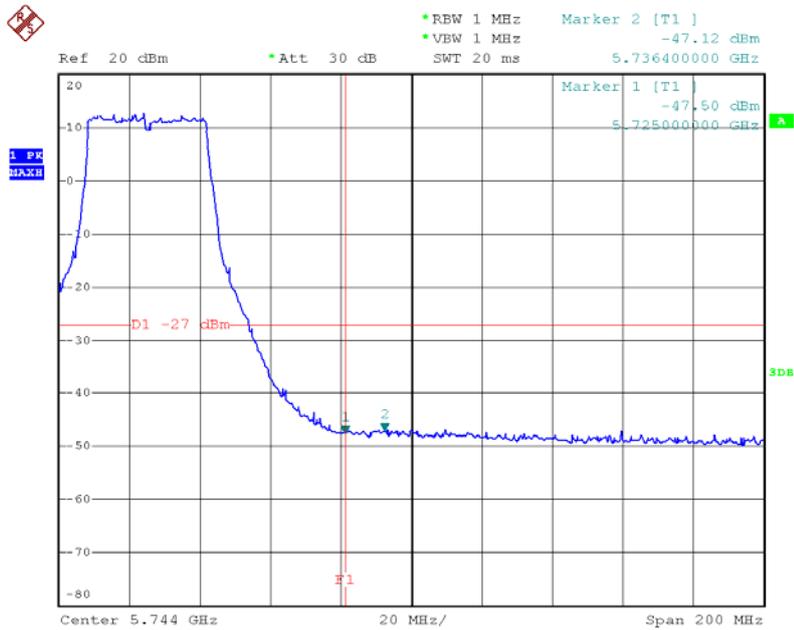


TX mode CH102

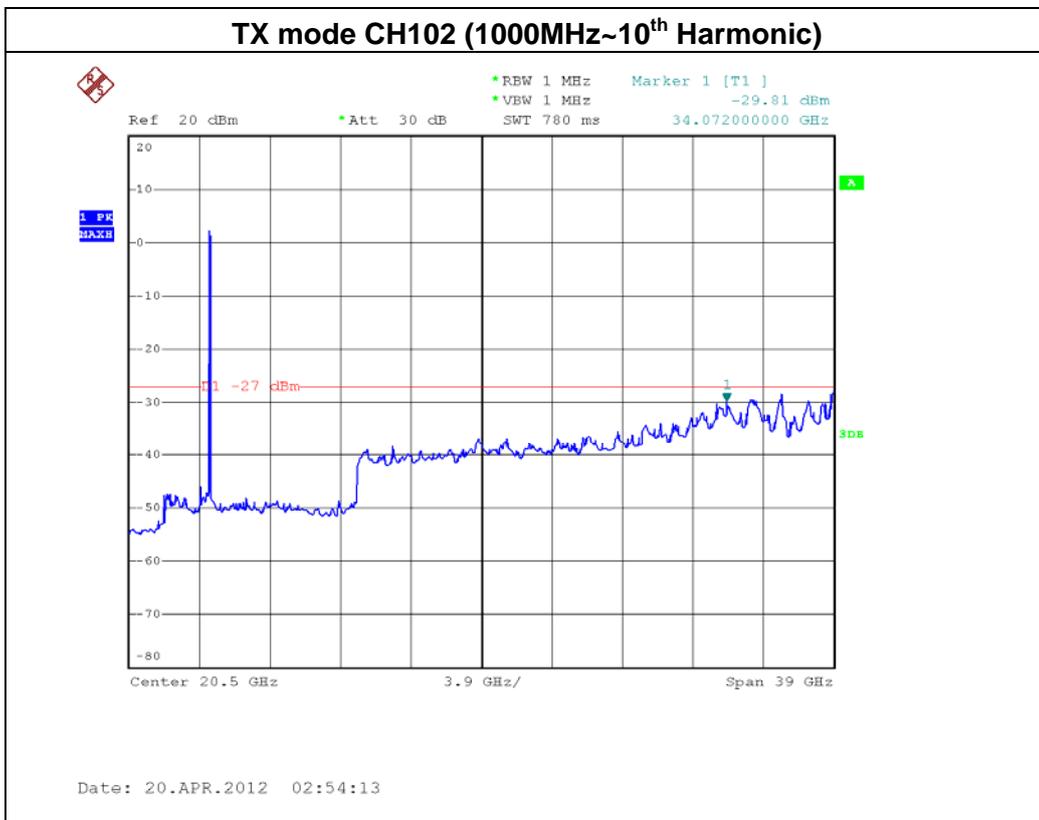
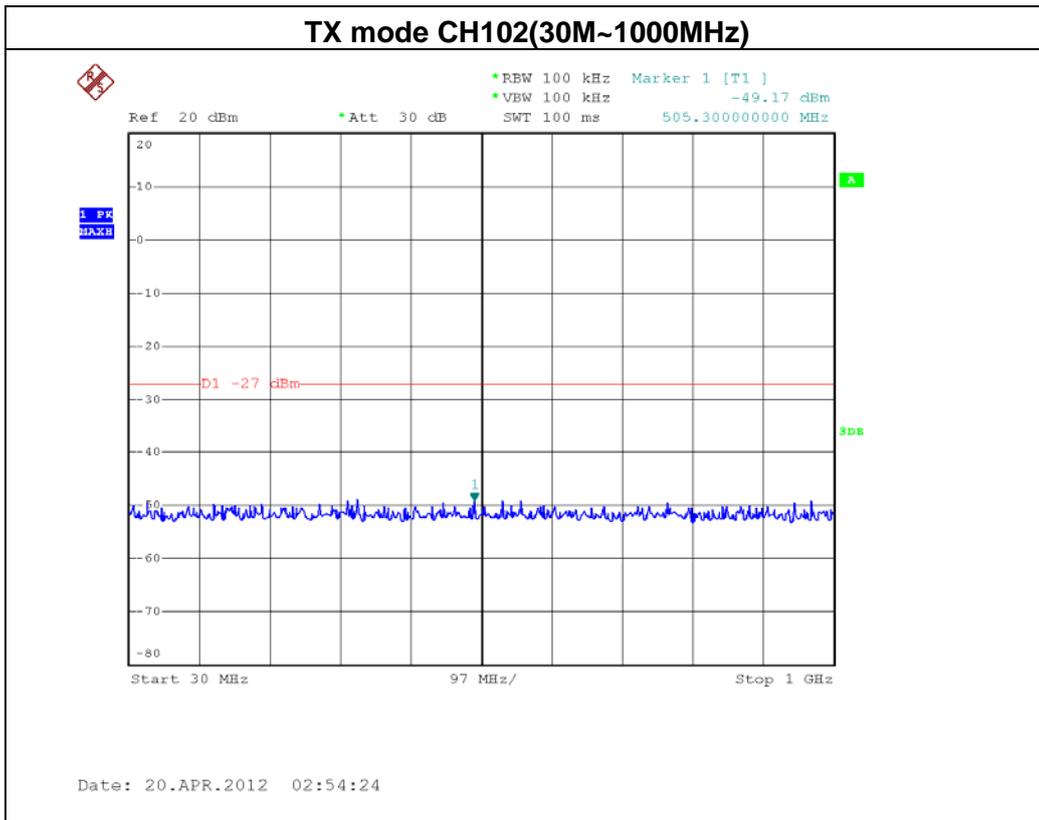


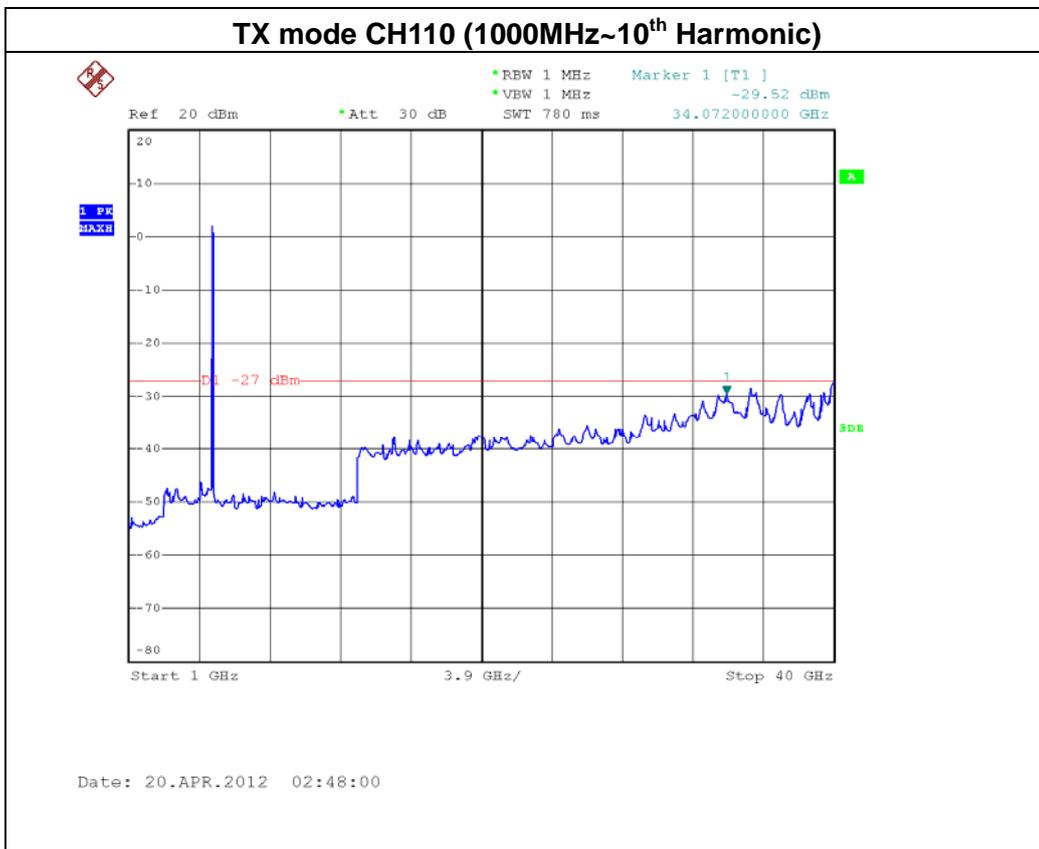
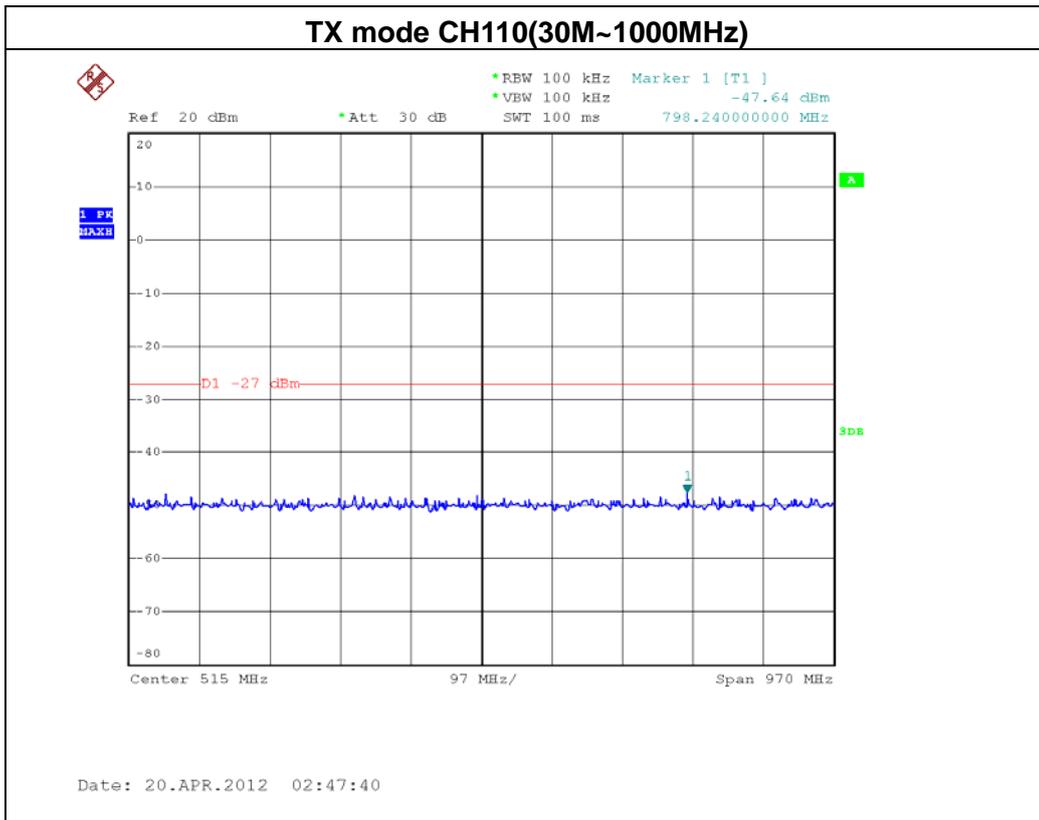
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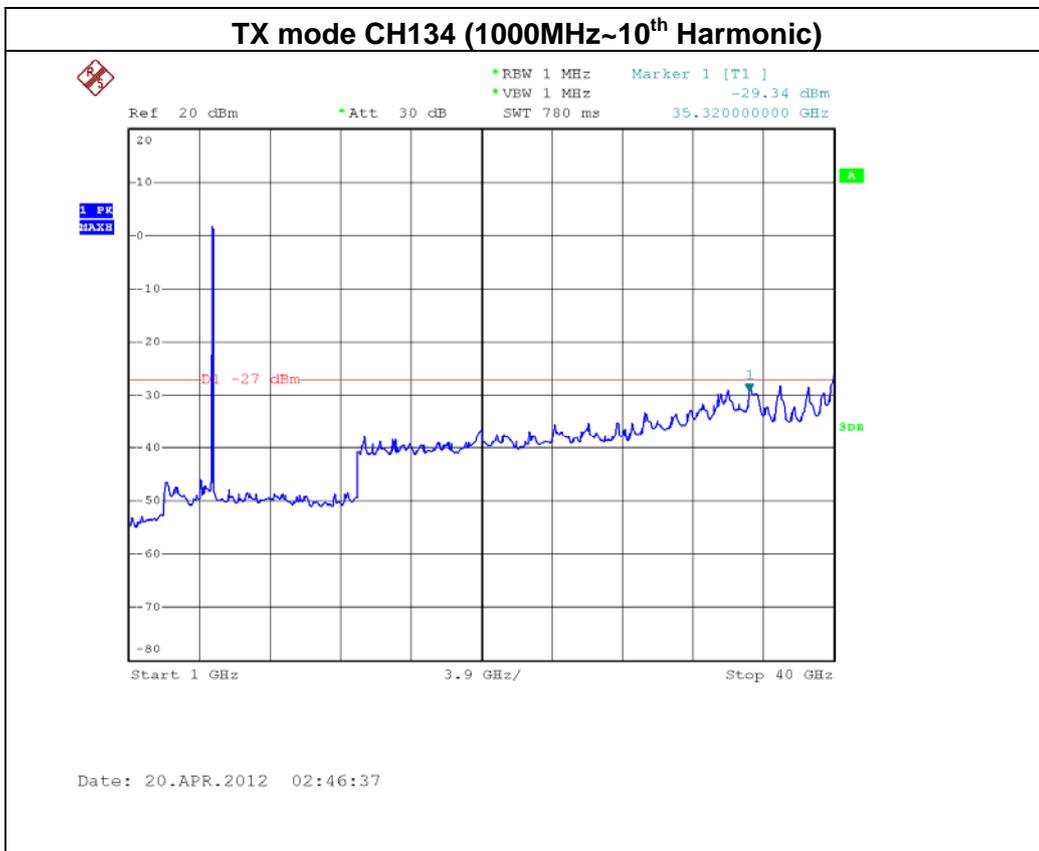
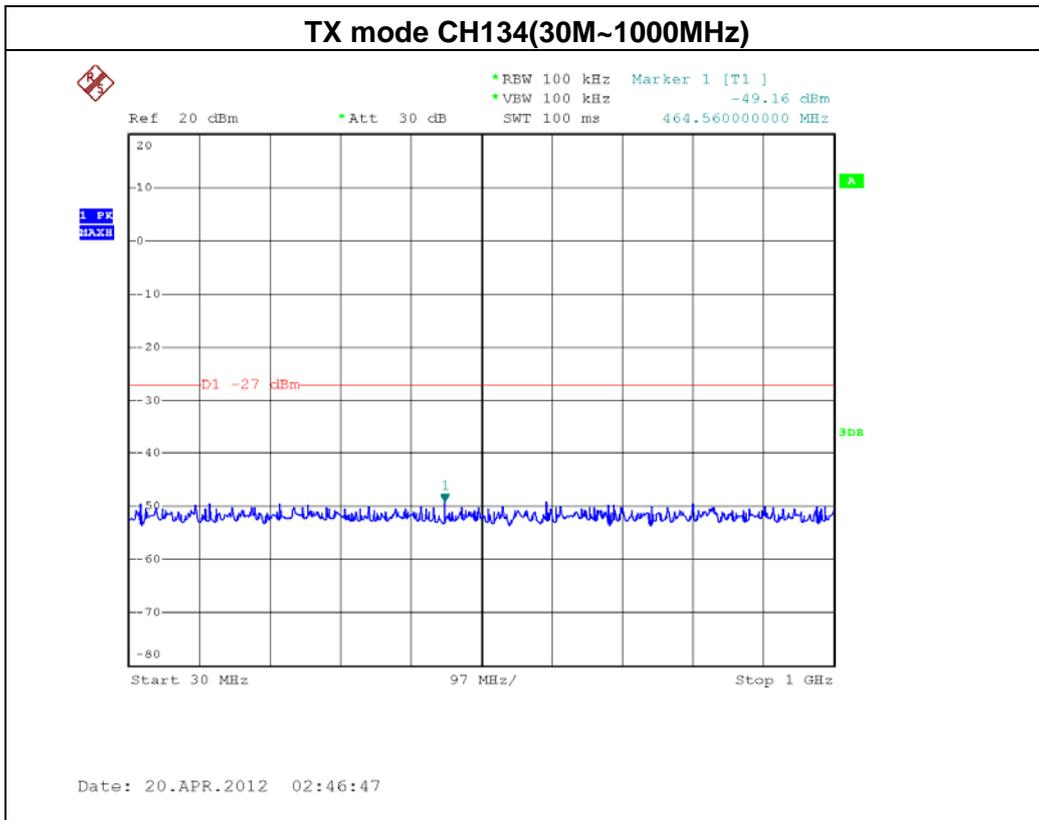
TX mode CH134



Date: 20.APR.2012 02:46:06









8. POWER SPECTRAL DENSITY TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
Power Spectral Density	4 dBm	5150 - 5250	PASS
	11 dBm	5250 - 5350	PASS
	11 dBm	5470 - 5725	PASS

8.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Next Calibration
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov.26.2011	Nov.26.2012

Remark: " N/A" denotes No Model Name, Serial No. or No Calibration specified.

8.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

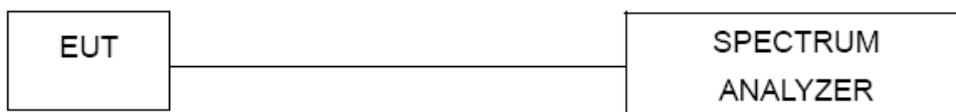
b.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	= 1 MHz.
VB	≥ 3 MHz.
Detector	RMS
Trace	Max Hold
Sweep Time	Auto

8.1.3 DEVIATION FROM STANDARD

No deviation.

8.1.4 TEST SETUP



8.1.5 EUT OPERATION CONDITIONS

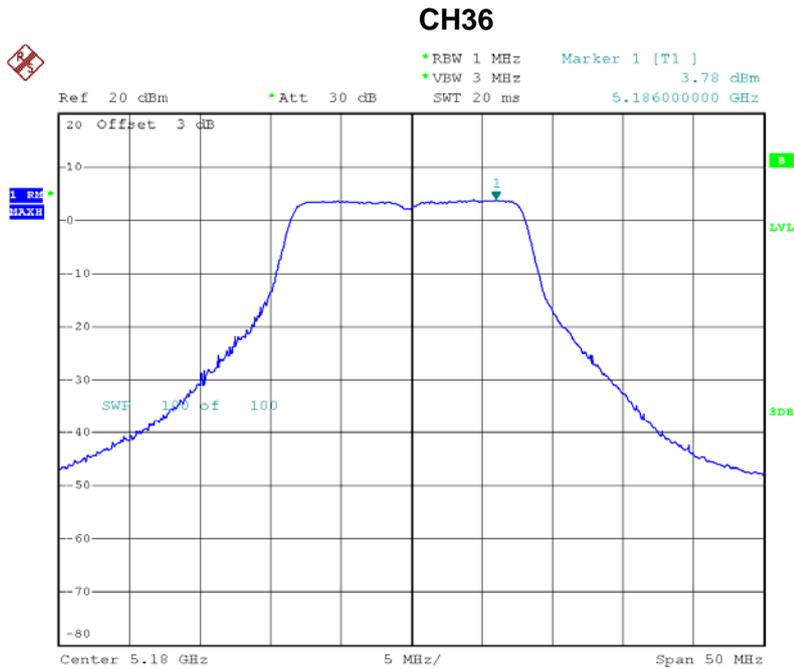
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



8.1.6 TEST RESULTS

EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/TX A Mode/CH36, CH40, CH48		

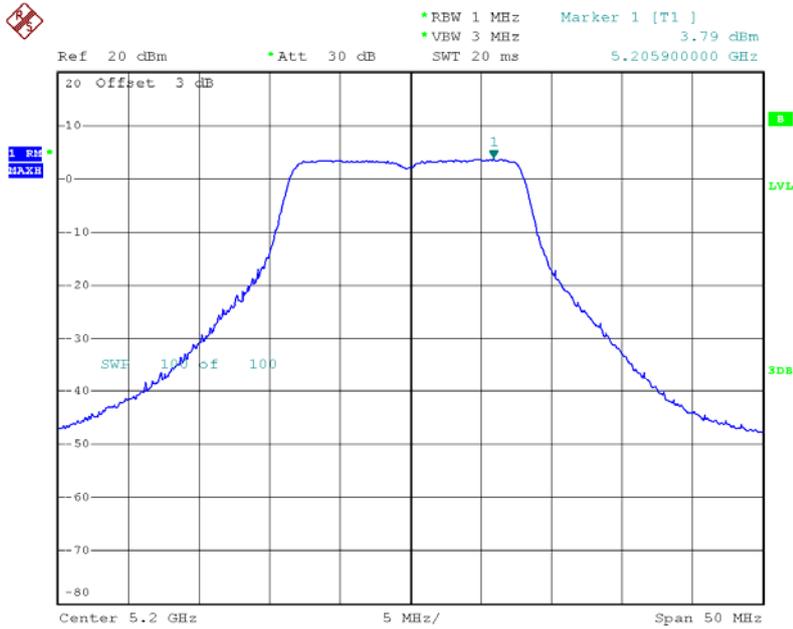
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	3.78	4.00
CH40	5210	3.79	4.00
CH48	5240	3.60	4.00



Date: 8.MAY.2012 10:02:42

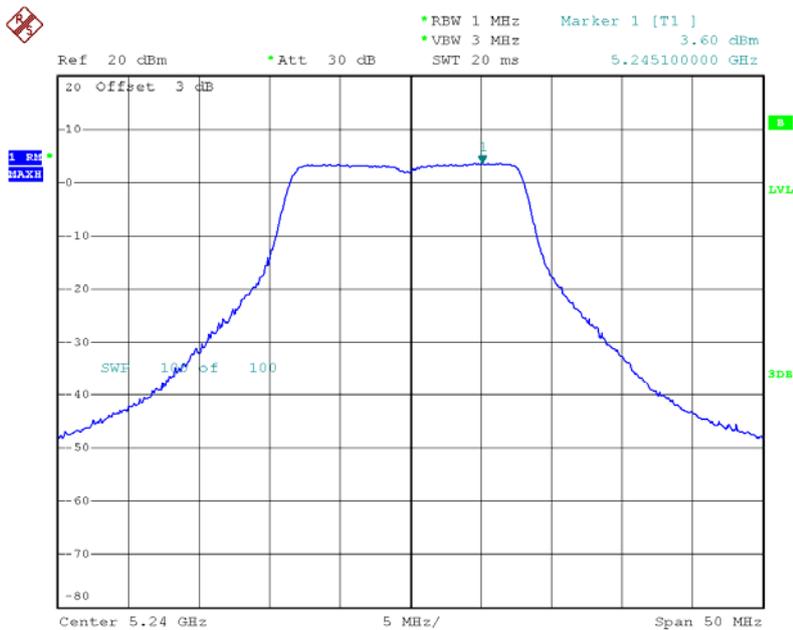


CH40



Date: 8.MAY.2012 10:04:29

CH48



Date: 8.MAY.2012 10:05:47



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	-2.11	4.00
CH40	5210	-2.02	4.00
CH48	5240	-2.08	4.00

ANT 2			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	-2.11	4.00
CH40	5210	-2.06	4.00
CH48	5240	-1.77	4.00

Antenna Amphenol-SAA (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	0.90	1.6
CH40	5210	0.97	1.6
CH48	5240	1.09	1.6

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.**
And after obtain each individual transmitter chain power, then sum the output power by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain 2})/10^{\text{log}}) + ((\text{dBm}/\text{Chain N})/10^{\text{log}}) =$$
Combined peak output power in mW.
- (2) **Antenna Gain 1=5.3 dBi, Antenna Gain 2=5.5 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi, that is
 Directional gain=8.4; So, the out power limit is $17-8.4+6=27.6$; and power density limit is $4-8.4+6=1.6$



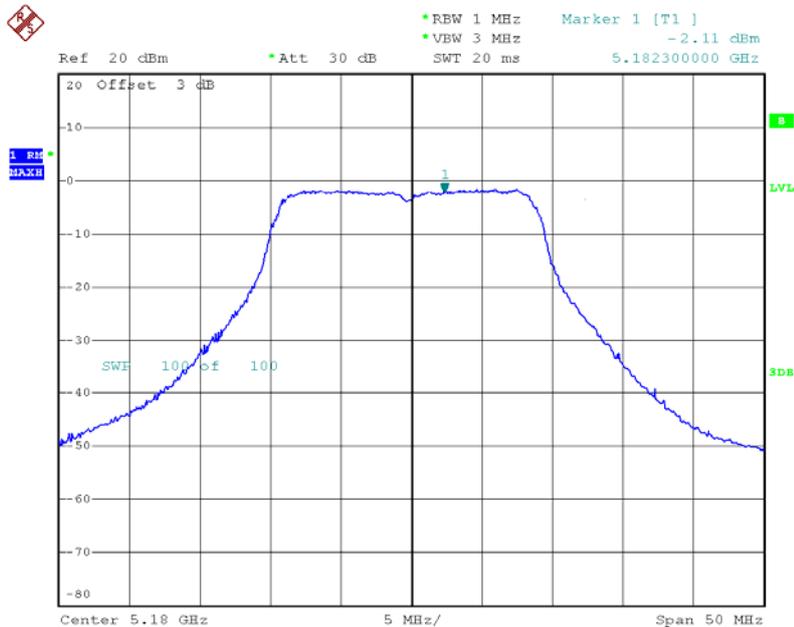
Nippon Antenna(Shanghai) (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH36	5180	0.90	1.34
CH40	5210	0.97	1.34
CH48	5240	1.09	1.34

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.**
And after obtain each individual transmitter chain power, then sum the output power by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\wedge}\text{Log}) + ((\text{dBm}/\text{Chain 2})/10^{\wedge}\text{log}) + ((\text{dBm}/\text{Chain N})/10^{\wedge}\text{log}) =$$
Combined peak output power in mW.
- (2) **Antenna Gain 0=5.79dBi, Antenna Gain 1=5.51 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi, that is Directional gain=8.66; So,the out power limit is $17-8.66+6=14.34$; and power density limit is $4-8.66+6=1.34$

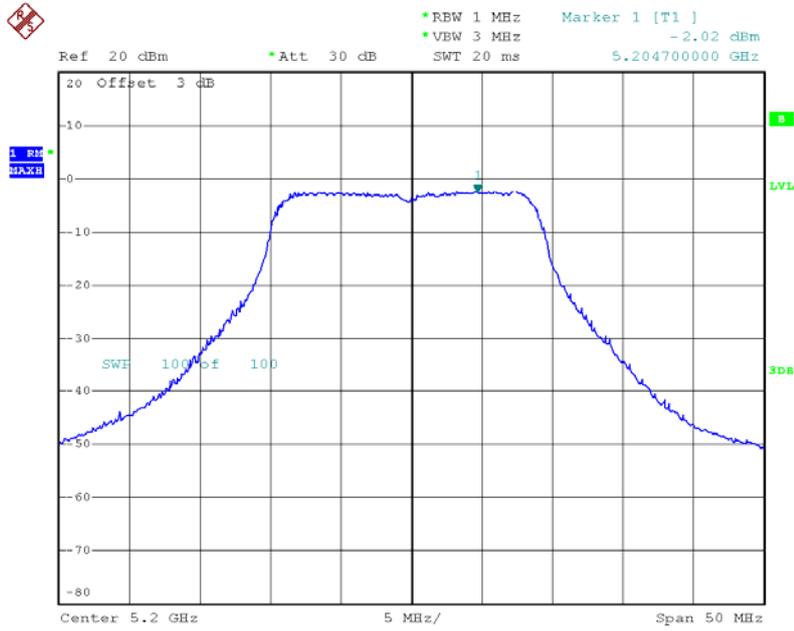
CH36-ANT 1



Date: 8.MAY.2012 11:13:28

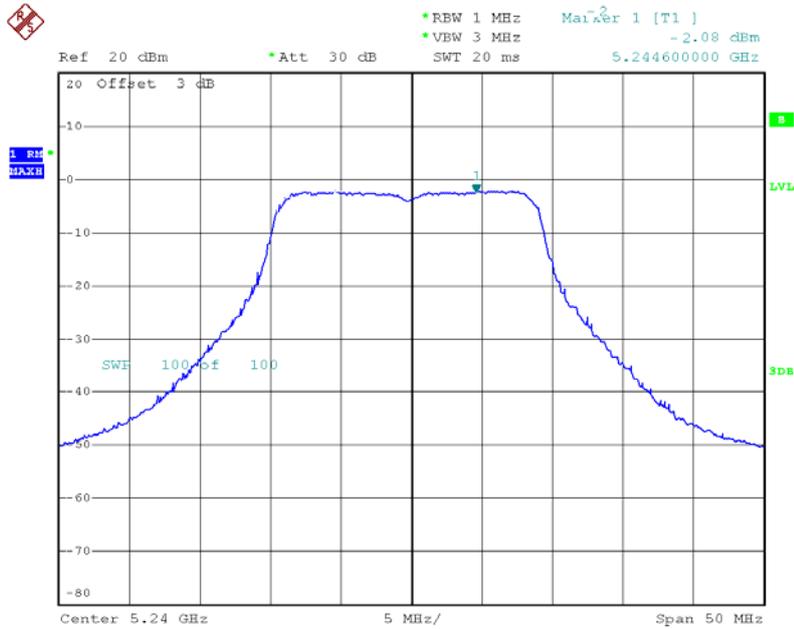


CH40-ANT 1



Date: 8.MAY.2012 11:12:50

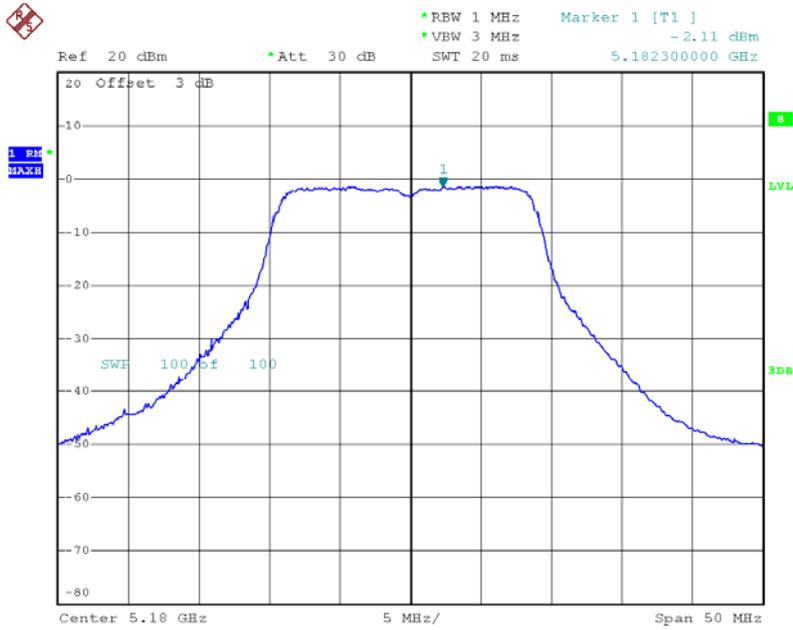
CH48-ANT 1



Date: 8.MAY.2012 11:11:00

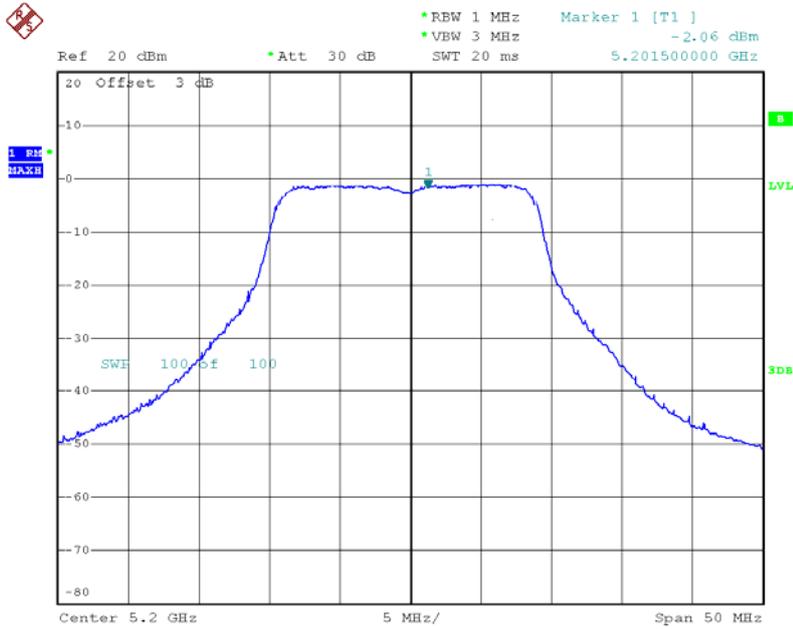


CH36-ANT 2



Date: 8.MAY.2012 11:15:58

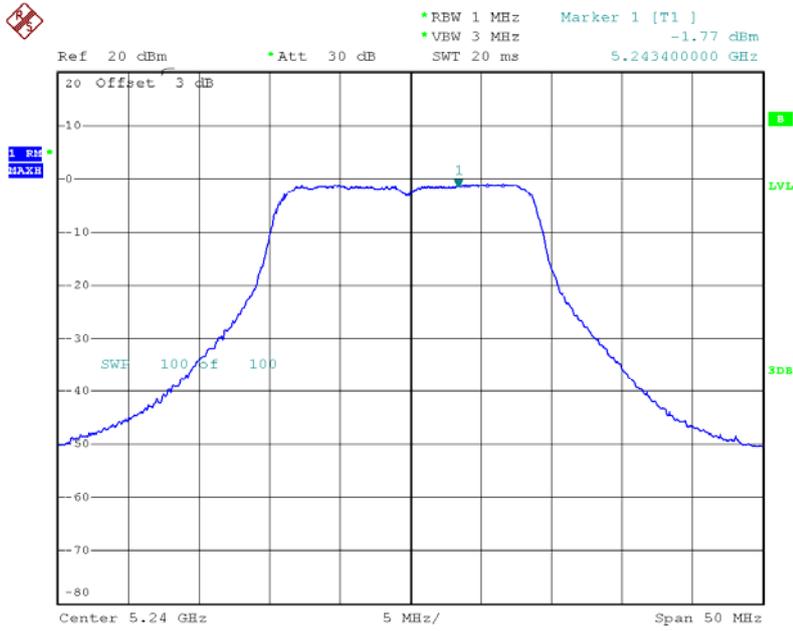
CH40-ANT 2



Date: 8.MAY.2012 11:16:50



CH48-ANT 2



Date: 8.MAY.2012 11:40:30



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46 (ANT 1)		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	-2.23	4.00
CH46	5230	-1.92	4.00

ANT 2			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	-2.35	4.00
CH46	5230	-2.76	4.00

Antenna Amphenol-SAA (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	0.72	1.6
CH46	5230	0.69	1.6

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.**
And after obtain each individual transmitter chain power, then sum the output power by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain 2})/10^{\text{log}}) + ((\text{dBm}/\text{ChainN})/10^{\text{log}}) =$$
Combined peak output power in mW.
- (2) **Antenna Gain 1=5.3 dBi, Antenna Gain 2=5.5 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10})/N]$ dBi, that is Directional gain=8.4; So, the out power limit is 17-8.4+6=27.6; and power density limit is 4-8.4+6=1.6



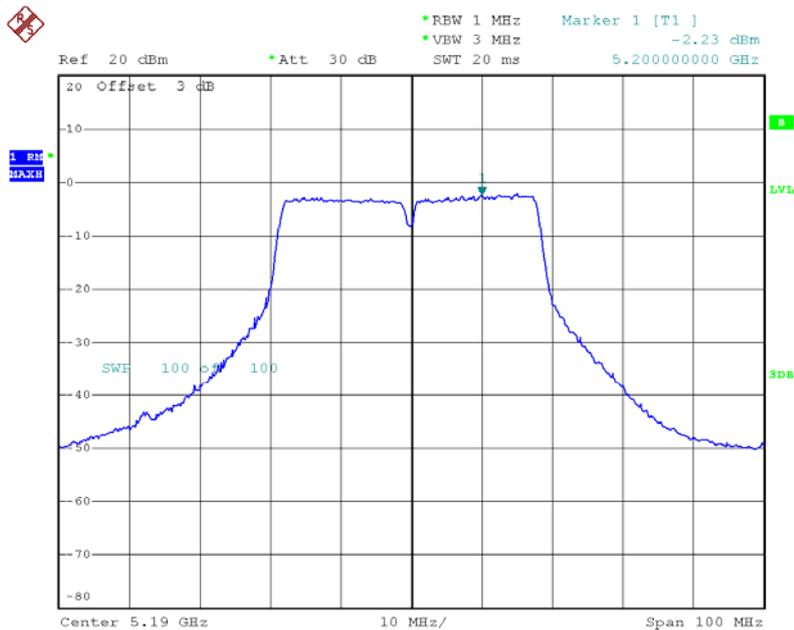
Nippon Antenna(Shanghai) (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH38	5190	0.72	1.34
CH46	5230	0.69	1.34

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method. And after obtain each individual transmitter chain power, then sum the output power by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\wedge}\text{Log}) + ((\text{dBm}/\text{Chain 2})/10^{\wedge}\text{log}) + ((\text{dBm}/\text{Chain N})/10^{\wedge}\text{log}) =$$
Combined peak output power in mW.**
- (2) **Antenna Gain 0=5.79dBi, Antenna Gain 1=5.51 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi, that is Directional gain=8.66; So,the out power limit is 17-8.66+6=14.34; and power density limit is 4-8.66+6=1.34

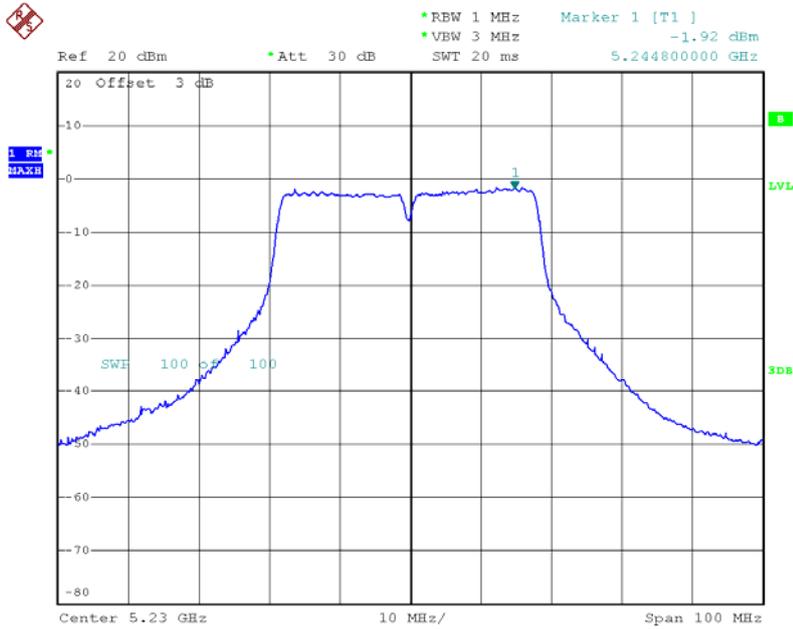
CH38-ANT 1



Date: 8.MAY.2012 12:08:09

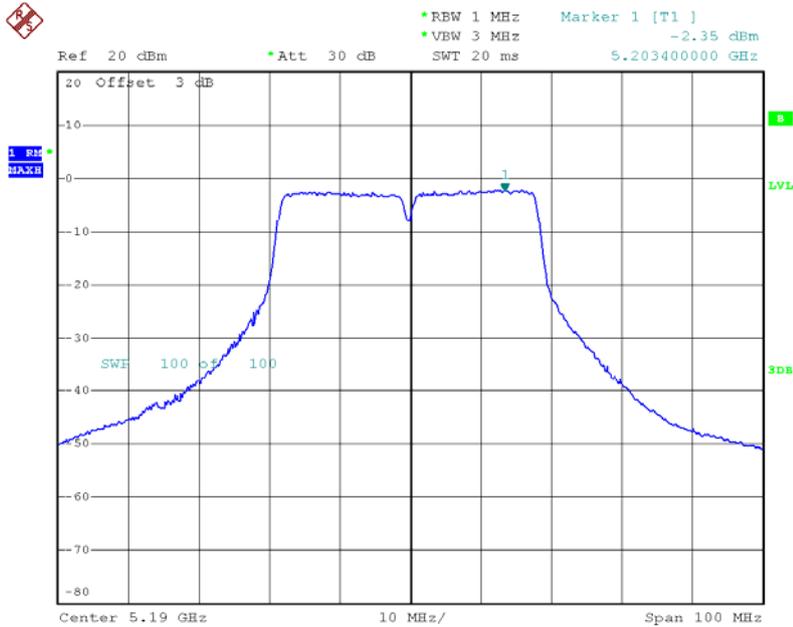


CH46-ANT 1



Date: 8.MAY.2012 12:06:36

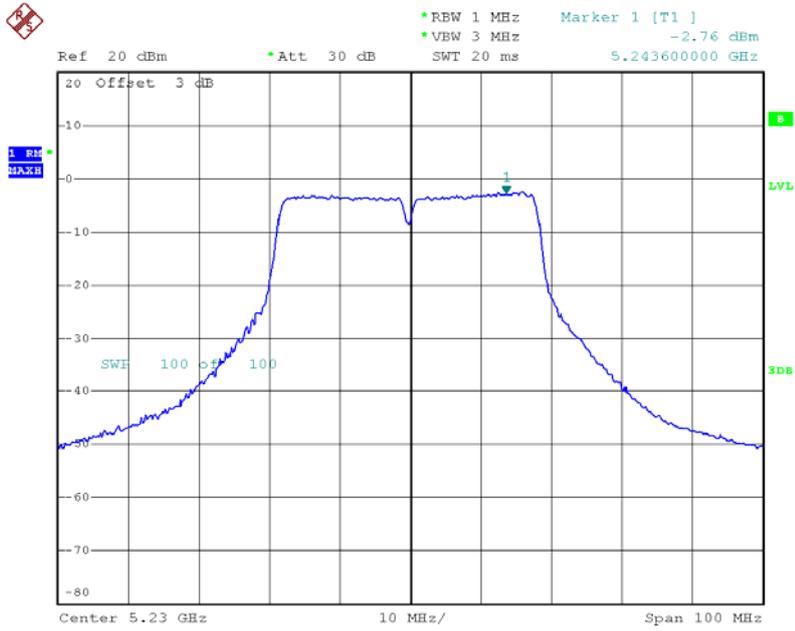
CH38-ANT 2



Date: 8.MAY.2012 12:09:21



CH46-ANT 2

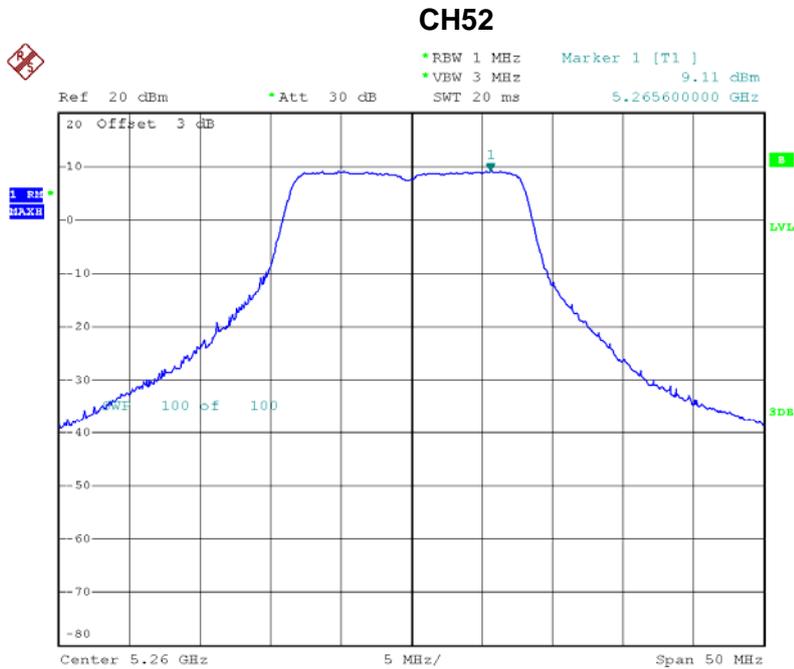


Date: 8.MAY.2012 12:10:18



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX A Mode/CH52, CH56, CH64		

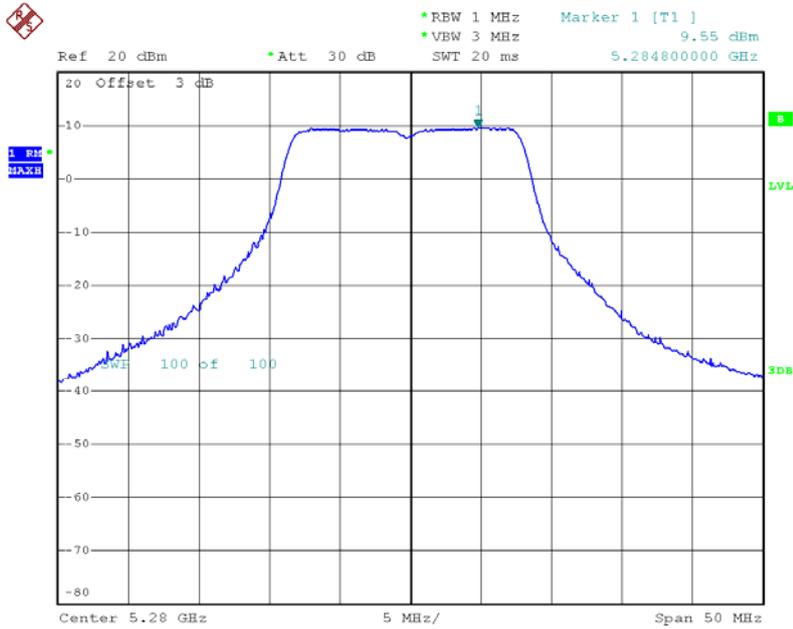
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH52	5260	9.11	11
CH56	5280	9.55	11
CH64	5320	10.28	11



Date: 8.MAY.2012 10:17:28

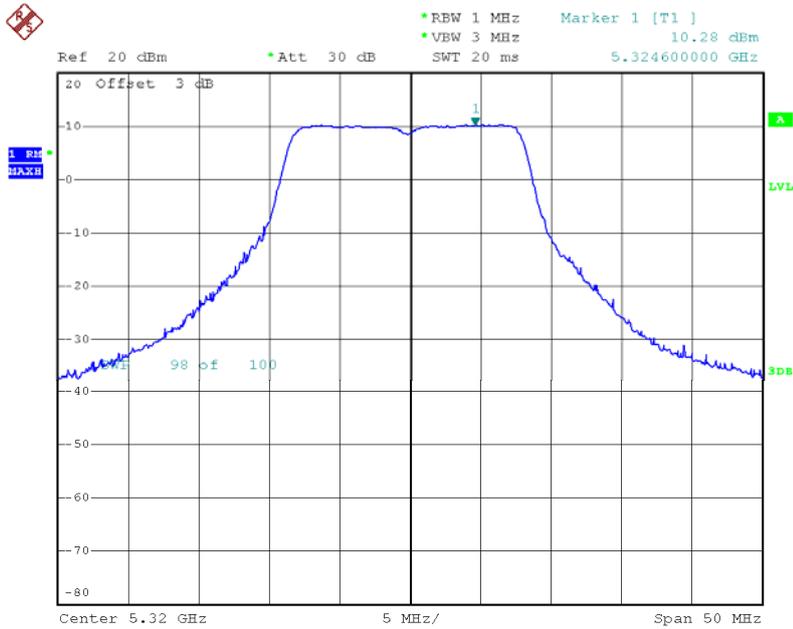


CH56



Date: 8.MAY.2012 10:18:28

CH64



Date: 8.MAY.2012 10:22:47



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N20 Mode/CH52, CH56, CH64		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH52	5260	4.94	11
CH56	5280	4.75	11
CH64	5320	4.55	11

ANT 2			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH52	5260	3.18	11
CH56	5280	3.46	11
CH64	5320	4.39	11

Antenna Amphenol-SAA (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH52	5260	7.16	8.6
CH56	5280	7.16	8.6
CH64	5320	7.48	8.6

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.**
And after obtain each individual transmitter chain power, then sum the output power by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain 2})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain N})/10^{\text{Log}}) =$$
Combined peak output power in mW.
- (2) **Antenna Gain 1=5.3 dBi, Antenna Gain 2=5.5 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi , that is Directional gain=8.4; So, the out power limit is 24-8.4+6=21.6; and power density limit is 11-8.4+6=8.6



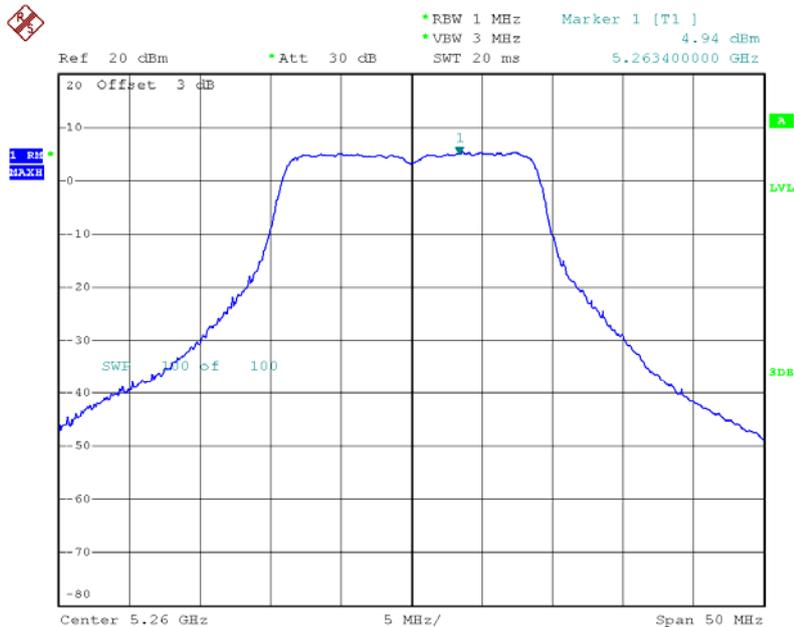
Nippon Antenna(Shanghai) (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH52	5260	7.16	8.34
CH56	5280	7.16	8.34
CH64	5320	7.48	8.34

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.**
And after obtain each individual transmitter chain power, then sum the output power by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\wedge}\text{Log}) + ((\text{dBm}/\text{Chain 2})/10^{\wedge}\text{log}) + ((\text{dBm}/\text{Chain N})/10^{\wedge}\text{log}) =$$
Combined peak output power in mW.
- (2) **Antenna Gain 0=5.79dBi, Antenna Gain 1=5.51 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi, that is
 Directional gain=8.66; So,the out power limit is $24-8.66+6=21.34$; and power density limit is $11-8.66+6=8.34$

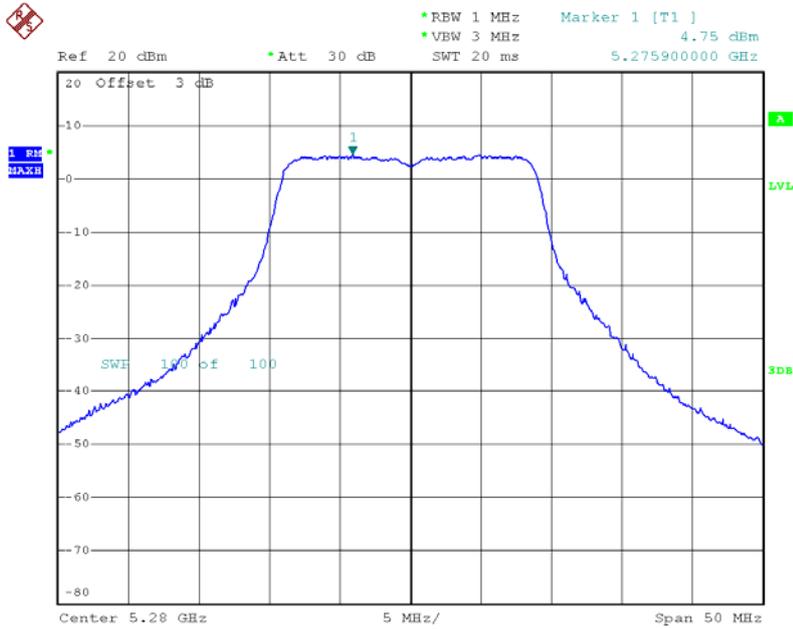
CH52-ANT 1



Date: 15.JUL.2012 10:56:35

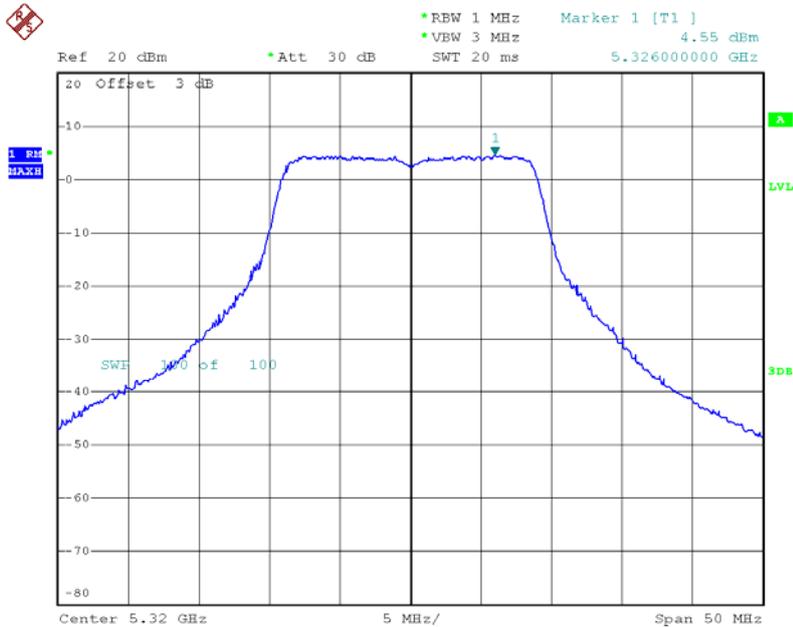


CH56-ANT 1



Date: 15.JUL.2012 11:00:15

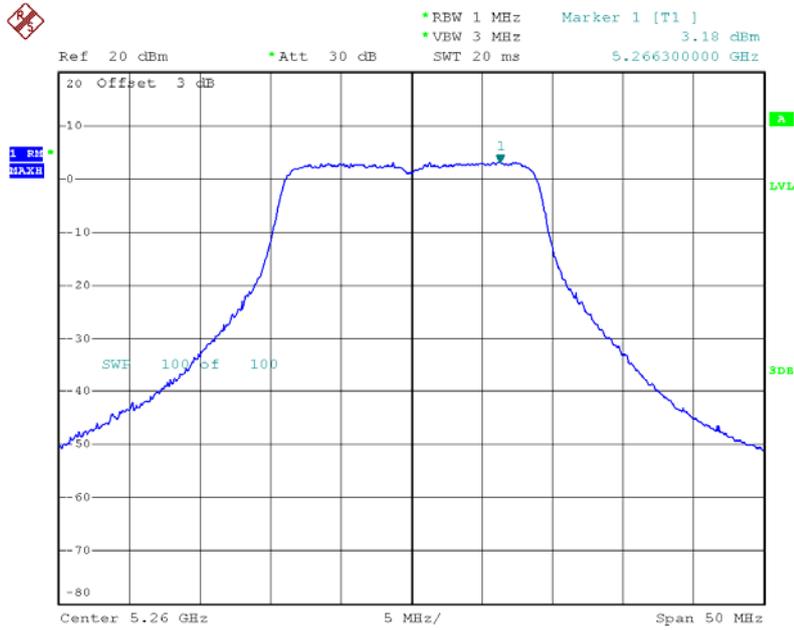
CH64-ANT 1



Date: 15.JUL.2012 11:00:51

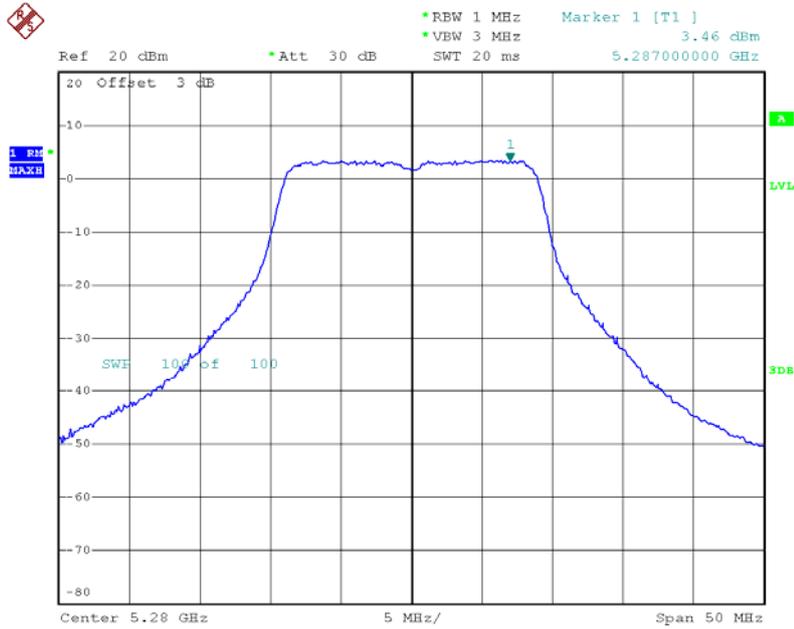


CH52-ANT 2



Date: 15.JUL.2012 11:44:05

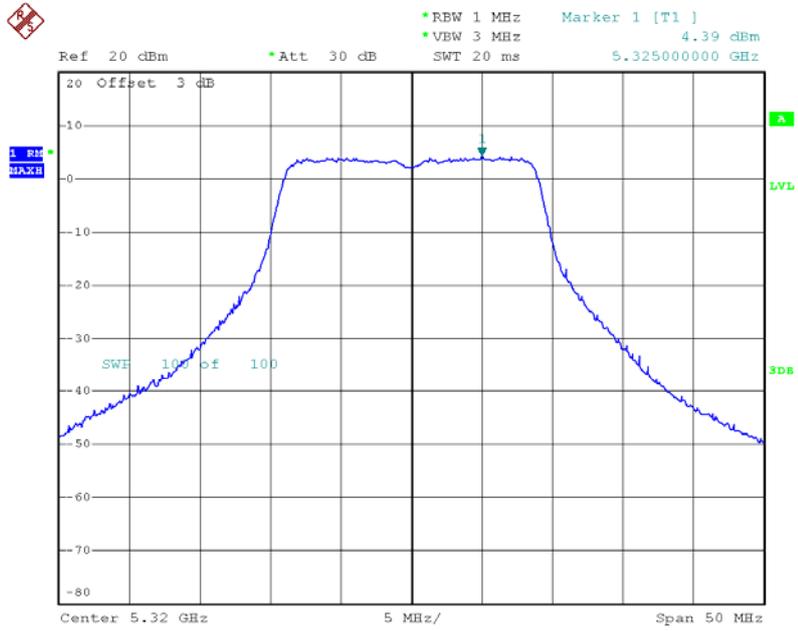
CH56-ANT 2



Date: 15.JUL.2012 11:42:52



CH64-ANT 2



Date: 15.JUL.2012 11:42:05



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N40 Mode/CH54, CH62		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH54	5270	4.13	11
CH62	5310	4.09	11

ANT 2			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH54	5270	2.99	11
CH62	5310	3.72	11

Antenna Amphenol-SAA (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH54	5270	6.61	8.6
CH62	5310	6.92	8.6

Remark :

- (1) **The MIMO test requirement, RF power density shall measure each transmitter chain by using channel power density method.**
And after obtain each individual transmitter chain power density, then sum the power density by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain 2})/10^{\text{log}}) + ((\text{dBm}/\text{ChainN})/10^{\text{log}}) =$$
Combined power density in mW.
- (2) **Antenna Gain 0=5.3 dBi, Antenna Gain 1=5.5 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10})/N]$ dBi, that is Directional gain=8.4; So,the out power limit is 24-8.4+6=21.6; and power density limit is 11-8.4+6=8.6



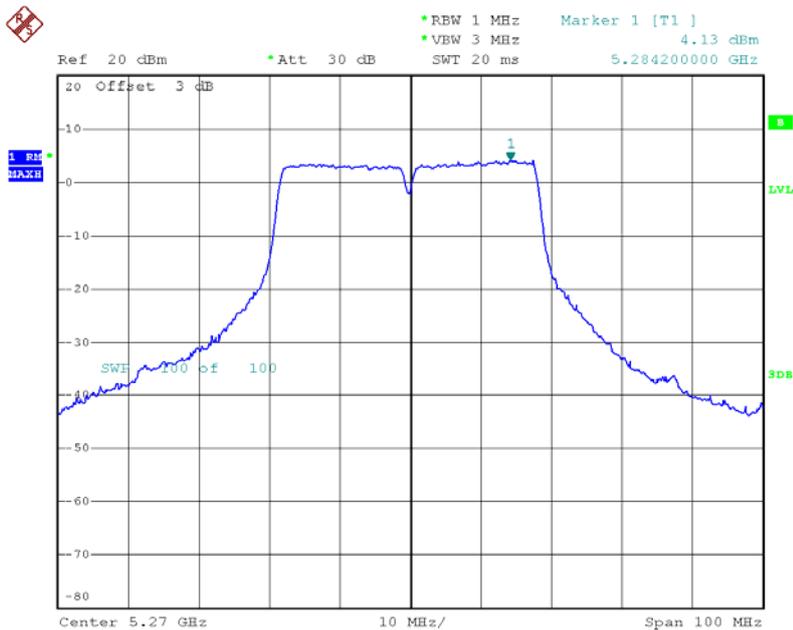
Nippon Antenna(Shanghai) (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH54	5270	6.61	8.34
CH62	5310	6.92	8.34

Remark :

- (1) **The MIMO test requirement, RF power density shall measure each transmitter chain by using channel power density method. And after obtain each individual transmitter chain power density, then sum the power density by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\wedge}\text{Log}) + ((\text{dBm}/\text{Chain 2})/10^{\wedge}\text{log}) + ((\text{dBm}/\text{ChainN})/10^{\wedge}\text{log}) =$$
Combined power density in mW.**
- (2) **Antenna Gain 0=5.79 dBi, Antenna Gain 1=5.51 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi, that is Directional gain=8.66; So,the out power limit is $24-8.66+6=21.34$; and power density limit is $11-8.66+6=8.34$

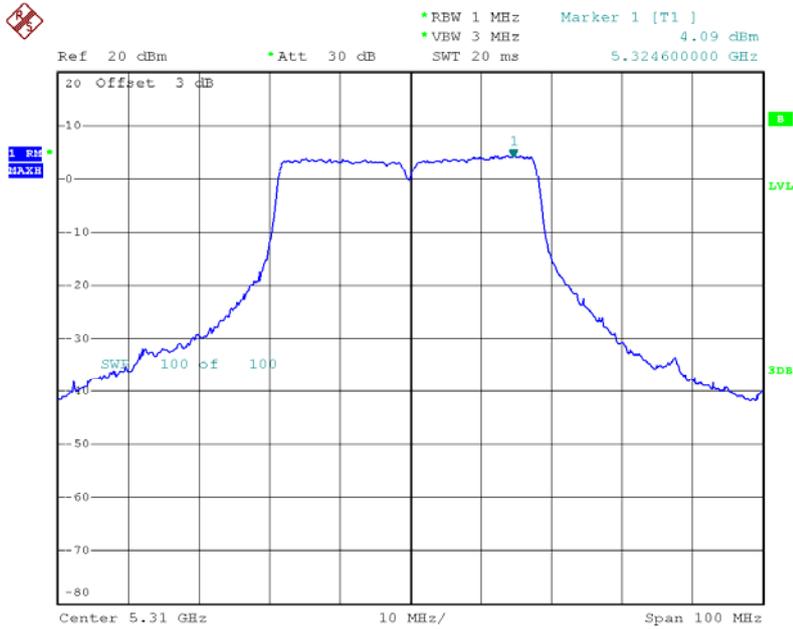
CH54-ANT 1



Date: 8.MAY.2012 12:04:38

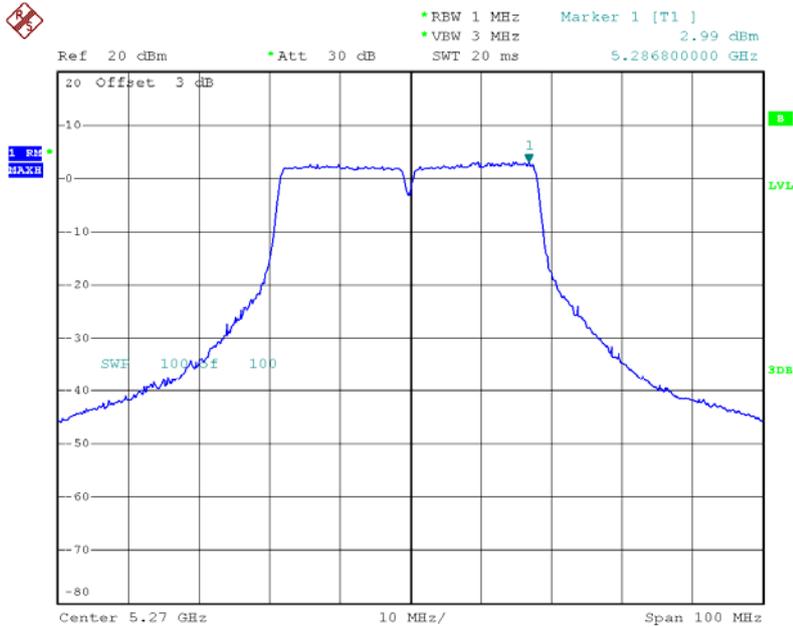


CH62-ANT 1



Date: 8.MAY.2012 12:02:37

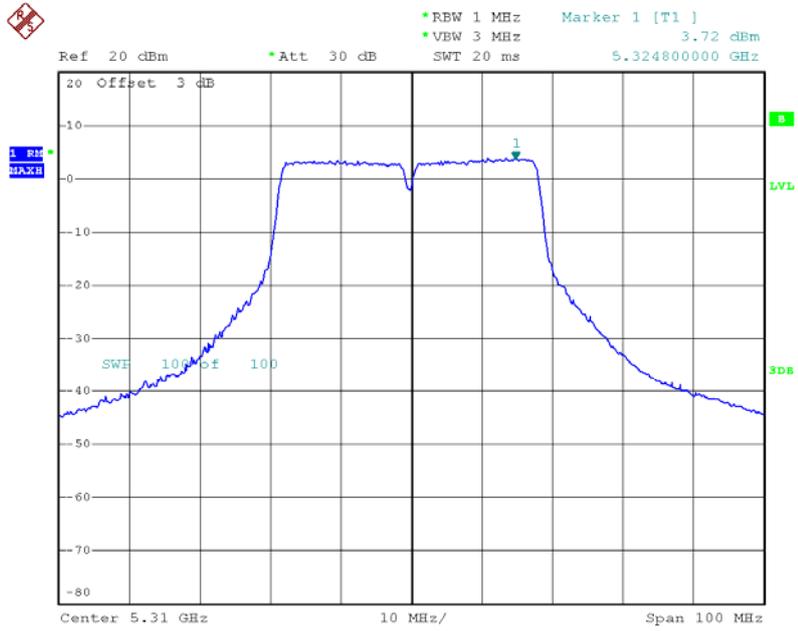
CH54-ANT 2



Date: 8.MAY.2012 12:12:31



CH62-ANT 2

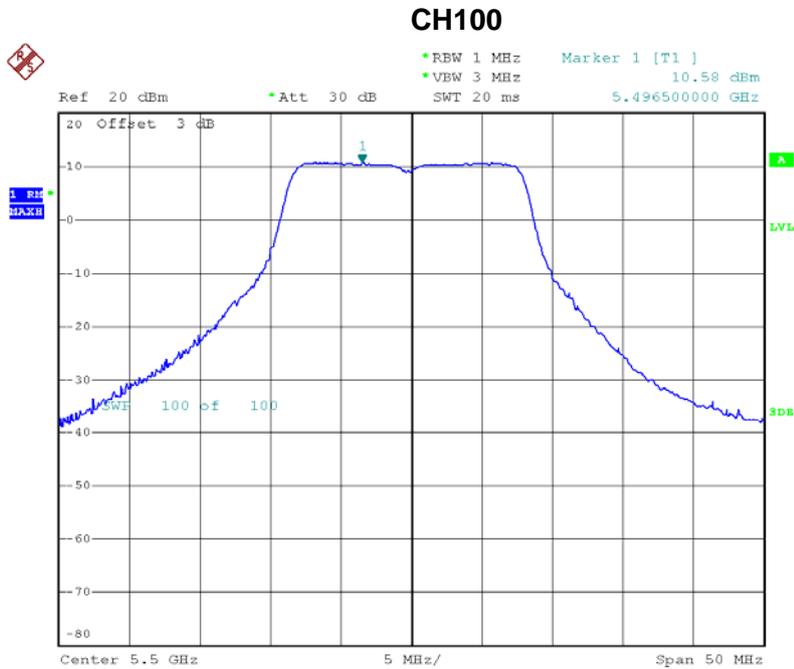


Date: 8.MAY.2012 12:11:29



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX A Mode/CH100, CH116, CH140		

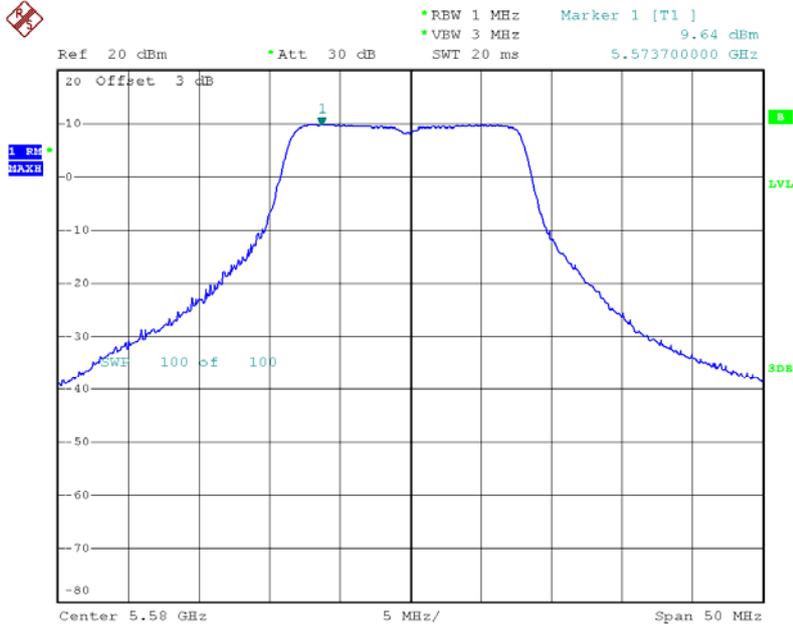
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH100	5500	10.58	11
CH116	5580	9.64	11
CH140	5700	9.26	11



Date: 8.MAY.2012 10:25:24

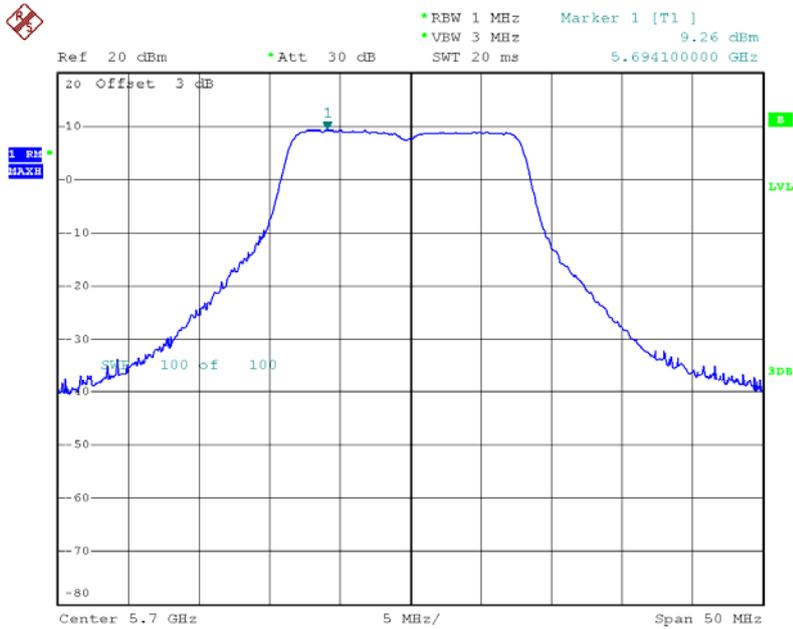


CH116



Date: 8.MAY.2012 10:28:32

CH140



Date: 8.MAY.2012 10:30:29



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX N20 Mode/CH100, CH116, CH140		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH100	5500	4.50	11
CH116	5580	4.84	11
CH140	5700	5.23	11

ANT 2			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH100	5500	4.96	11
CH116	5580	4.72	11
CH140	5700	4.83	11

Antenna Amphenol-SAA (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH100	5500	7.75	8.6
CH116	5580	7.79	8.6
CH140	5700	8.04	8.6

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.**
And after obtain each individual transmitter chain power, then sum the output power by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain 2})/10^{\text{log}}) + ((\text{dBm}/\text{Chain N})/10^{\text{log}}) =$$
Combined peak output power in mW.
- (2) **Antenna Gain 1=5.3 dBi, Antenna Gain 2=5.5 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi, that is Directional gain=8.4; So, the out power limit is 24-8.4+6=21.6; and power density limit is 11-8.4+6=8.6



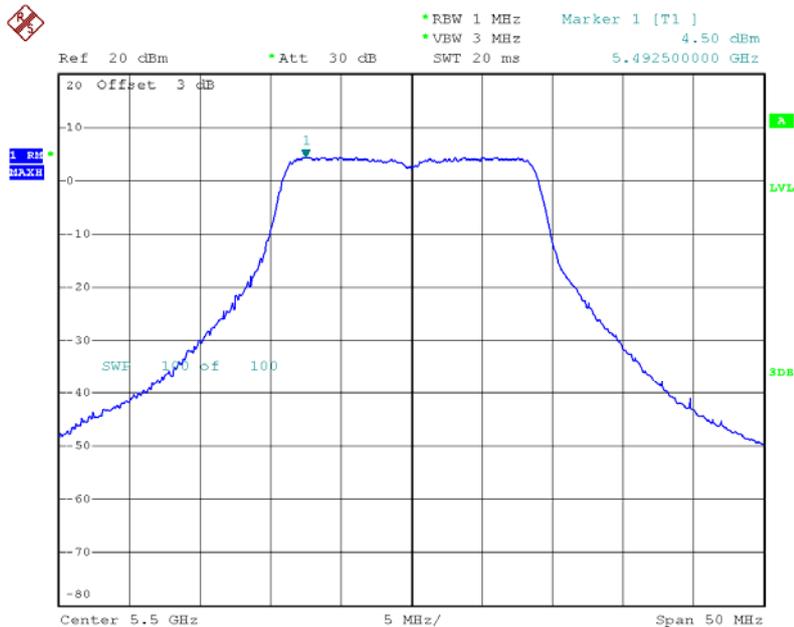
Nippon Antenna(Shanghai) (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH100	5500	7.75	8.34
CH116	5580	7.79	8.34
CH140	5700	8.04	8.34

Remark :

- (1) **The MIMO test requirement, RF conducted output power shall measure each transmitter chain by using channel power method.**
And after obtain each individual transmitter chain power, then sum the output power by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\wedge}\text{Log}) + ((\text{dBm}/\text{Chain 2})/10^{\wedge}\text{log}) + ((\text{dBm}/\text{ChainN})/10^{\wedge}\text{log}) =$$
Combined peak output power in mW.
- (2) **Antenna Gain 0=5.79dBi, Antenna Gain 1=5.51 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi, that is
 Directional gain=8.66; So,the out power limit is $24-8.66+6=21.34$; and power density limit is $11-8.66+6=8.34$

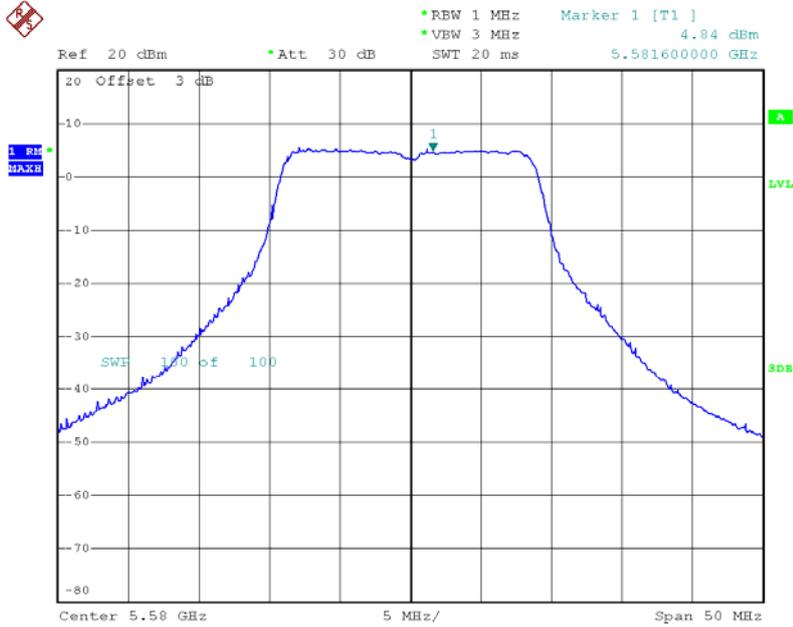
CH100-ANT 1



Date: 15.JUL.2012 11:27:06

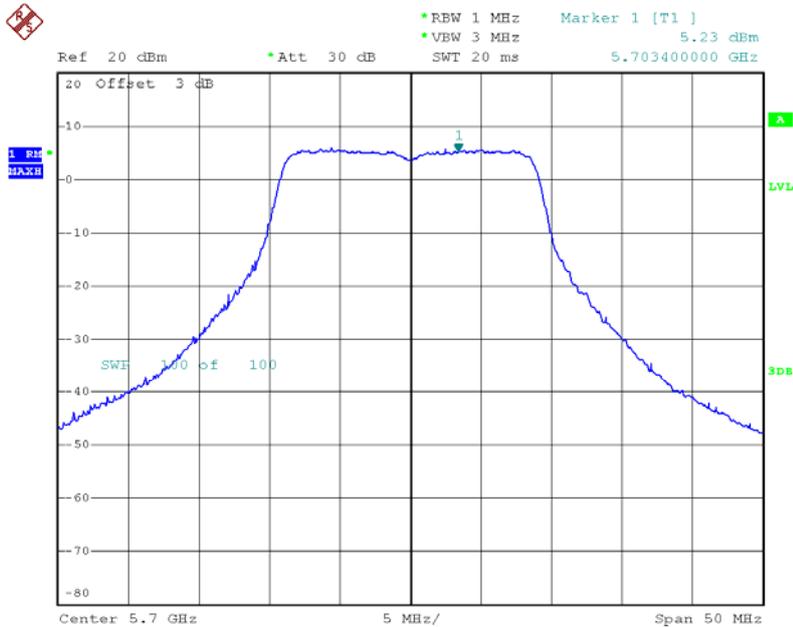


CH116-ANT 1



Date: 15.JUL.2012 11:28:35

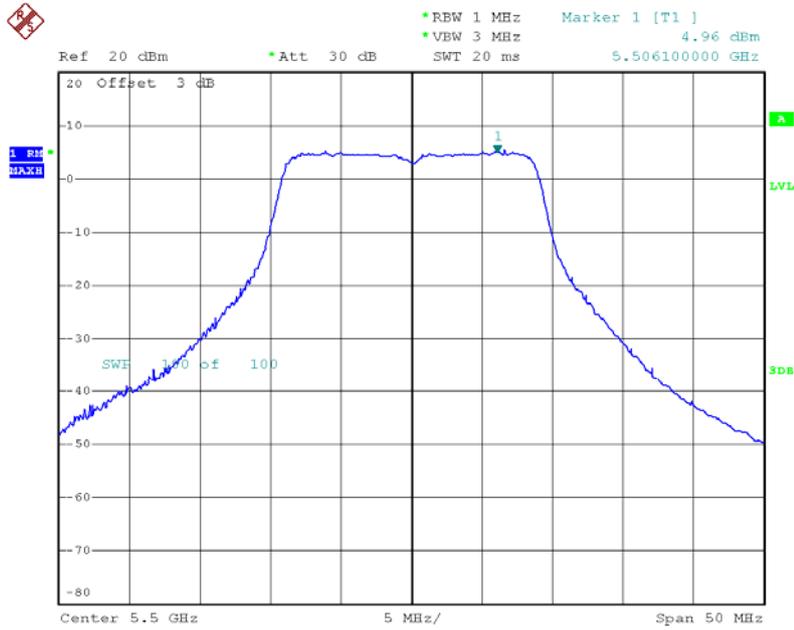
CH140-ANT 1



Date: 15.JUL.2012 11:30:36

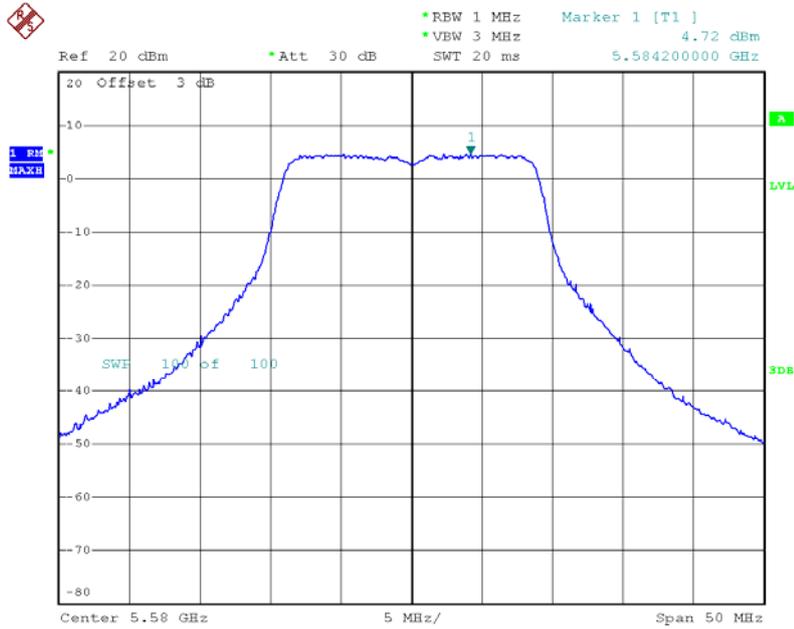


CH100-ANT 2



Date: 15.JUL.2012 11:40:35

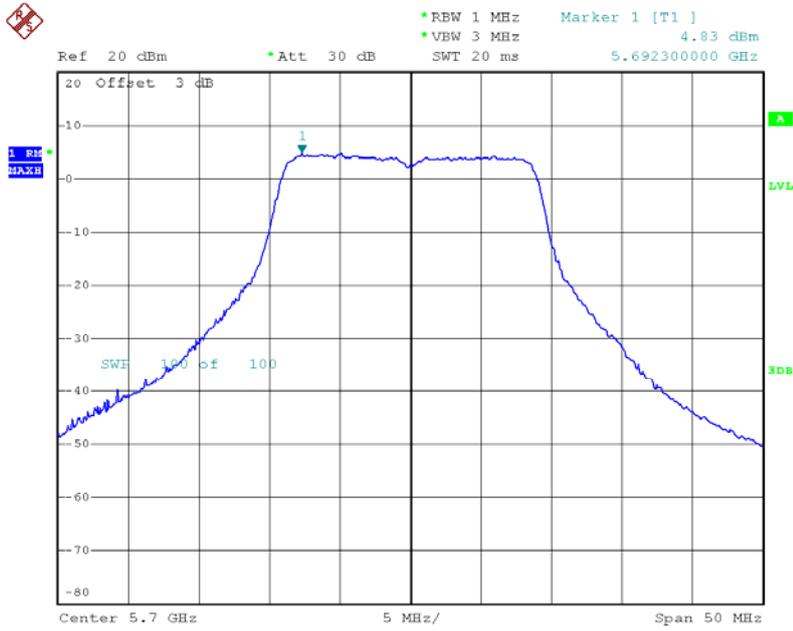
CH116-ANT 2



Date: 15.JUL.2012 11:37:01



CH140-ANT 2



Date: 15.JUL.2012 11:35:20



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N40 Mode/CH102, CH110,CH134		

ANT 1			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH102	5510	4.27	11
CH110	5550	4.69	11
CH134	5670	4.28	11

ANT 2			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH102	5510	4.18	11
CH110	5550	4.29	11
CH134	5670	4.28	11

Antenna Amphenol-SAA (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH102	5510	7.24	8.6
CH110	5550	7.50	8.6
CH134	5670	7.29	8.6

Remark :

- (1) **The MIMO test requirement, RF power density shall measure each transmitter chain by using channel power density method.**
And after obtain each individual transmitter chain power density, then sum the power density by using the following formula:
 $((\text{dBm}/\text{Chain } 1)/10^{\text{Log}}) + ((\text{dBm}/\text{Chain } 2)/10^{\text{log}}) + ((\text{dBm}/\text{Chain } N)/10^{\text{log}}) =$
Combined power density in mW.
- (2) **Antenna Gain 0=5.3 dBi, Antenna Gain 1=5.5 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,
Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N]$ dBi, that is Directional gain=8.4; So, the out power limit is 24-8.4+6=21.6; and power density limit is 11-8.4+6=8.6



Nippon Antenna(Shanghai) (ANT 1+ANT 2)			
Test Channel	Frequency (MHz)	Power Density (dBm)	LIMIT (dBm)
CH102	5510	7.24	8.34
CH110	5550	7.50	8.34
CH134	5670	7.29	8.34

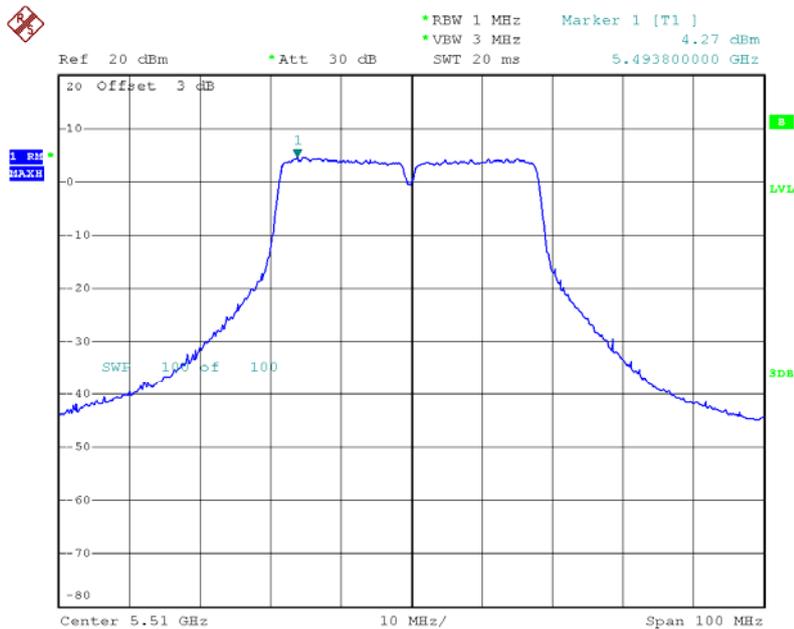
Remark :

- (1) **The MIMO test requirement, RF power density shall measure each transmitter chain by using channel power density method.**
 And after obtain each individual transmitter chain power density, then sum the power density by using the following formula:

$$((\text{dBm}/\text{Chain 1})/10^{\text{Log}}) + ((\text{dBm}/\text{Chain 2})/10^{\text{log}}) + ((\text{dBm}/\text{Chain N})/10^{\text{log}}) =$$
Combined power density in mW.
- (2) **Antenna Gain 0=5.79 dBi, Antenna Gain 1=5.51 dBi**
- (3) This EUT supports MIMO 2T2R, all transmit signals are completely uncorrelated, then,

$$\text{Directional gain} = 10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N] \text{ dBi}$$
 , that is Directional gain=8.66; So,the out power limit is 24-8.66+6=21.34; and power density limit is 11-8.66+6=8.34

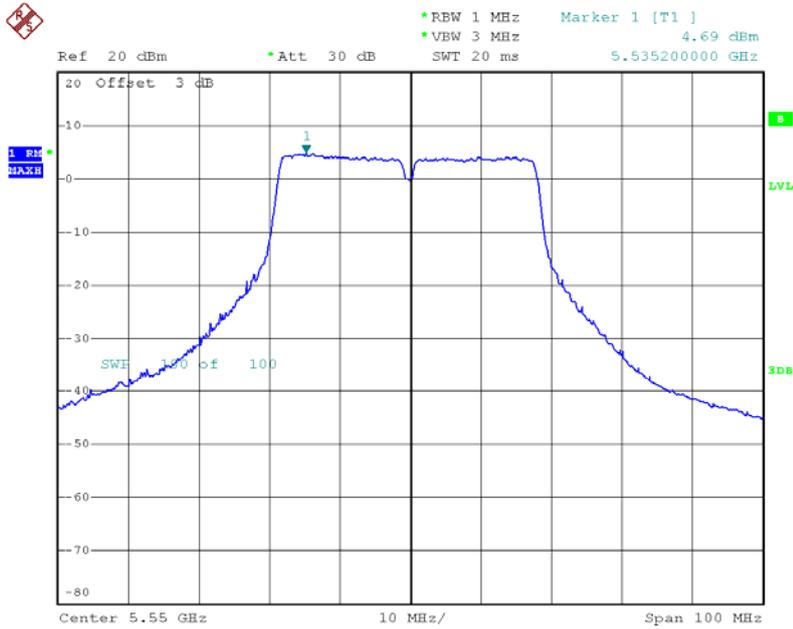
CH102-ANT 1



Date: 8.MAY.2012 11:58:19

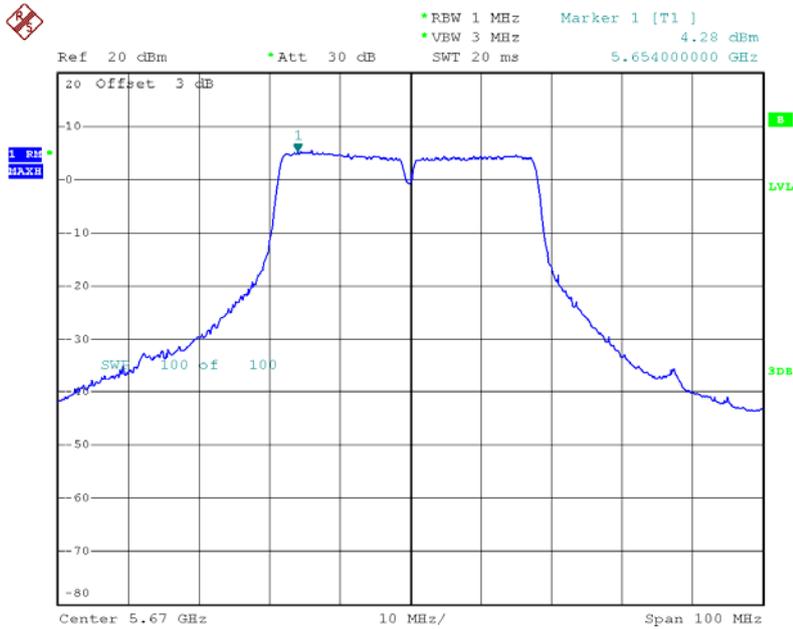


CH110-ANT 1



Date: 8.MAY.2012 11:56:27

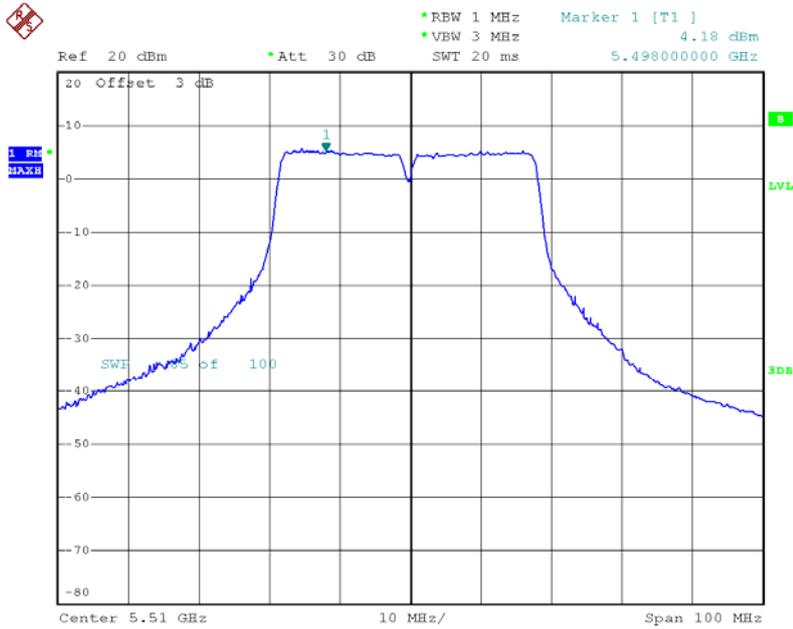
CH134-ANT 1



Date: 8.MAY.2012 11:54:37

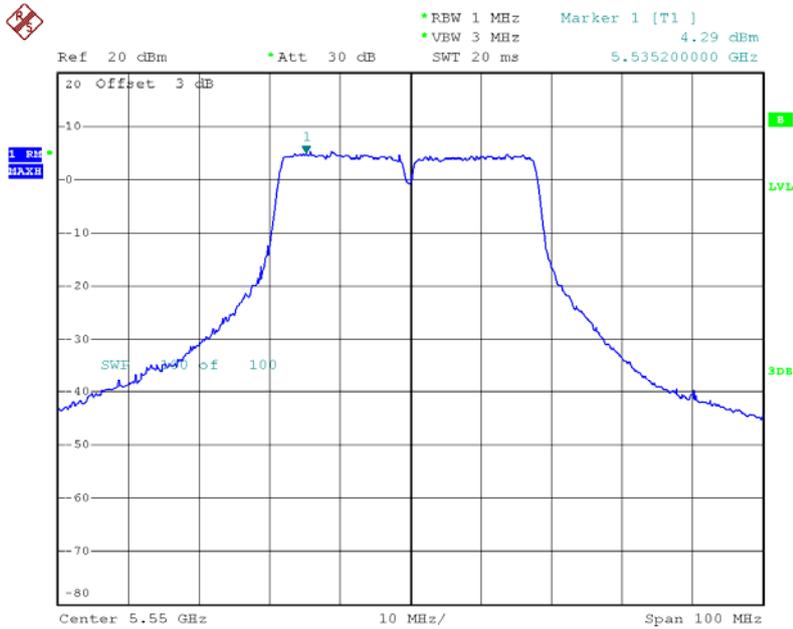


CH102-ANT 2



Date: 8.MAY.2012 12:14:17

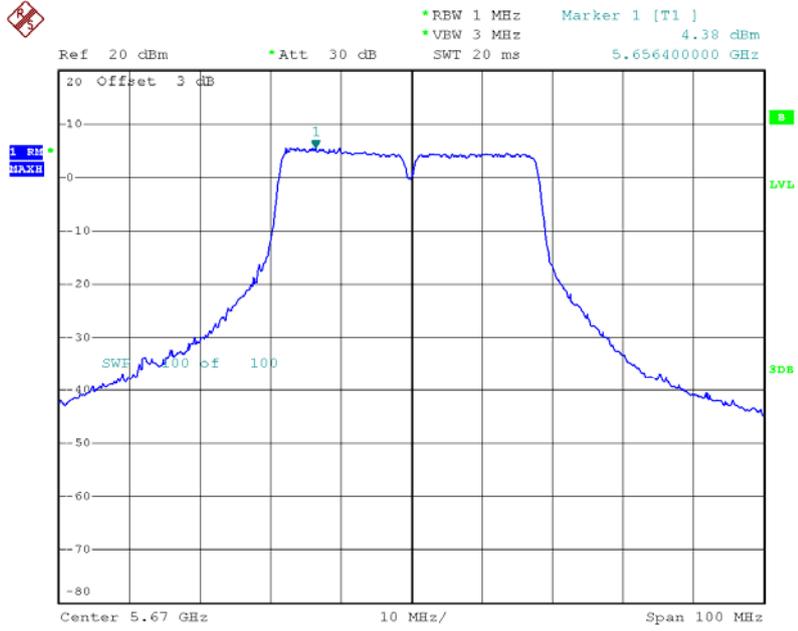
CH110-ANT 2



Date: 8.MAY.2012 12:15:05



CH134-ANT 2



Date: 8.MAY.2012 12:16:30



9. Peak Excursion Measurement

9.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E			
Test Item	Limit	Frequency Range (MHz)	Result
Peak Excursion Measurement	13 dB	5150 - 5250	PASS
		5250 - 5350	PASS
		5470 - 5725	PASS

9.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Next Calibration
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov.26.2011	Nov.26.2012

Remark: " N/A" denotes No Model Name, Serial No. or No Calibration specified.

9.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

b.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz (Peak Trace) / 1000 kHz (Average Trace)
VB	3000 kHz (Peak Trace) / 3000 kHz (Average Trace)
Detector	Peak (Peak Trace) / RMS (Average Trace)
Trace	Max Hold
Sweep Time	60s

c. Peak Trace: Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and maxhold settings.

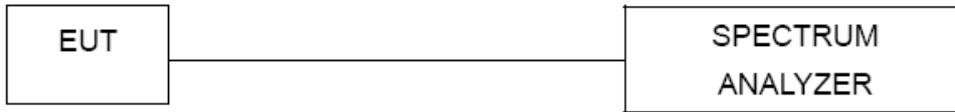
d. Average set RBW = 1 MHz, VBW = 3 MHz with RMS detector and trace average across 100 traces in power averaging mode.

9.1.3 DEVIATION FROM STANDARD

No deviation.



9.1.4 TEST SETUP



9.1.5 EUT OPERATION CONDITIONS

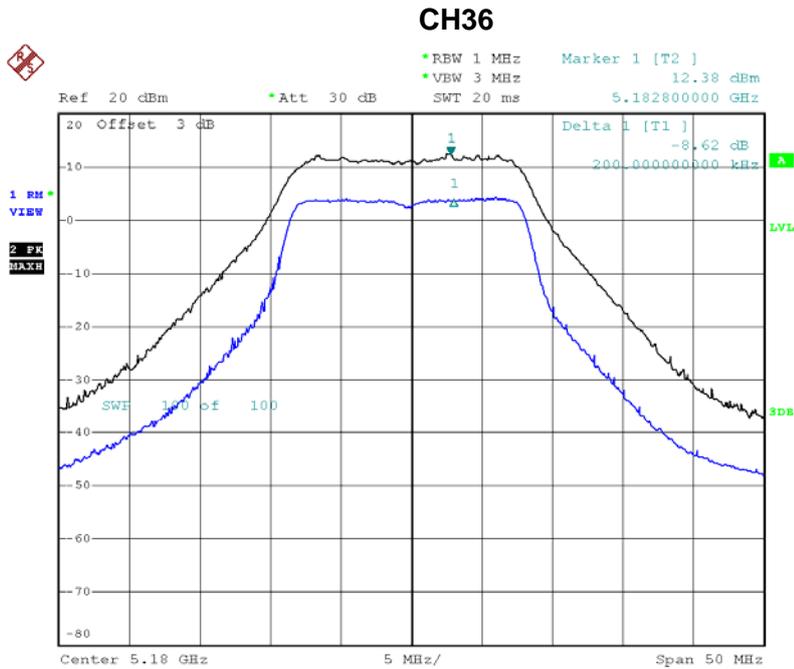
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



9.1.6 TEST RESULTS

EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/TX A Mode/CH36, CH40, CH48		

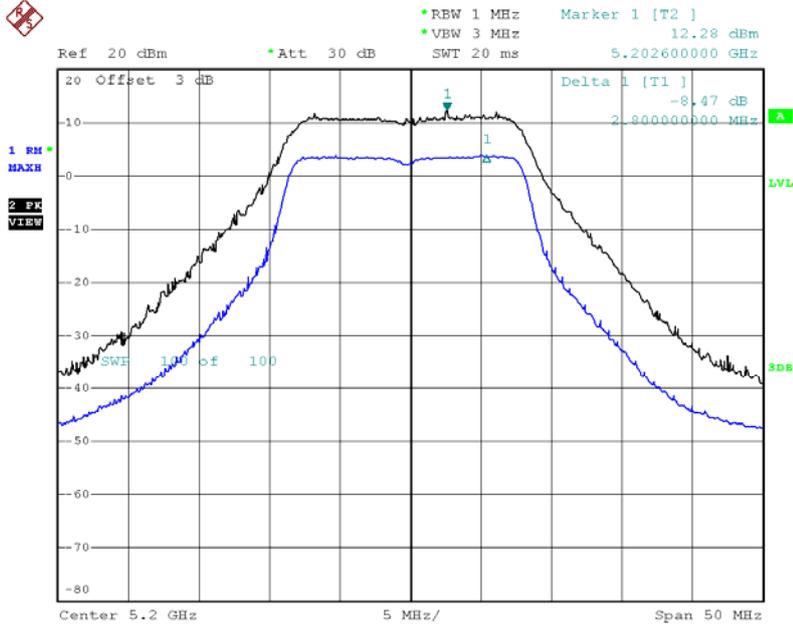
Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH36	5180	8.62	13
CH40	5210	8.47	13
CH48	5240	9.11	13



Date: 13.MAY.2012 17:20:59

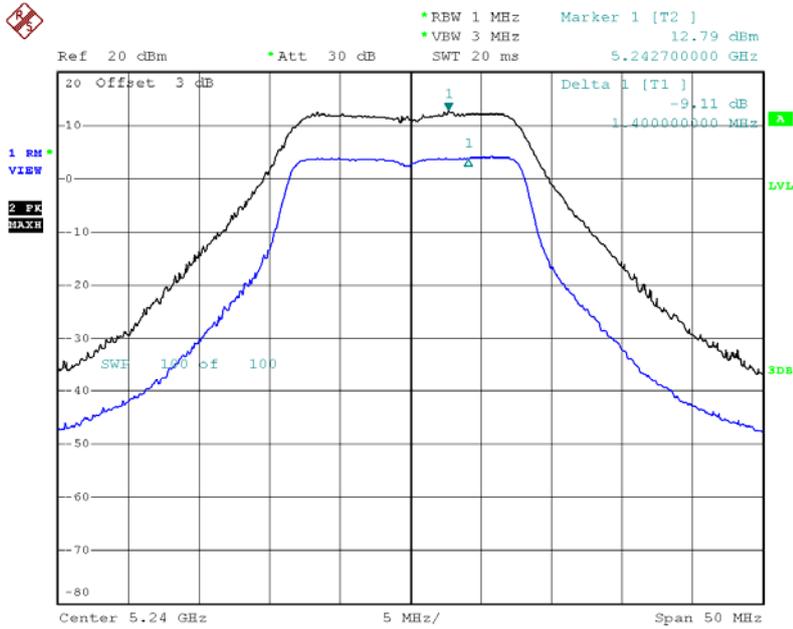


CH40



Date: 13.MAY.2012 17:23:52

CH48

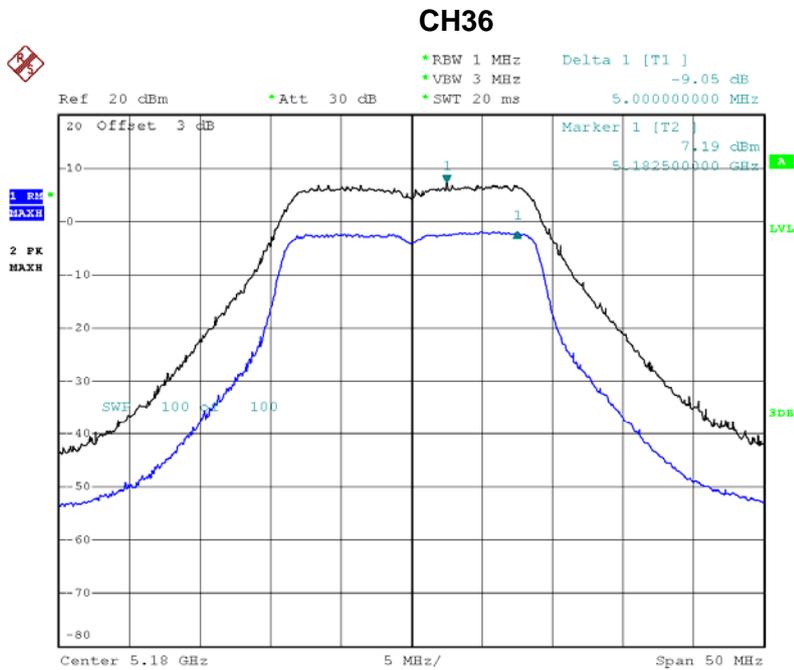


Date: 13.MAY.2012 17:28:10



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/TX N20 Mode/CH36, CH40, CH48		

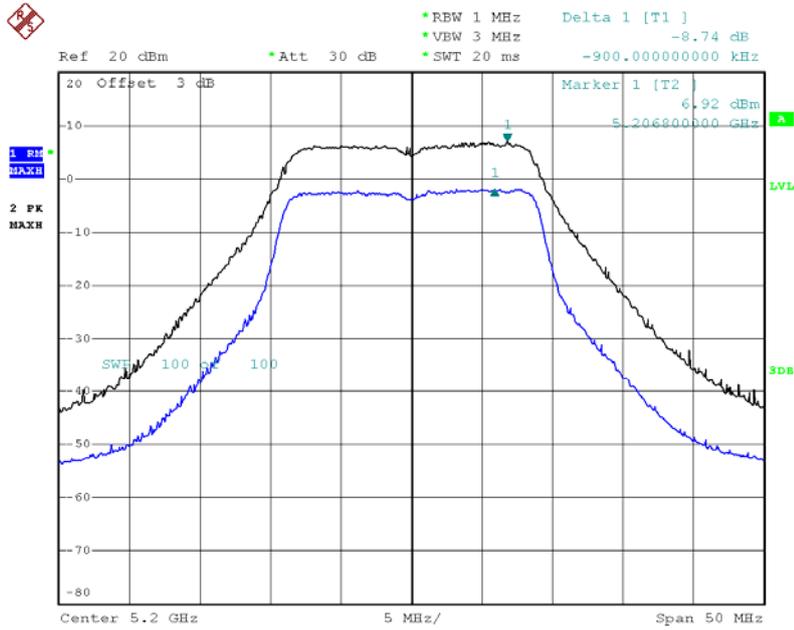
Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH36	5180	9.05	13
CH40	5210	8.74	13
CH48	5240	8.86	13



Date: 17.JUL.2012 20:15:38

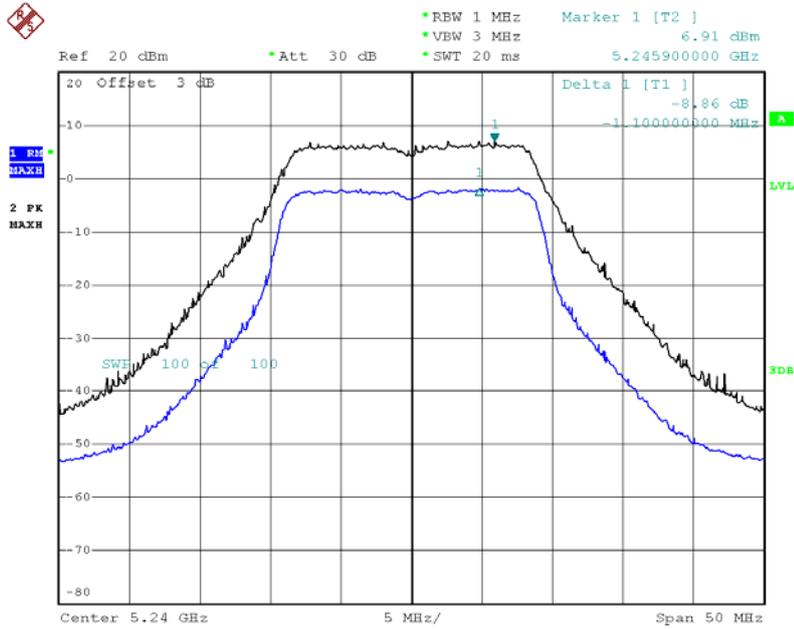


CH40



Date: 17.JUL.2012 20:17:11

CH48

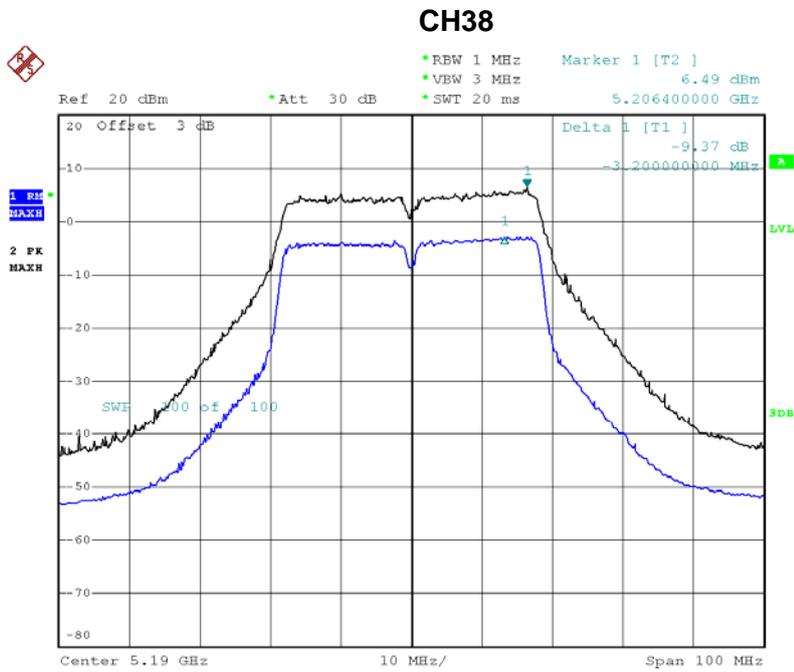


Date: 17.JUL.2012 20:18:13

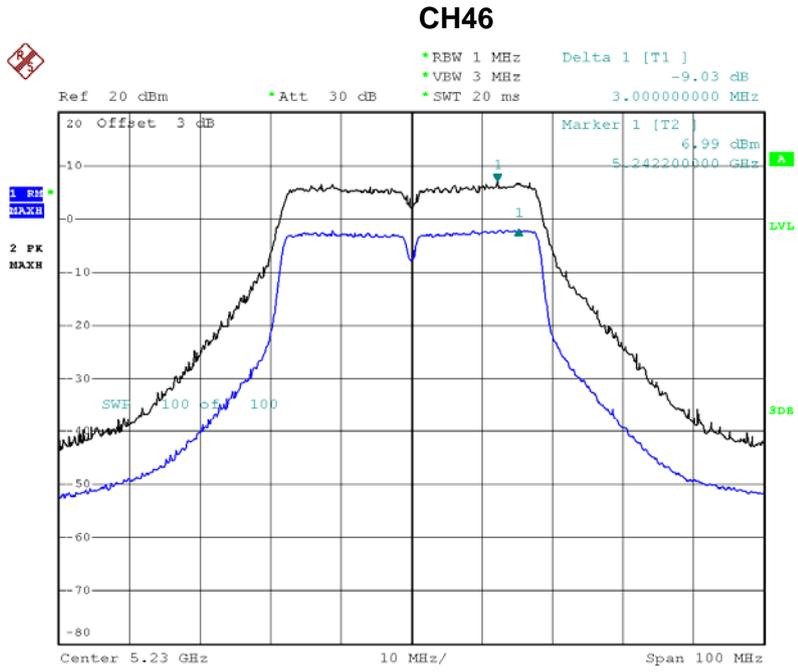


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1/TX N40 Mode/CH38, CH46		

Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH38	5190	9.37	13
CH46	5230	9.03	13



Date: 17.JUL.2012 20:21:54

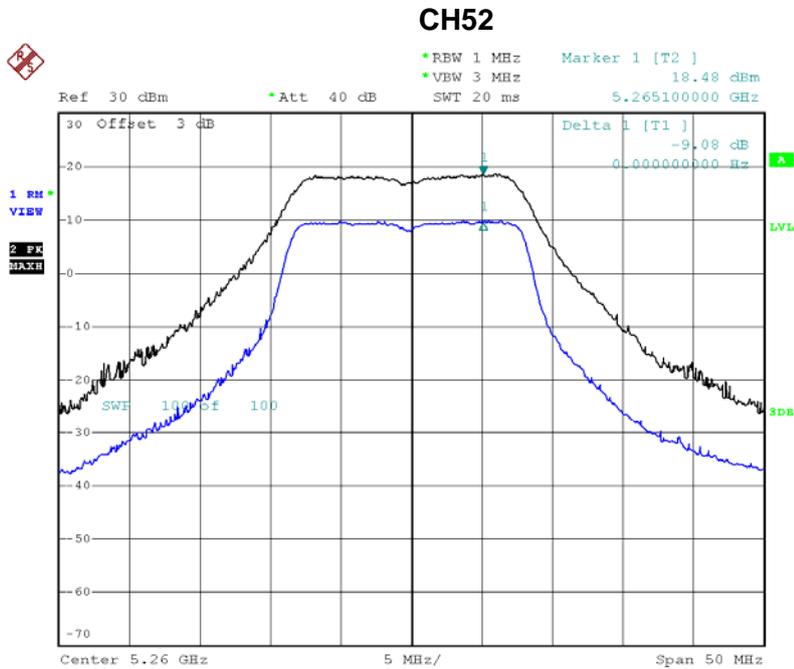


Date: 17.JUL.2012 20:23:59



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX A Mode/CH52, CH56, CH64		

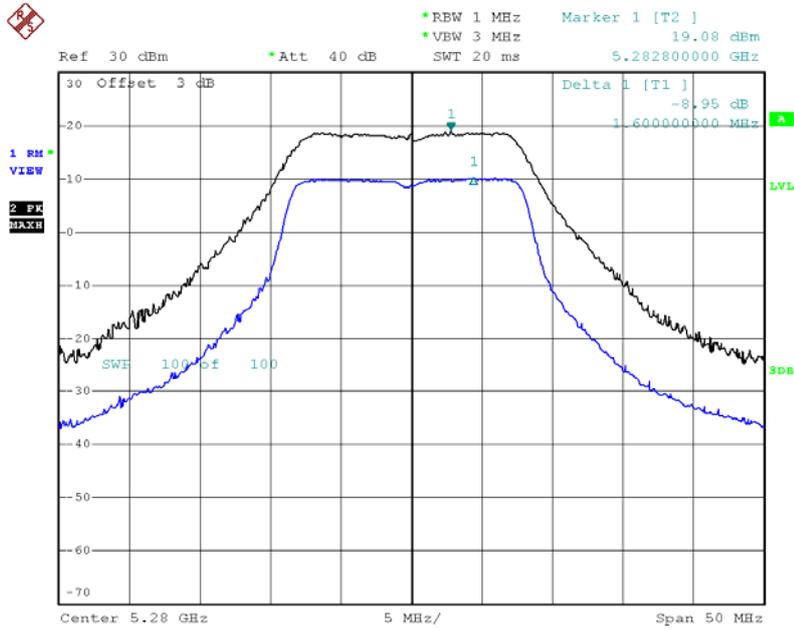
Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH52	5260	9.08	13
CH56	5280	8.95	13
CH64	5320	8.62	13



Date: 13.MAY.2012 17:31:52

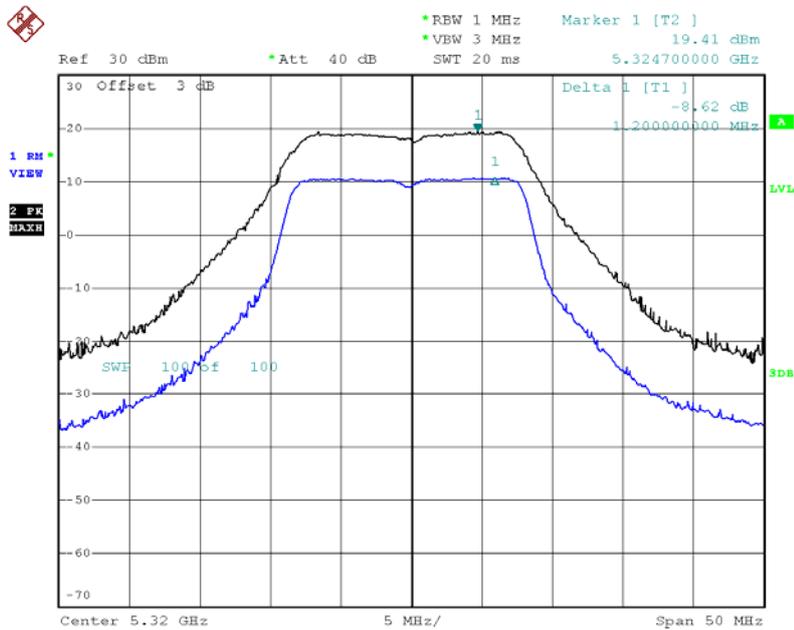


CH56



Date: 13.MAY.2012 17:35:21

CH64

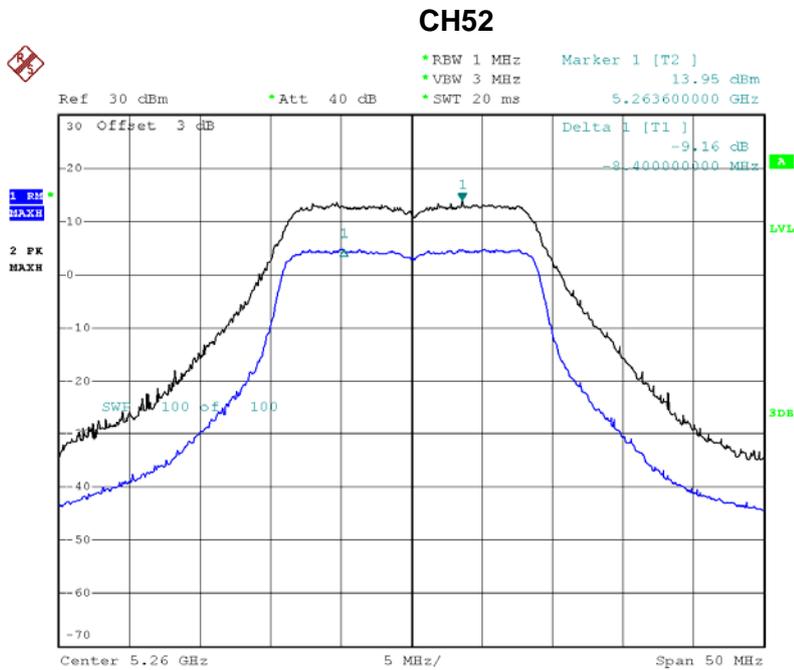


Date: 13.MAY.2012 17:38:22



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N20 Mode/CH52, CH56, CH64		

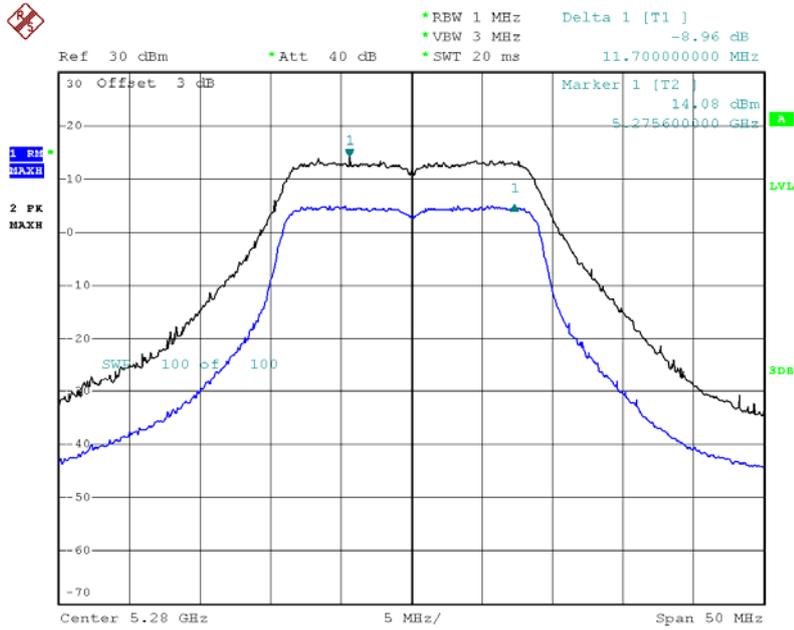
Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH52	5260	9.16	13
CH56	5280	8.96	13
CH64	5320	8.54	13



Date: 17.JUL.2012 20:34:26

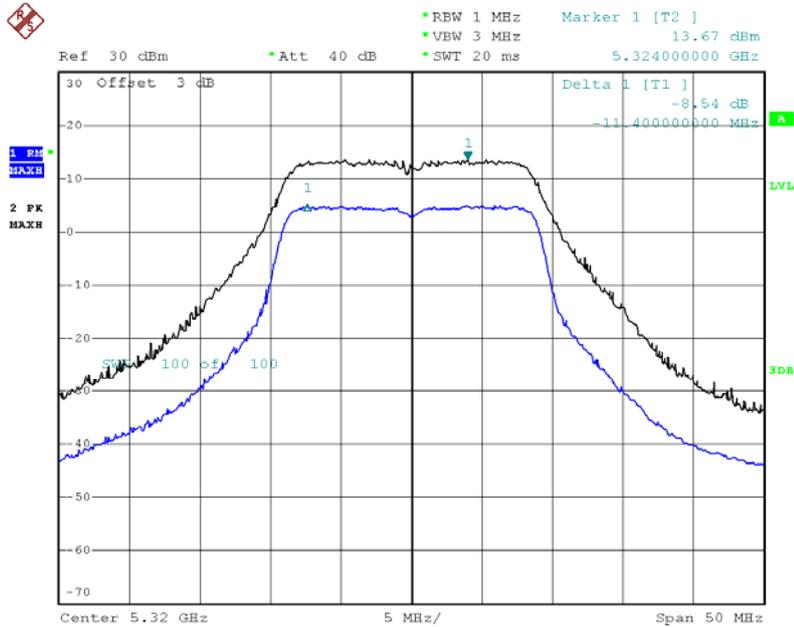


CH56



Date: 17.JUL.2012 20:35:30

CH64

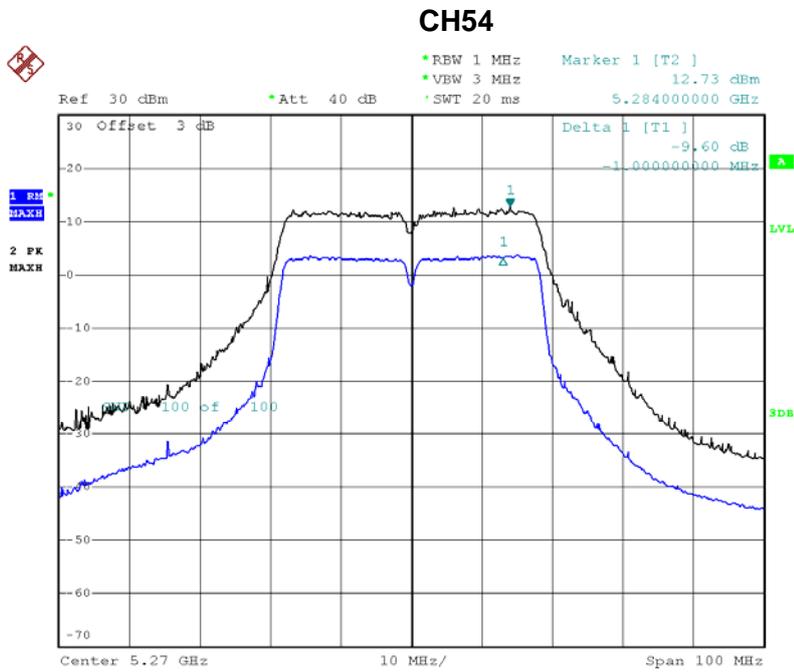


Date: 17.JUL.2012 20:36:19

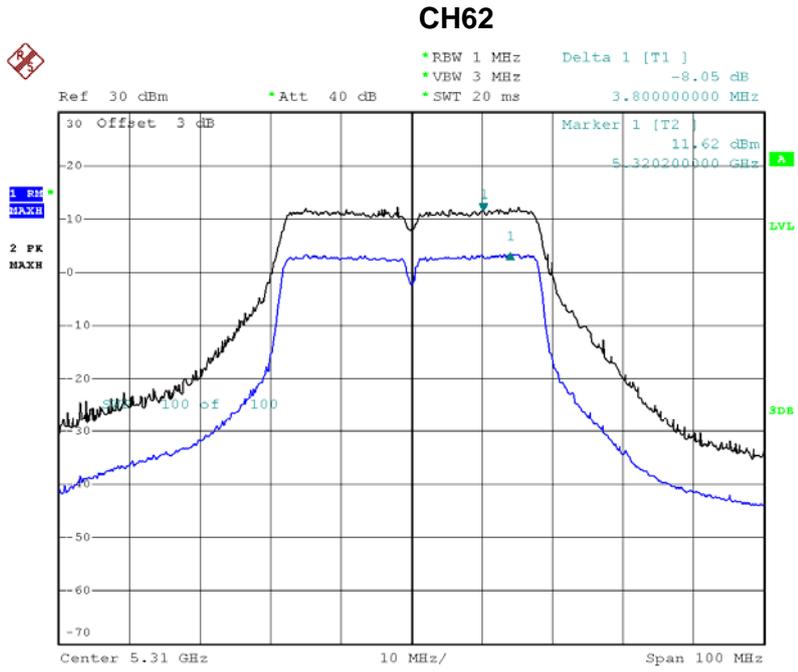


EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2/TX N40 Mode/CH54, CH62		

Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH54	5270	9.60	13
CH62	5310	8.05	13



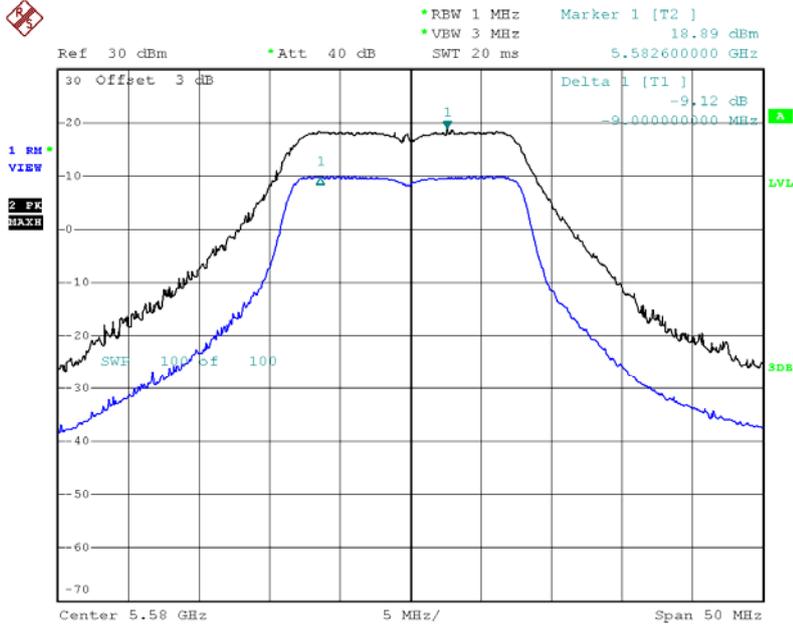
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Date: 17.JUL.2012 20:30:31

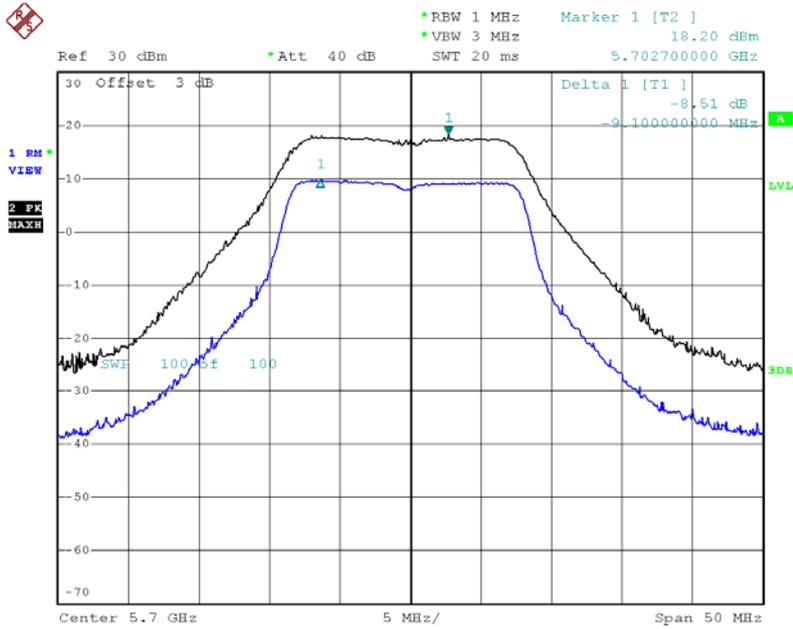


CH116



Date: 13.MAY.2012 17:43:31

CH140

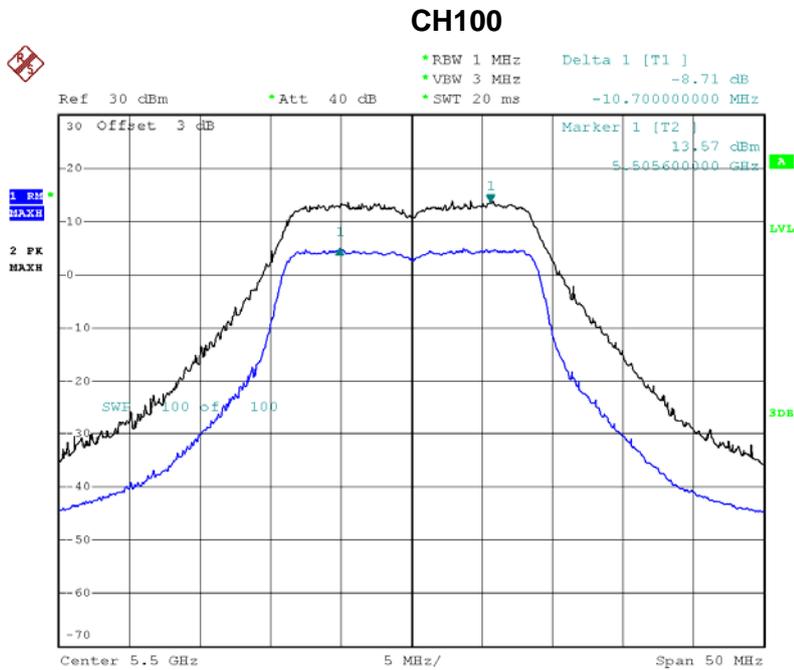


Date: 13.MAY.2012 17:46:00



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX N20 Mode/CH52, CH56, CH64		

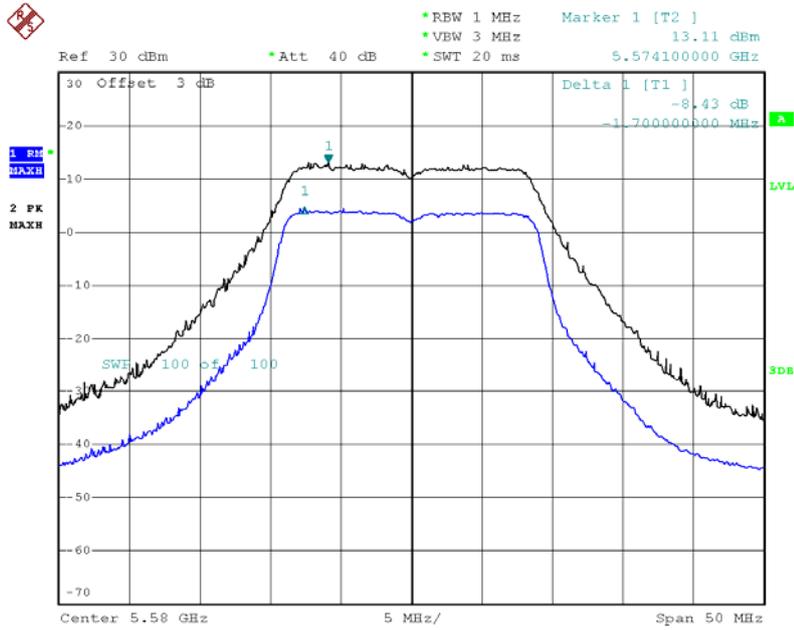
Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH100	5500	8.71	13
CH116	5580	8.43	13
CH140	5700	8.93	13



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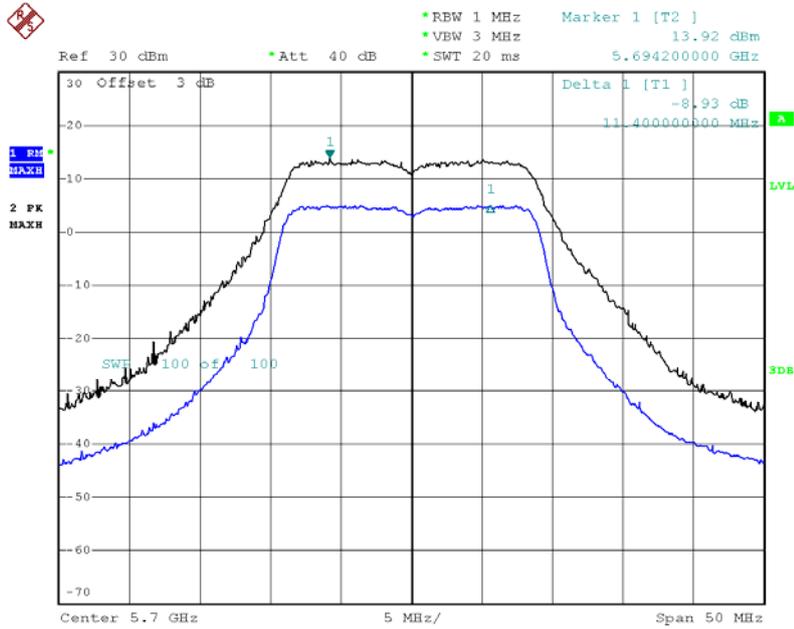


CH116



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CH140

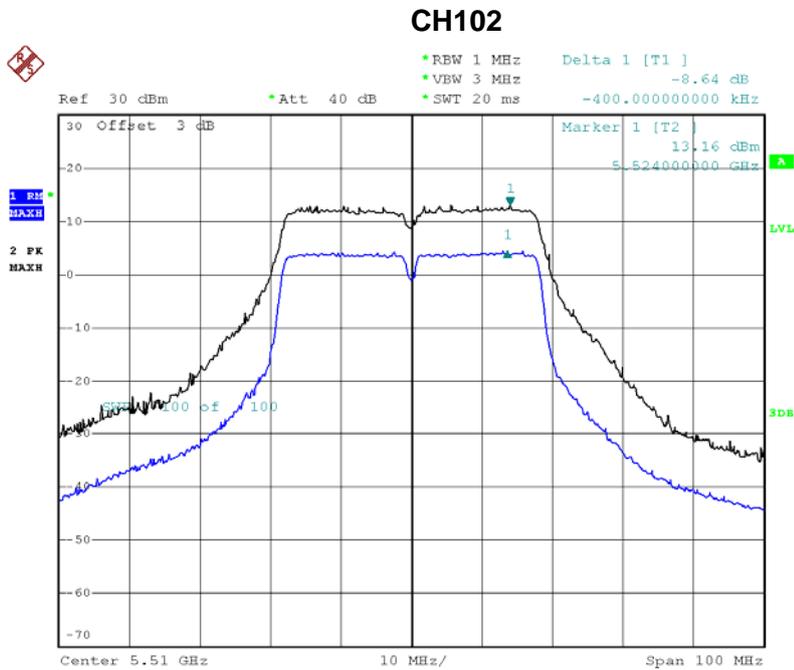


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EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 3/TX N40 Mode/CH102, CH110,CH134		

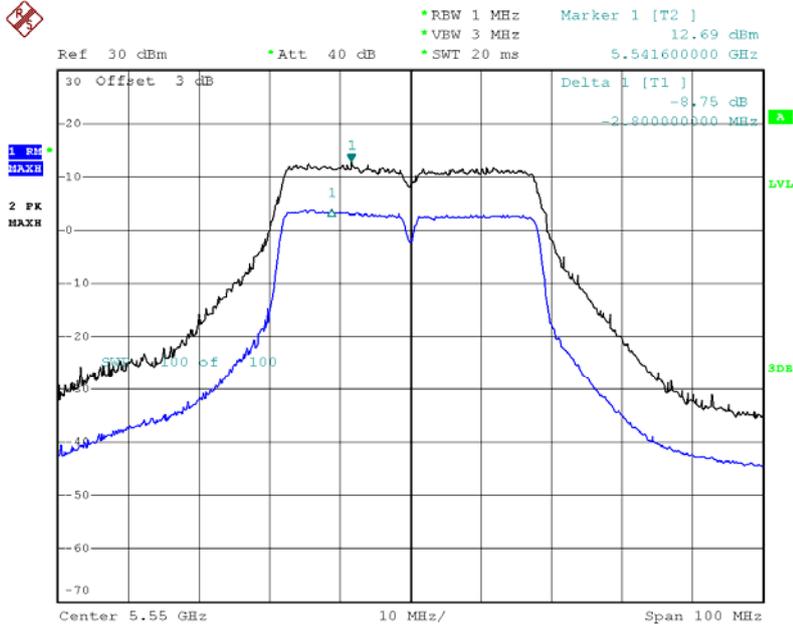
Test Channel	Frequency (MHz)	Peak Excursion (dB)	LIMIT (dB)
CH102	5510	8.64	13
CH110	5550	8.75	13
CH134	5670	8.18	13



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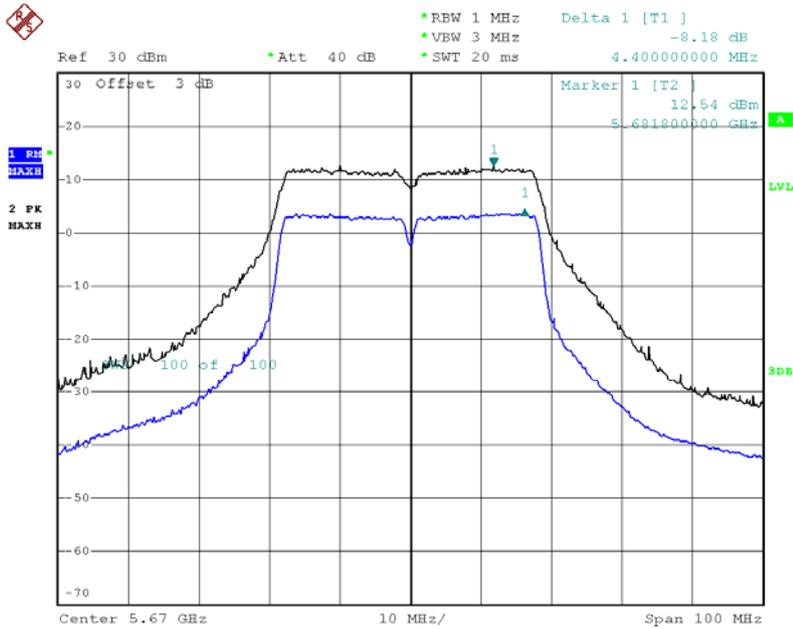


CH110



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CH134



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10. Frequency Stability Measurement

10.1 APPLIED PROCEDURES / LIMIT

FCC Part15, Subpart E 15.407(g)			
Test Item	Limit	Frequency Range (MHz)	Result
Frequency Stability	specified in the user's manual	5150 - 5250	PASS
		5250 - 5350	N/A
		5470 - 5725	N/A

10.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Nov.26.2012
2	Precision Oven Tester	HOLINK	H-T-1F-D	BA03101701	May. 11, 2013

Remark: " N/A" denotes No Model Name, Serial No. or No Calibration specified.

10.1.2 TEST PROCEDURE

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

b.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RB	10 kHz
VB	10 kHz
Sweep Time	Auto

c. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

d. user manual temperature is 0°C~60°C.

10.1.3 DEVIATION FROM STANDARD

No deviation.



10.1.4 TEST SETUP



10.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.



10.1.6 TEST RESULTS

EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 ° C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 1		

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
138	5179.989000
120	5179.985000
102	5179.984000
Max. Deviation (MHz)	0.016000
Max. Deviation (ppm)	3.09
138	5179.989000

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(°C)	5180
-20	5179.984000
-10	5179.989000
0	5179.986000
10	5179.983000
20	5179.986000
30	5179.982000
40	5179.986000
50	5179.985000
Max. Deviation (MHz)	0.018000
Max. Deviation (ppm)	3.47



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2		

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(V)	5320
138	5319.986100
120	5319.986000
102	5319.985700
Max. Deviation (MHz)	0.014300
Max. Deviation (ppm)	2.69

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(°C)	5320
-20	5319.985300
-10	5319.985400
0	5319.985500
10	5319.985400
20	5319.986000
30	5319.985700
40	5319.986100
50	5319.985400
Max. Deviation (MHz)	0.014700
Max. Deviation (ppm)	2.76



EUT :	Wireless LAN Access Point	Model Name :	AP6010DN-AGN
Temperature :	25 °C	Relative Humidity :	58 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	Band 2		

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
138	5699.985400
120	5699.985300
102	5699.985200
Max. Deviation (MHz)	0.014800
Max. Deviation (ppm)	2.60
138	5699.985400

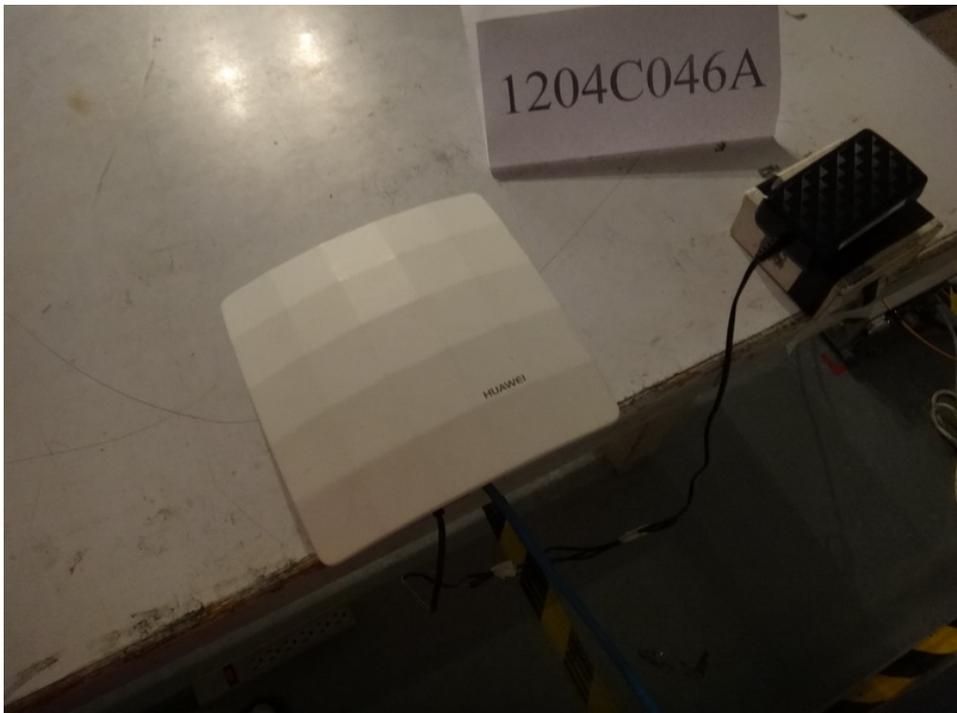
Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(°C)	5700
-20	5699.985400
-10	5699.985300
0	5699.985700
10	5699.986100
20	5699.985900
30	5699.985500
40	5699.985800
50	5699.985600
Max. Deviation (MHz)	0.014700
Max. Deviation (ppm)	2.58



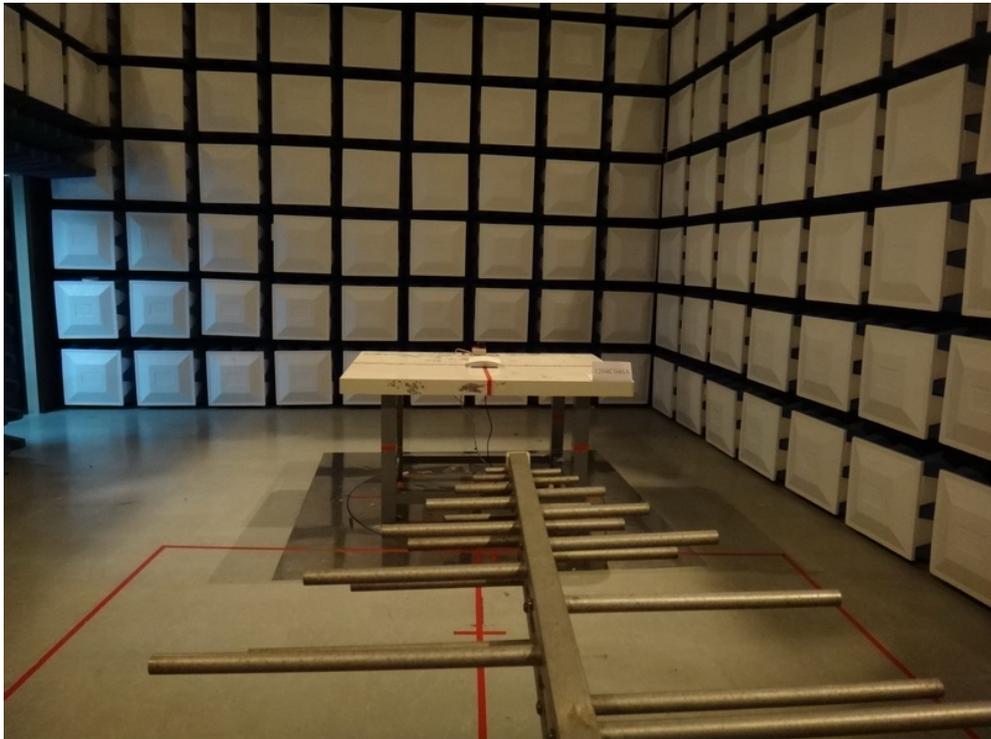
11. EUT TEST PHOTO

Conducted Measurement Photos





**Radiated Measurement Photos
BELOW 1G**





**Radiated Measurement Photos
ABOVE 1G**

