4.3.10 TEST RESULTS – ANTENNA 8

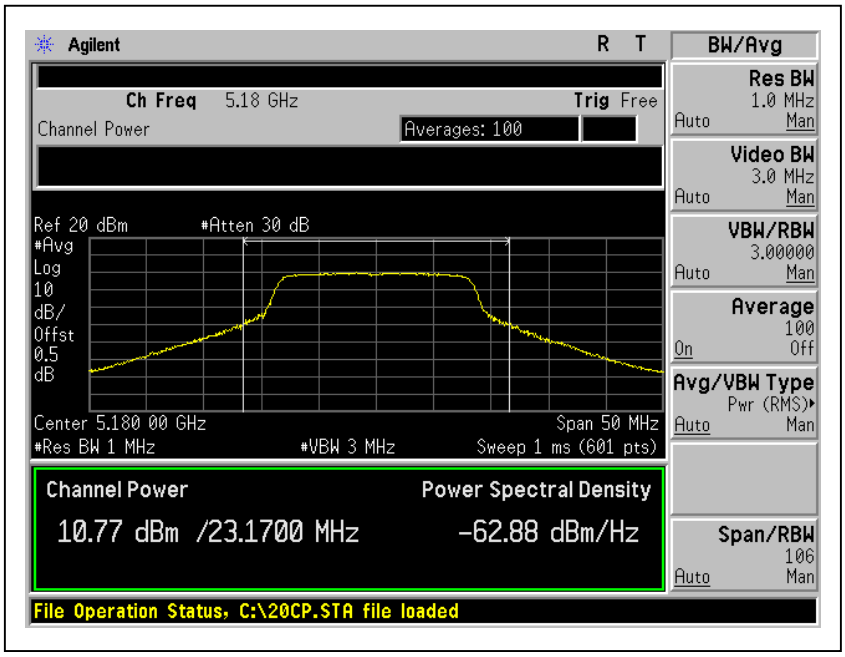
802.11a OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

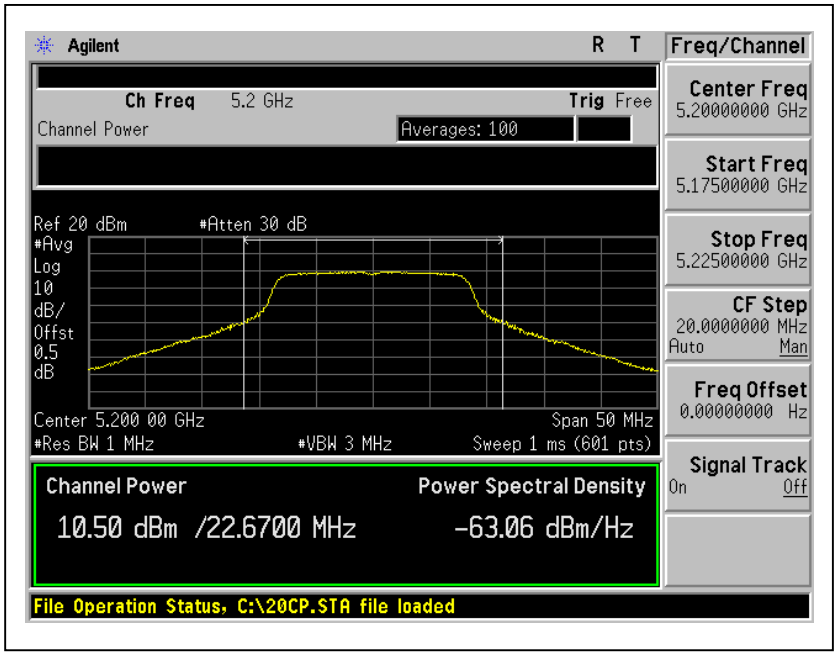
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			TOTAL PEAK POWER (dBm)	TOTAL PEAK POWER (mW)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
		Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2					
1	5180	10.77	9.43	10.12	11.940	8.770	10.280	14.91	30.990	17.00	23.17	PASS
2	5200	10.5	9.18	10.04	11.220	8.279	10.093	14.71	29.592	17.00	22.67	PASS
4	5240	10.66	9.43	10.16	11.641	8.770	10.375	14.88	30.786	17.00	22.33	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

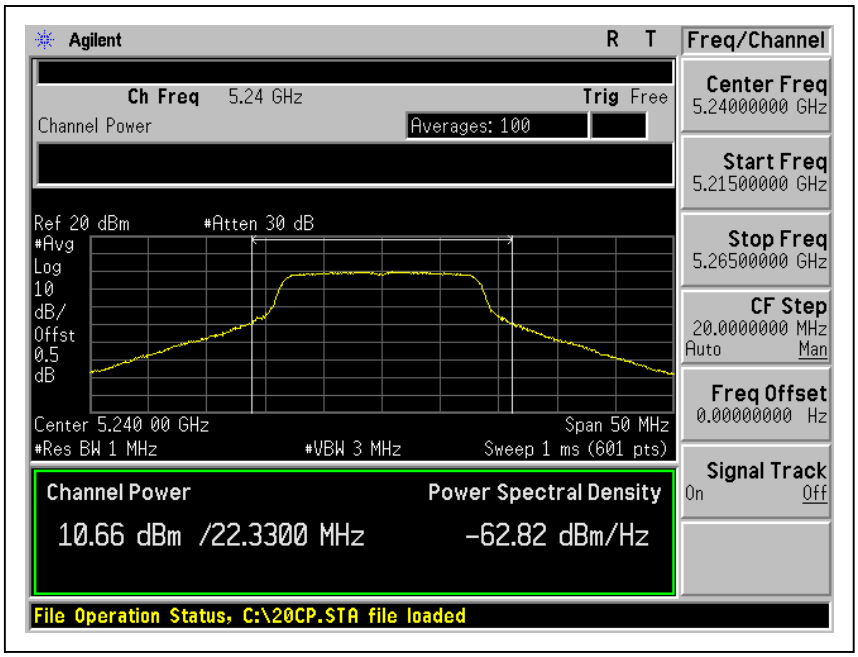
Peak Power Output:
For Chain (0) :CH1



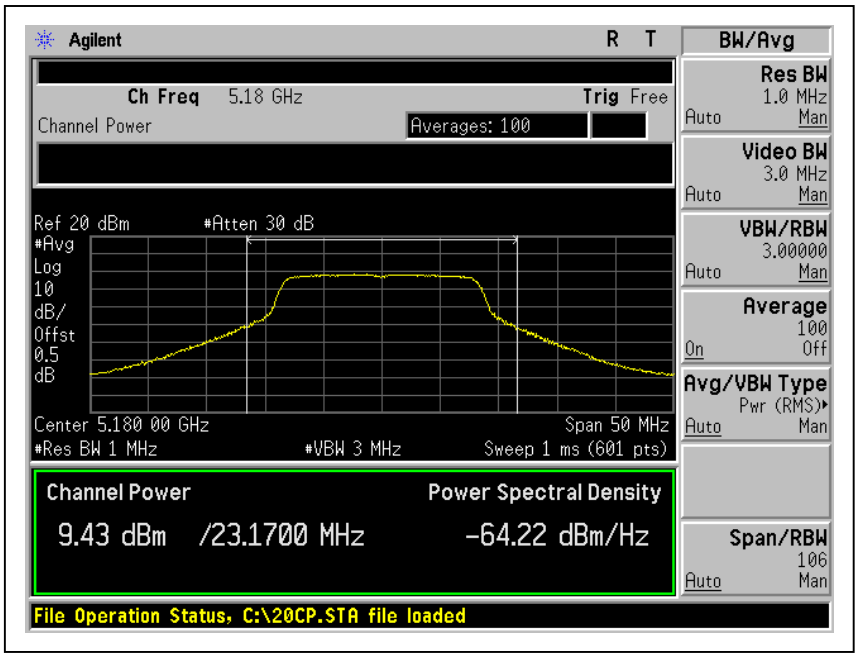
CH2



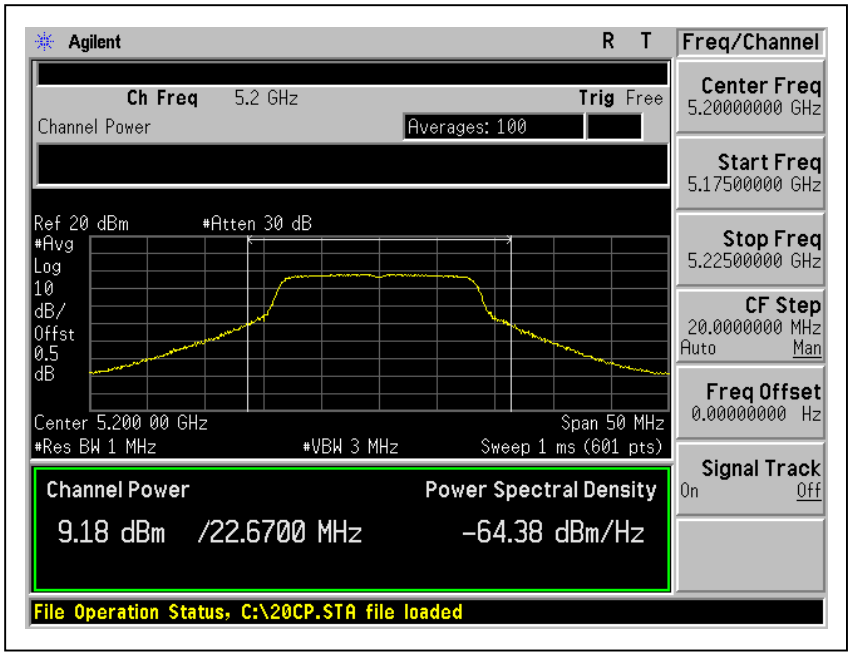
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
10.66 dBm /22.3300 MHz
Power Spectral Density
-62.82 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

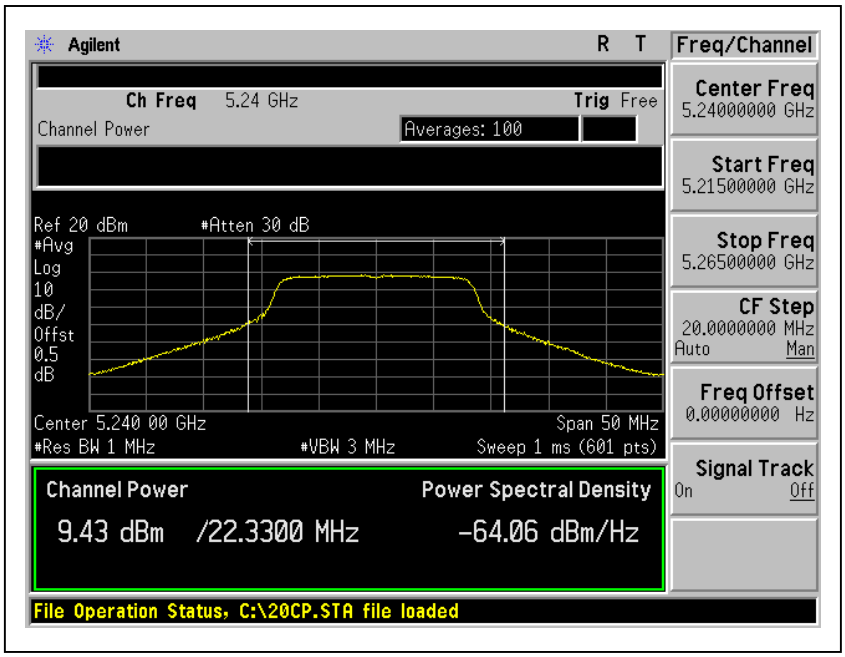
For Chain (1) :CH1



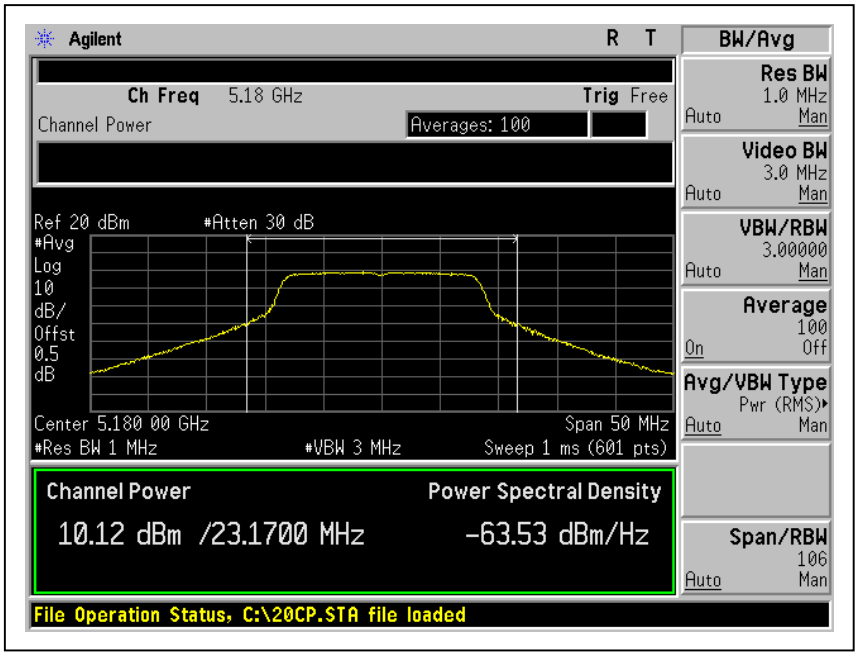
CH2



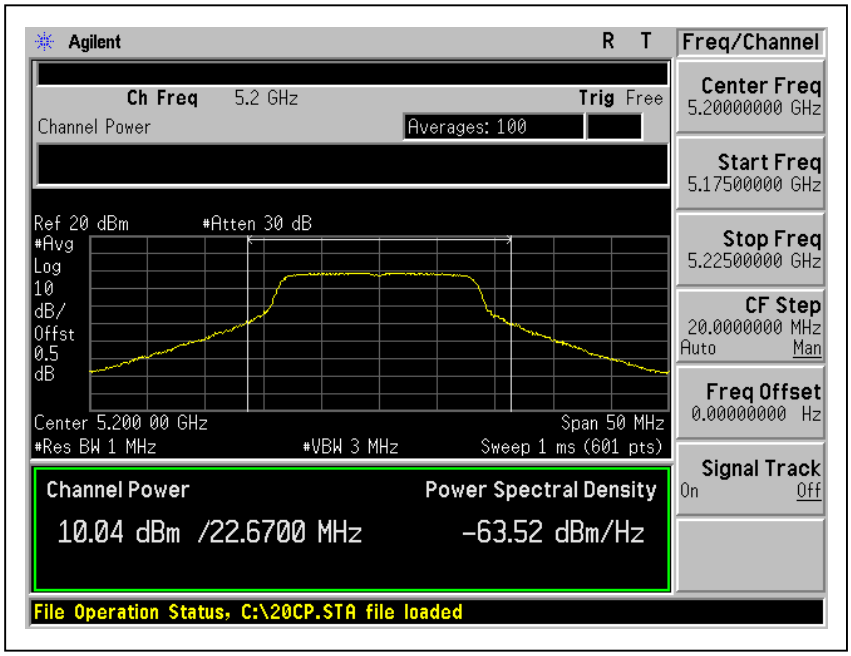
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
9.43 dBm /22.3300 MHz
Power Spectral Density
-64.06 dBm/Hz
File Operation Status, C:\20CP.STA file loaded
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off

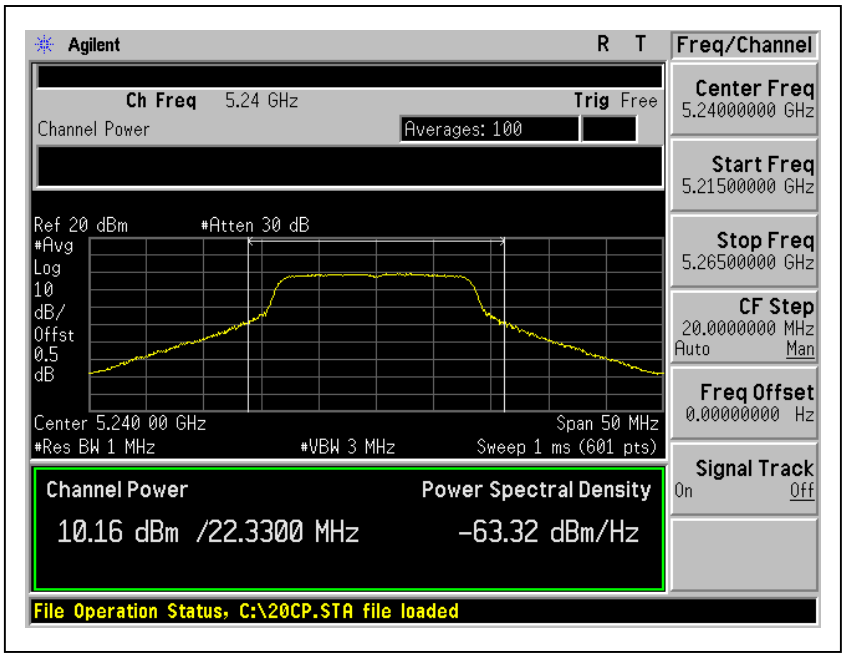
For Chain (2) **:**CH1



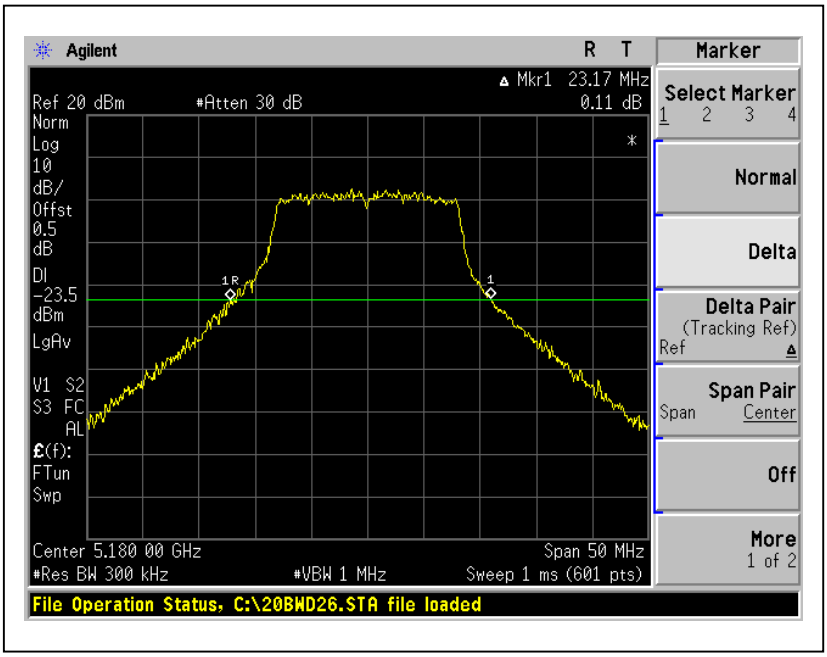
CH2



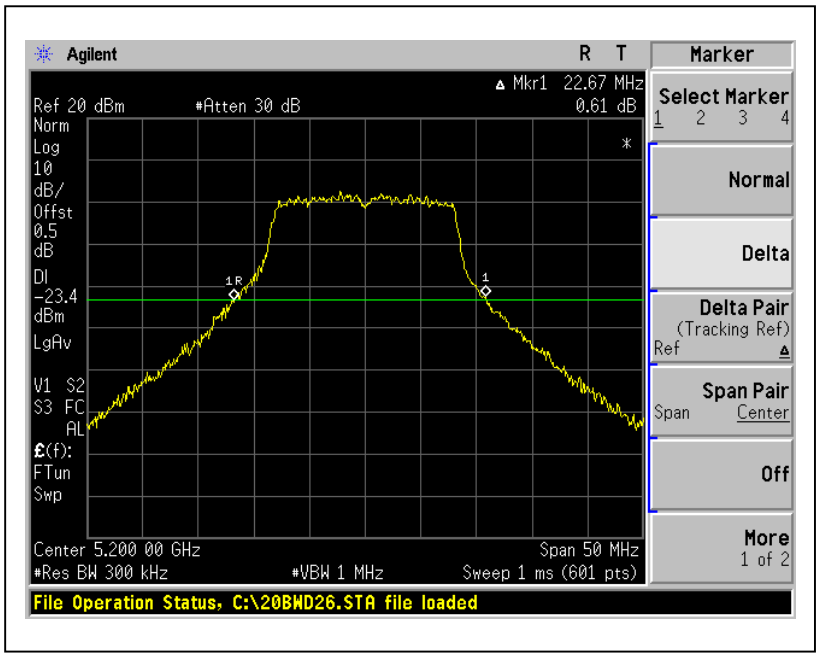
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
10.16 dBm /22.3300 MHz
Power Spectral Density
-63.32 dBm/Hz
File Operation Status, C:\20CP.STA file loaded
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off

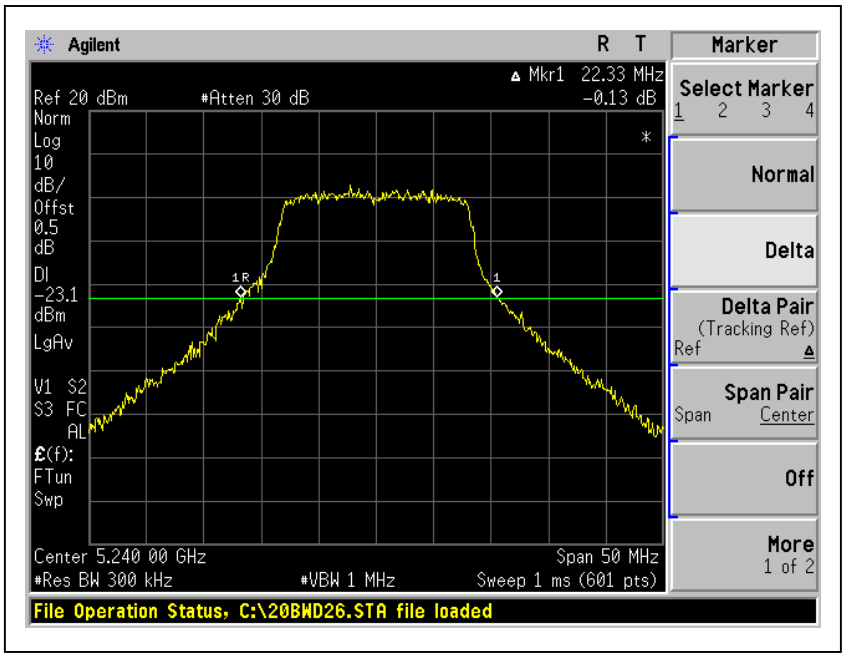
26dB Occupied Bandwidth:
CH1



CH2



CH4


Agilent
R T
Marker
Mkr1 22.33 MHz
-0.13 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
0.5
dB
Dl
-23.1
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

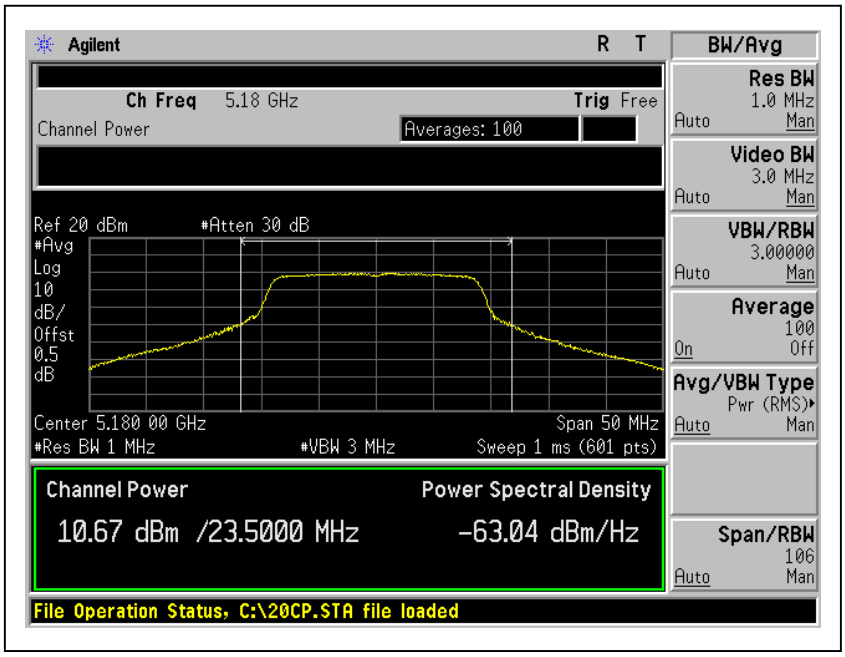
DRAFT 802.11n (20MHz) OFDM modulation:

MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

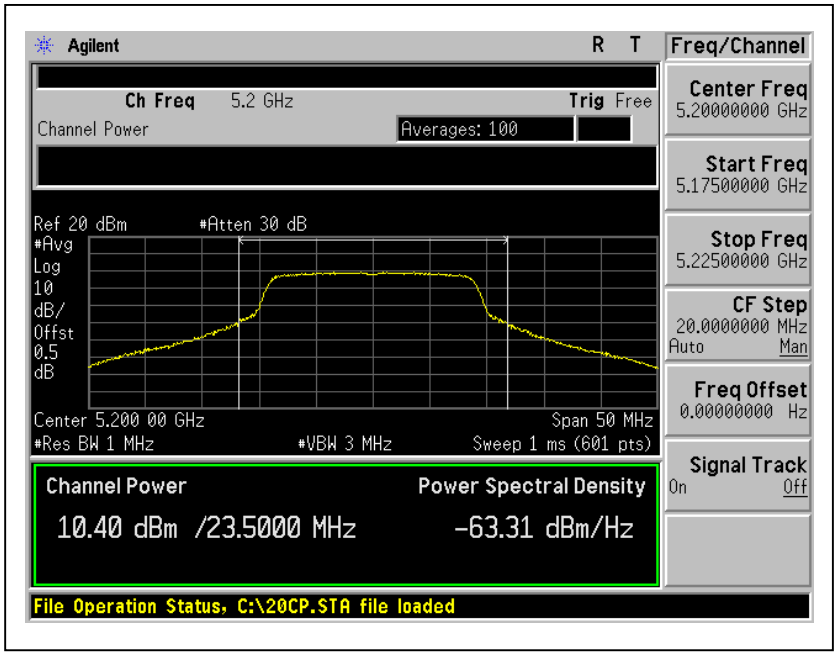
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			TOTAL PEAK POWER (dBm)	TOTAL PEAK POWER (mW)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
		Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2					
1	5180	10.67	9.35	10.14	11.668	8.610	10.328	14.86	30.606	17.00	23.5	PASS
2	5200	10.4	9.01	9.97	10.965	7.962	9.931	14.60	28.858	17.00	23.5	PASS
4	5240	10.25	8.7	10.11	10.593	7.413	10.257	14.51	28.263	17.00	23.5	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

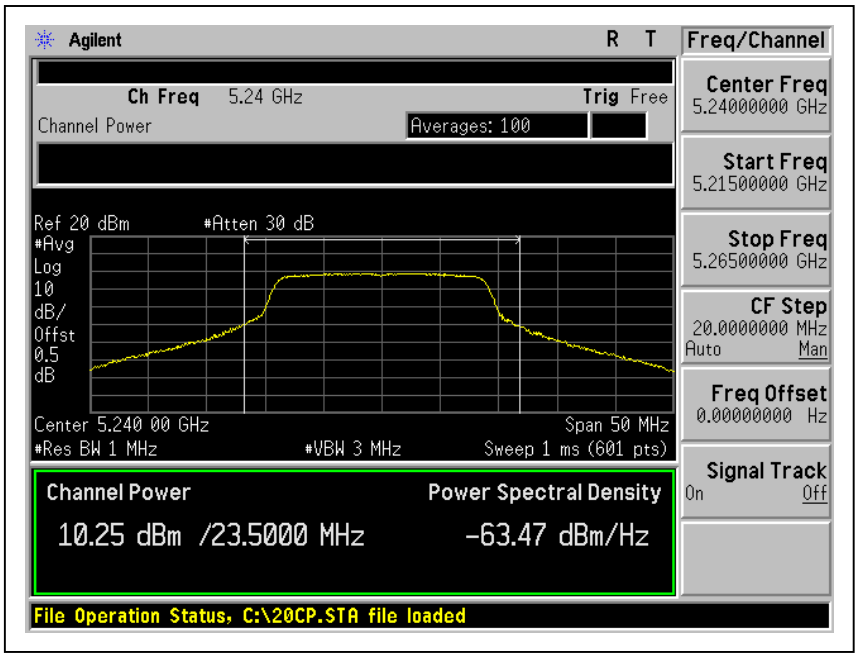
Peak Power Output:
For Chain (0) :CH1



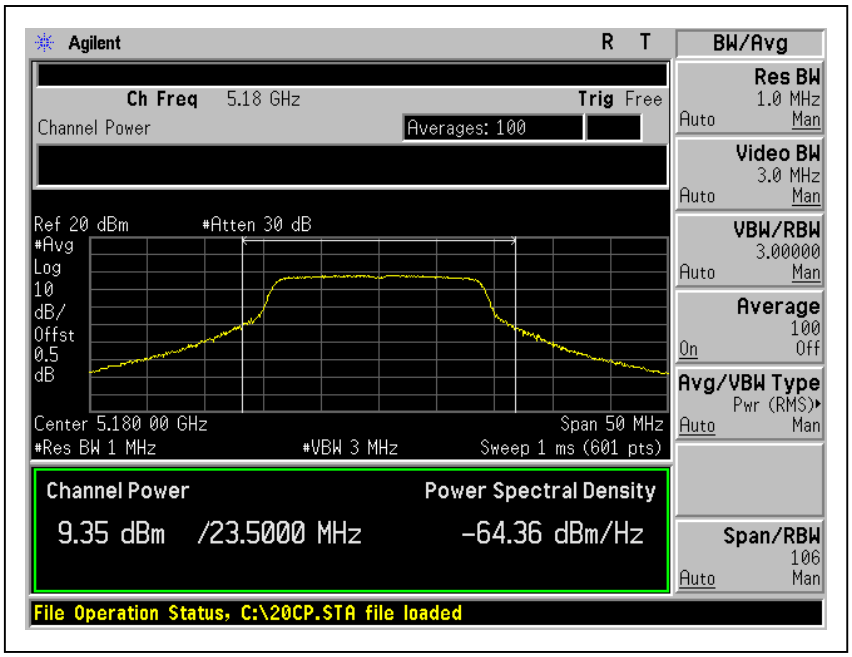
CH2



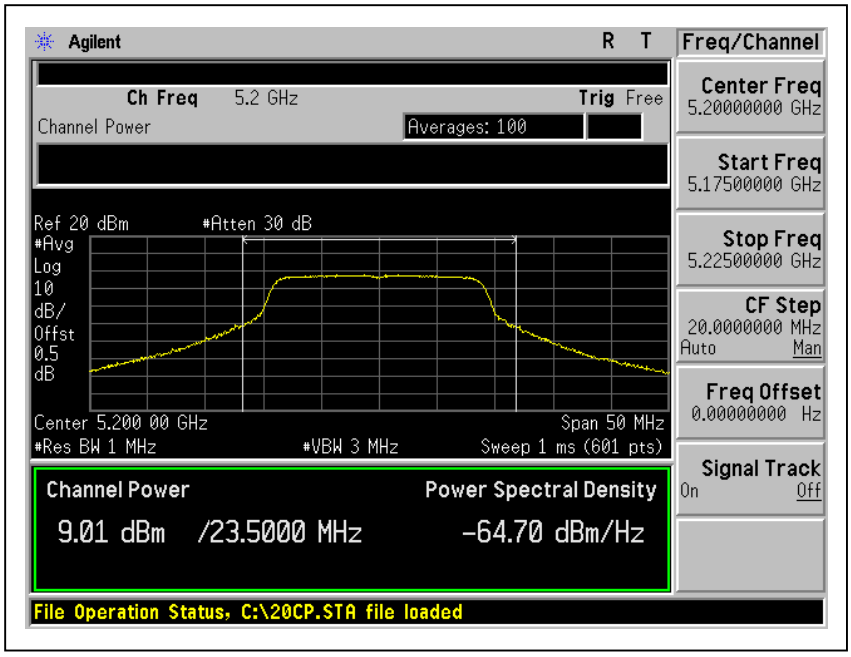
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
10.25 dBm /23.5000 MHz
Power Spectral Density
-63.47 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

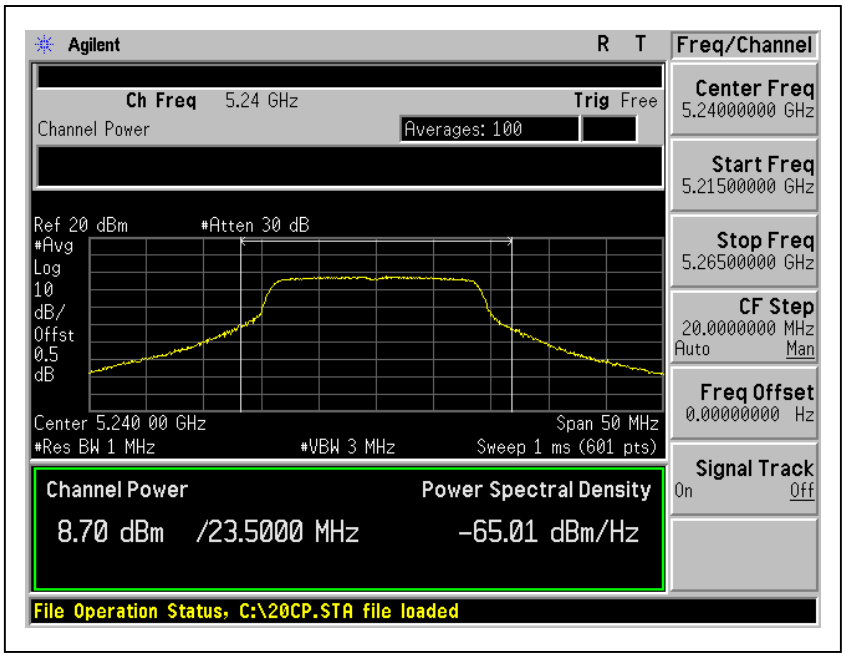
For Chain (1) :CH1



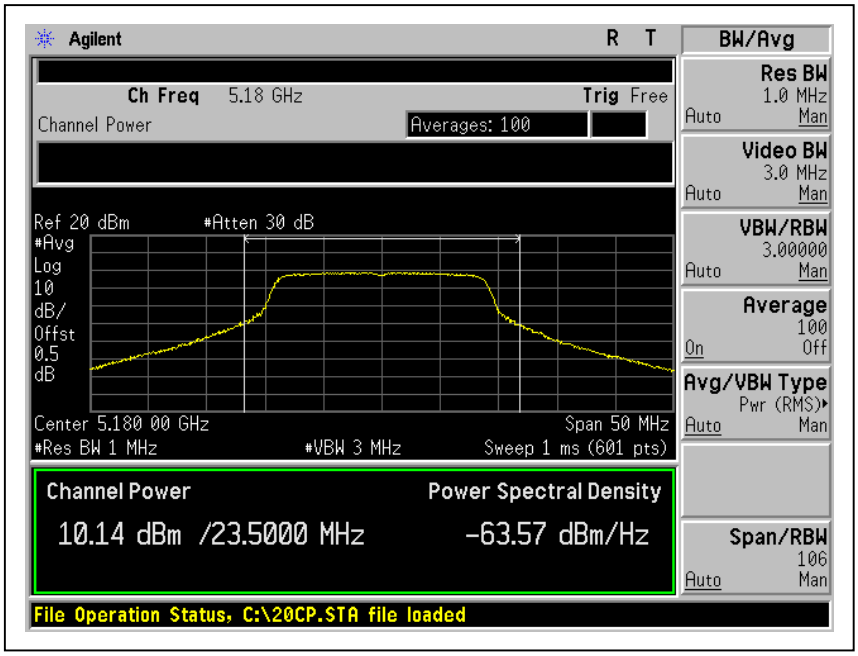
CH2



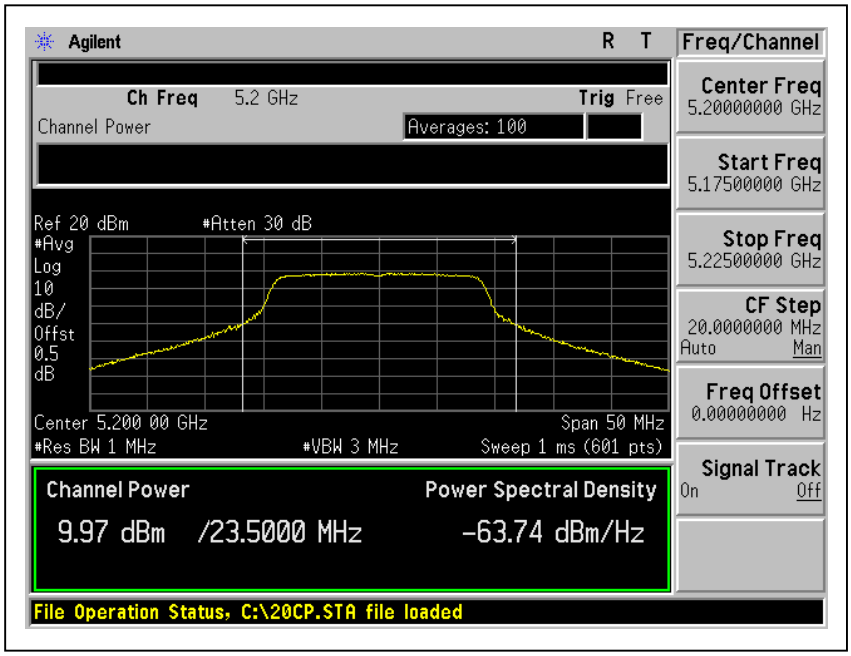
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
8.70 dBm /23.5000 MHz
Power Spectral Density
-65.01 dBm/Hz
File Operation Status, C:\20CP.STA file loaded
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off

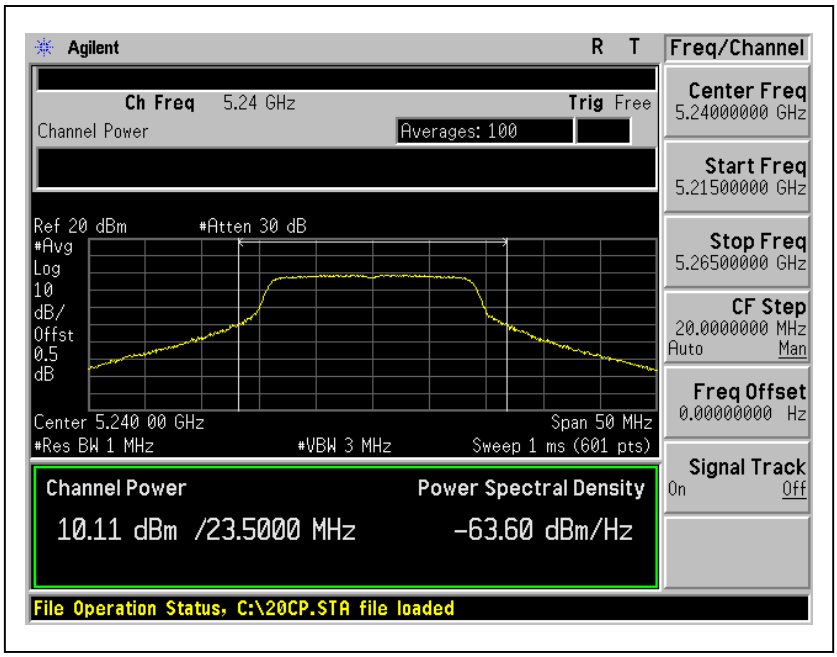
For Chain (2) **:**CH1



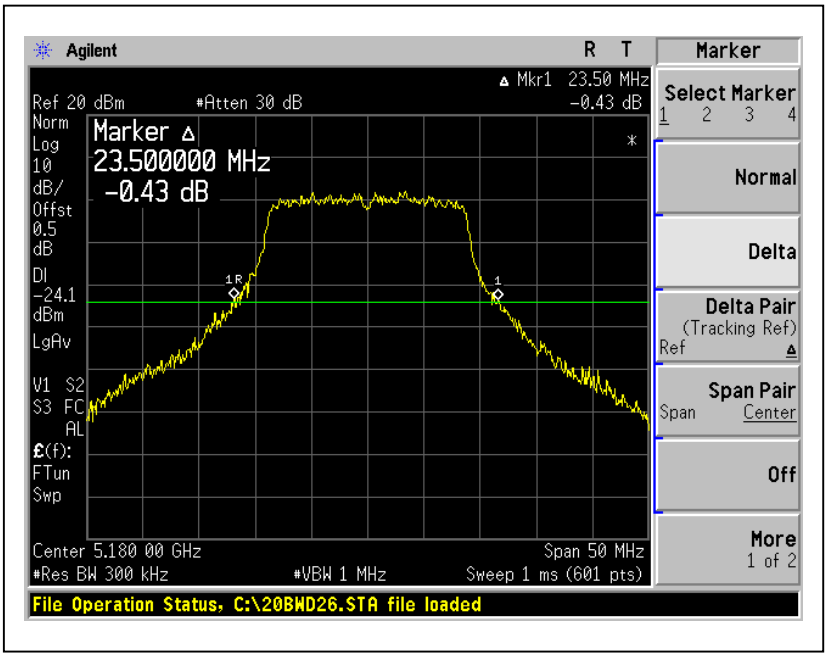
CH2



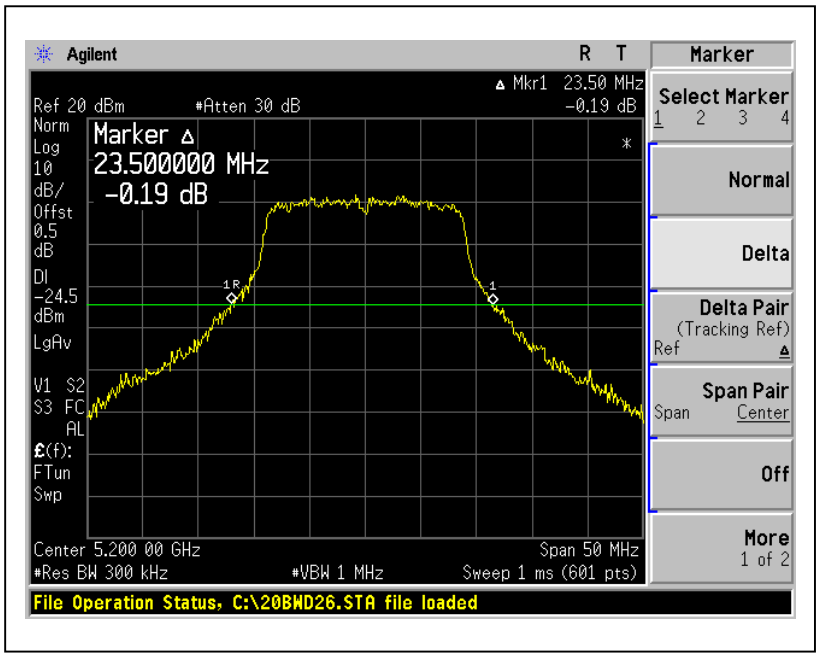
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
10.11 dBm /23.5000 MHz
Power Spectral Density
-63.60 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

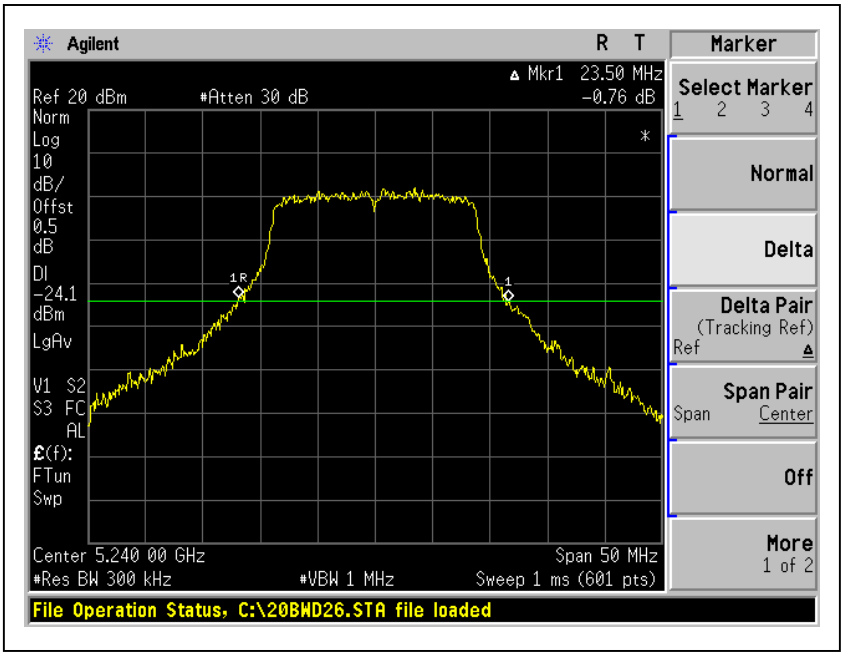
26dB Occupied Bandwidth:
CH1



CH2



CH4


Agilent
R T
Marker
Mkr1 23.50 MHz
-0.76 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
0.5
dB
Dl
-24.1
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 300 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20BWD26.STA file loaded

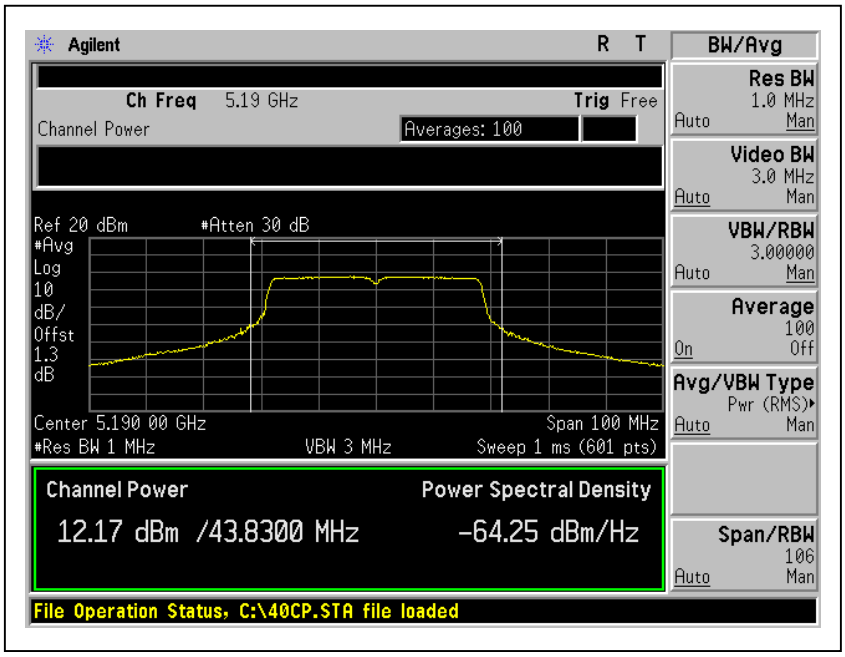
DRAFT 802.11n (40MHz) OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

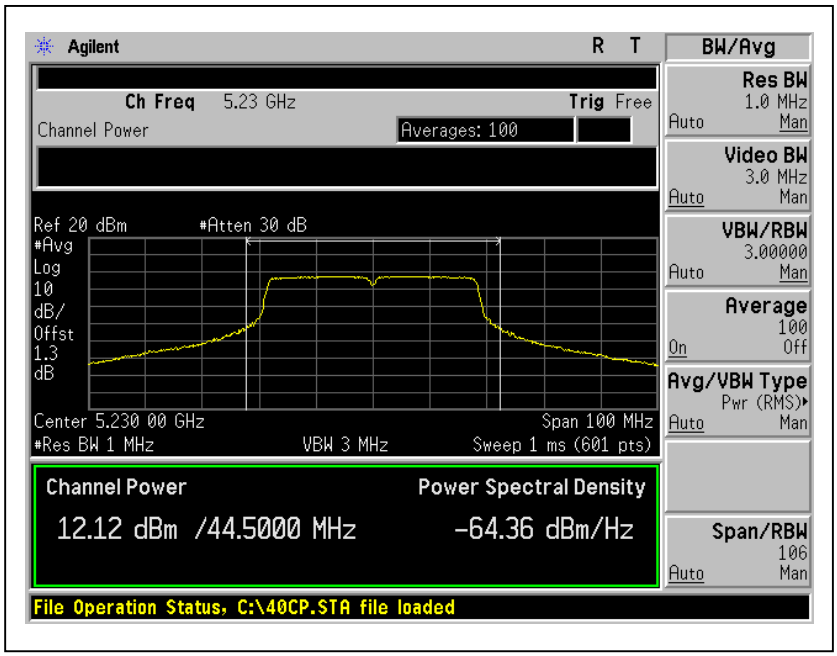
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			TOTAL PEAK POWER (dBm)	TOTAL PEAK POWER (mW)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
		Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2					
1	5190	12.17	11.4	11.35	16.482	13.804	13.646	16.43	43.932	17.00	43.83	PASS
2	5230	12.12	11.46	12	16.293	13.996	15.849	16.64	46.138	17.00	44.5	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

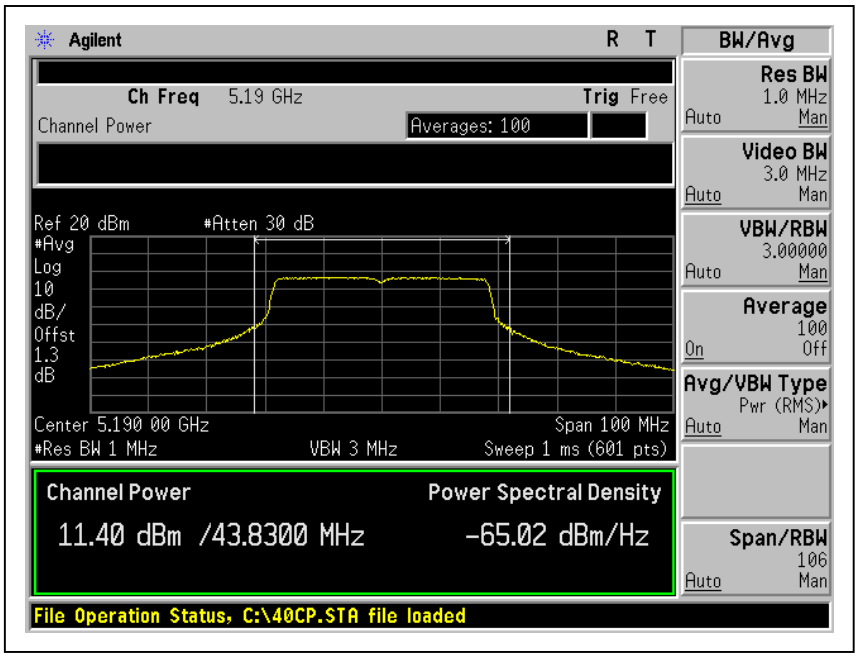
Peak Power Output:
For Chain (0) :CH1



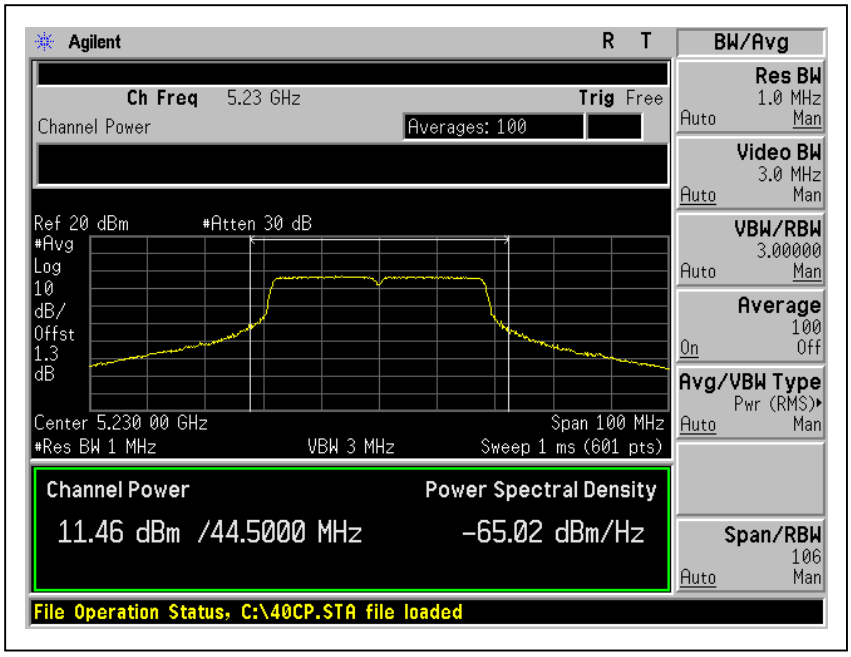
CH2



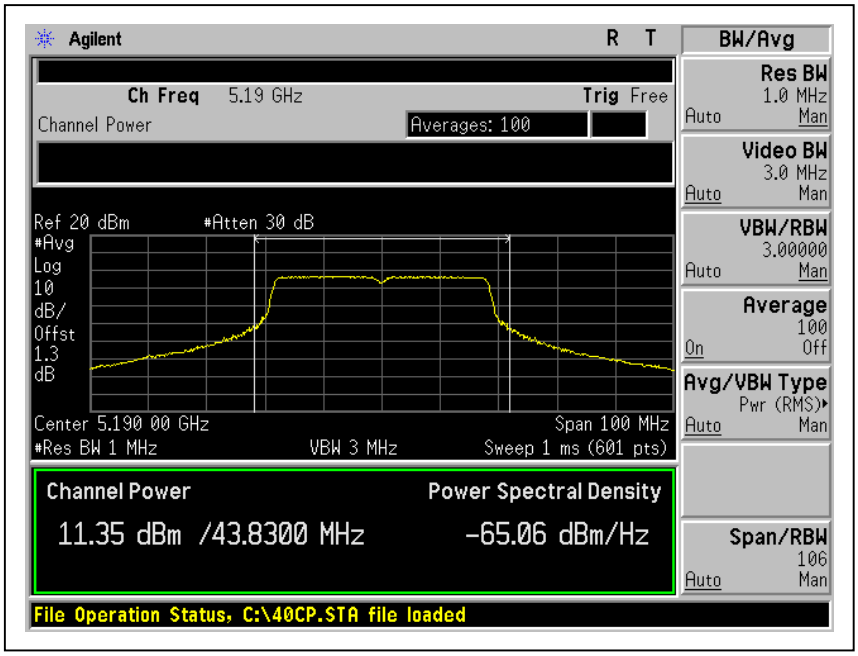
For Chain (1) :CH1



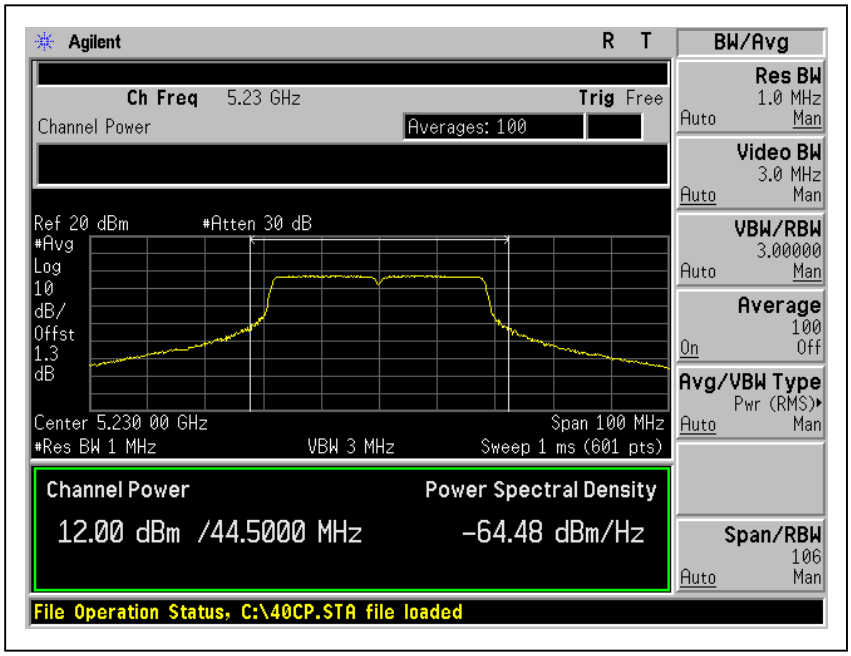
CH2



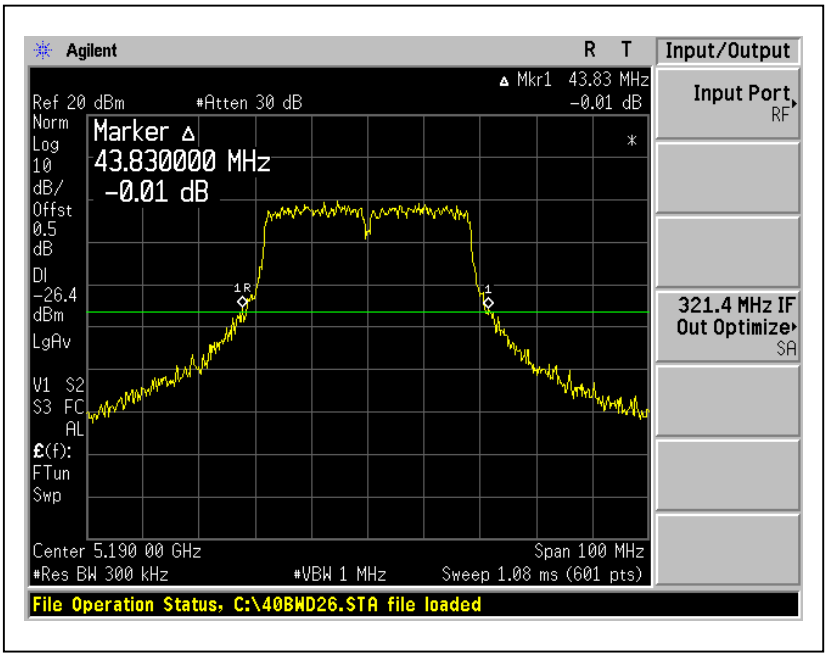
For Chain (2) **:**CH1



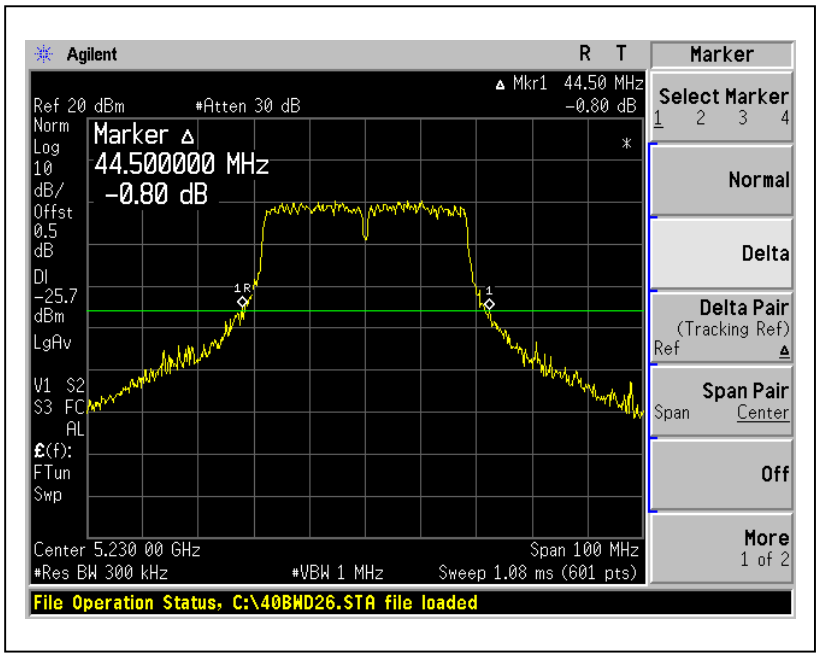
CH2



26dB Occupied Bandwidth:
CH1



CH2



4.3.11 TEST RESULTS – ANTENNA 11

802.11a OFDM MODULATION:

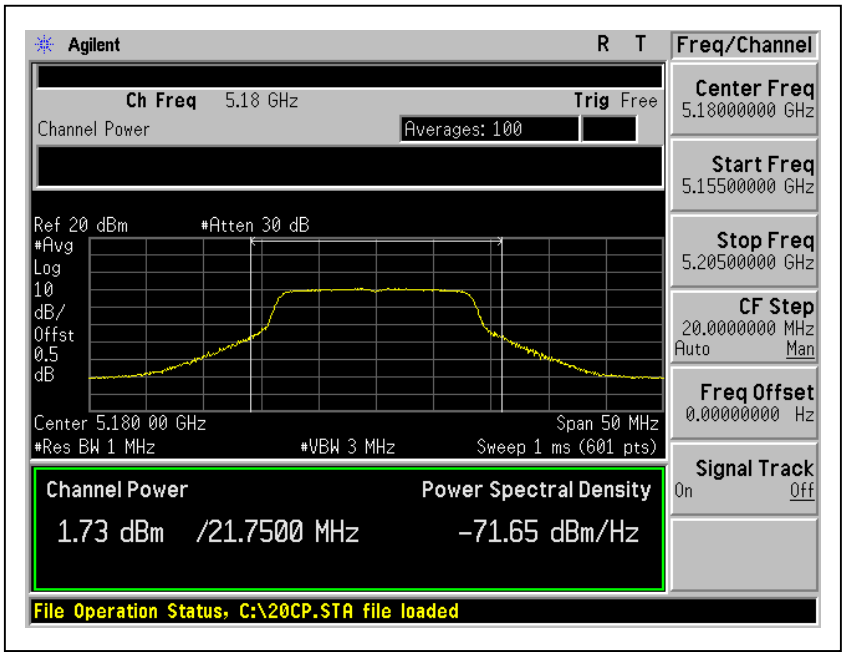
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			TOTAL PEAK POWER (dBm)	TOTAL PEAK POWER (mW)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
		Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2					
1	5180	1.73	0.42	0.64	1.489	1.102	1.159	5.74	3.750	8.50	21.75	PASS
2	5200	2.88	1	1.46	1.941	1.259	1.400	6.63	4.600	8.50	21.67	PASS
4	5240	2.3	0.79	0.79	1.698	1.199	1.199	6.12	4.096	8.50	21.75	PASS

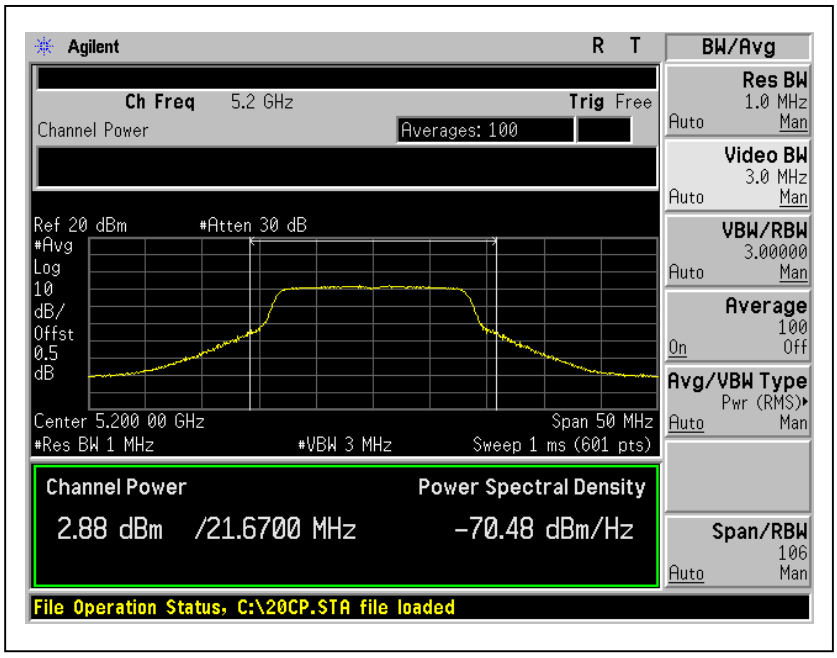
NOTE: 1. The 26dBc Occupied Bandwidth plot, please refer to the following pages.

2. Power limitation=17-(14.5-6) =8.5dBm (For non-point to point application).

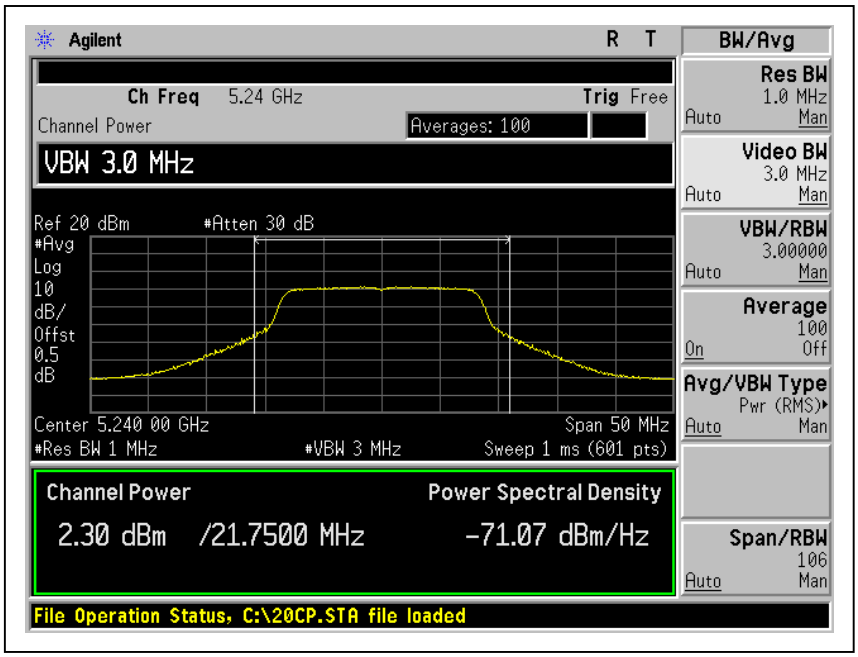
Peak Power Output:
For Chain (0) :CH1



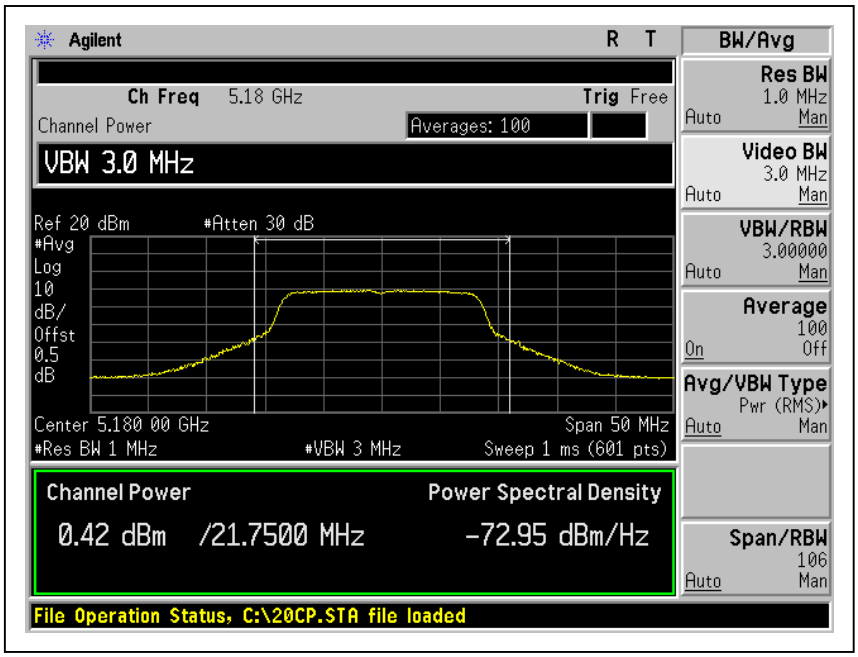
CH2



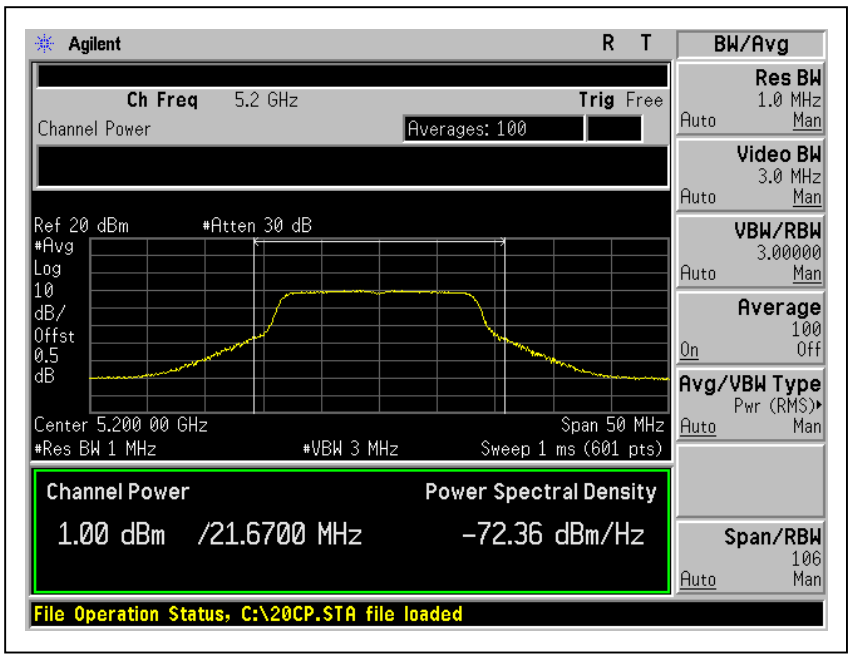
CH4


Agilent
R T
BW/Avg
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
VBW 3.0 MHz
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
2.30 dBm
/21.7500 MHz
Power Spectral Density
-71.07 dBm/Hz
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Span/RBW
106
Auto Man
File Operation Status, C:\20CP.STA file loaded

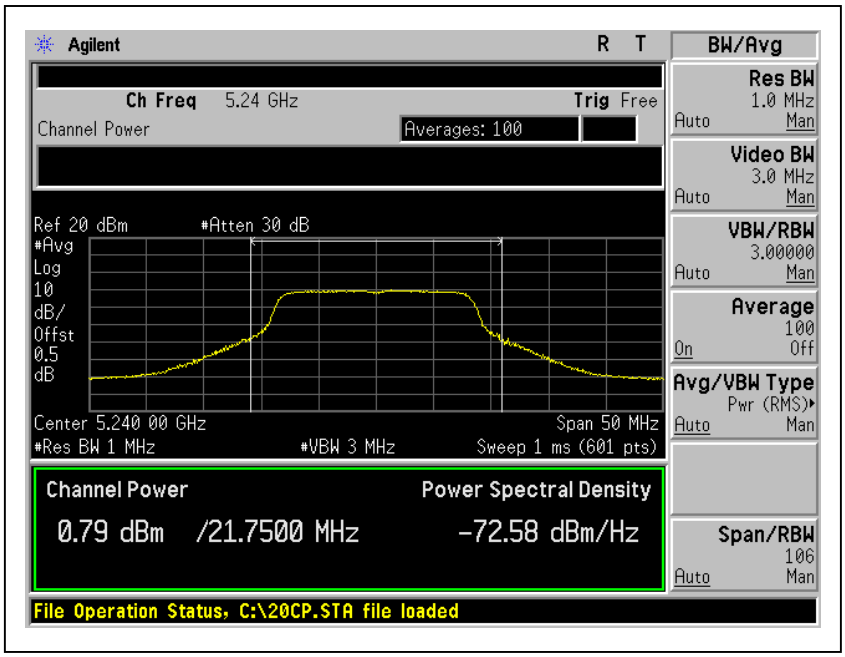
For Chain (1) :CH1



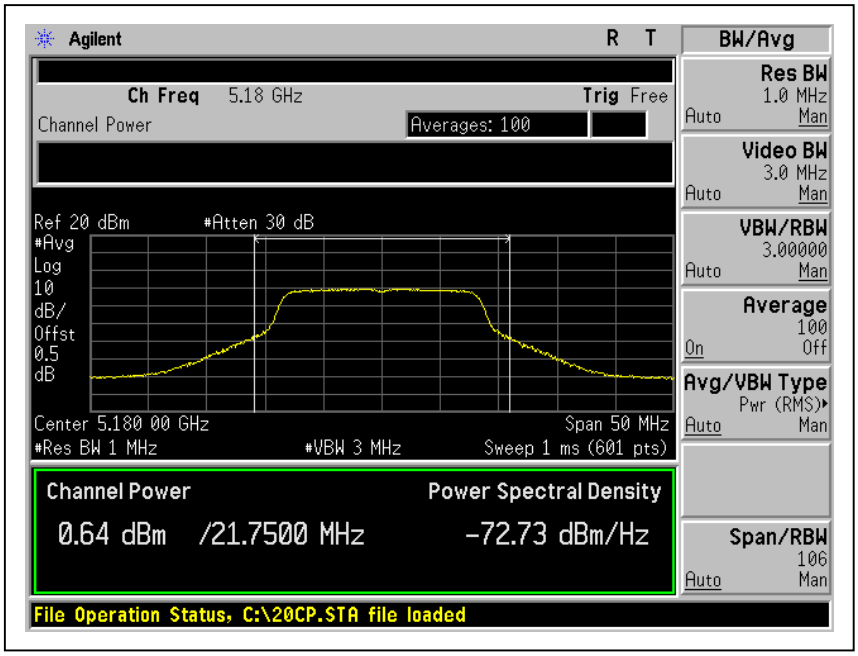
CH2



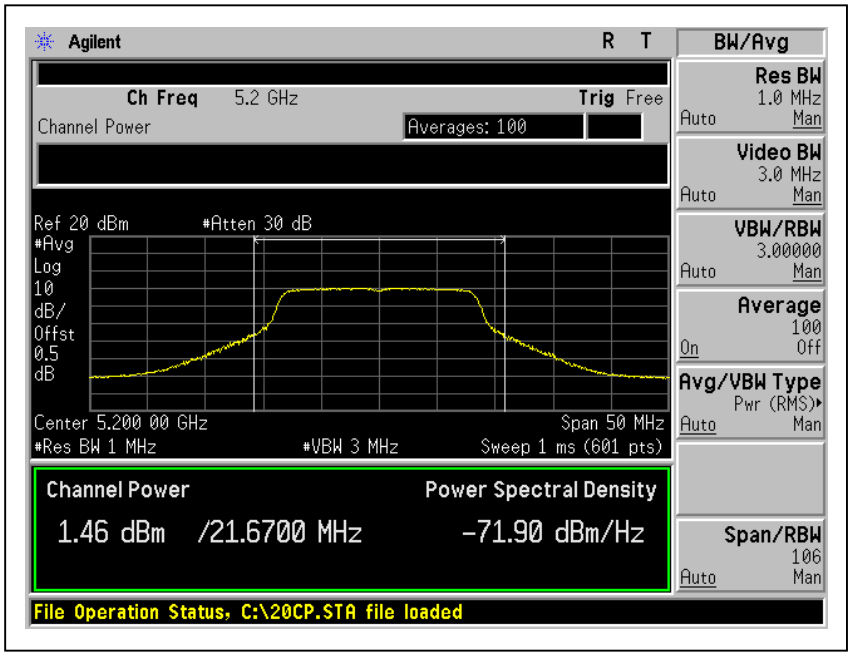
CH4


Agilent
R T
BW/Avg
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
0.79 dBm
/21.7500 MHz
Power Spectral Density
-72.58 dBm/Hz
Span/RBW
106
Auto Man
File Operation Status, C:\20CP.STA file loaded

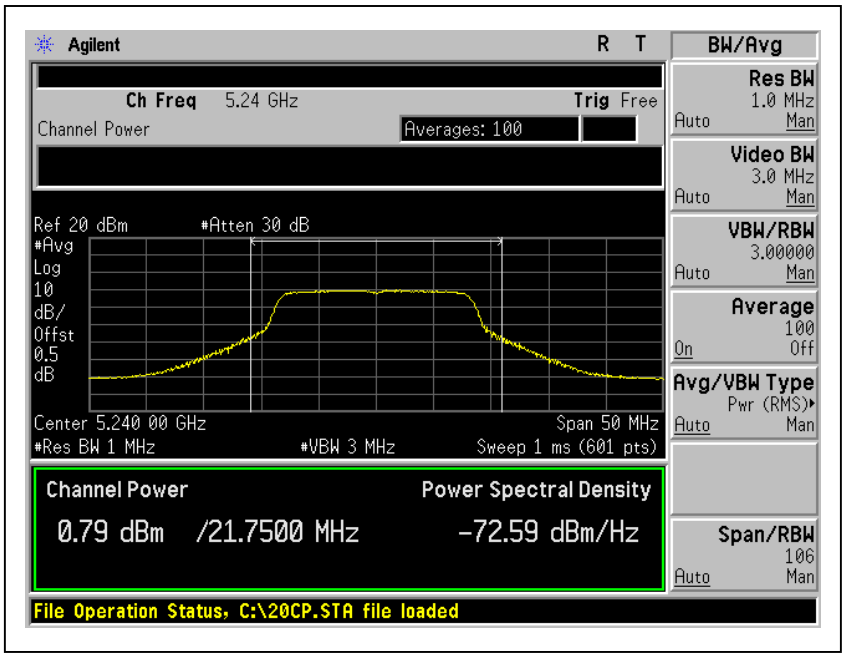
For Chain (2) **:**CH1



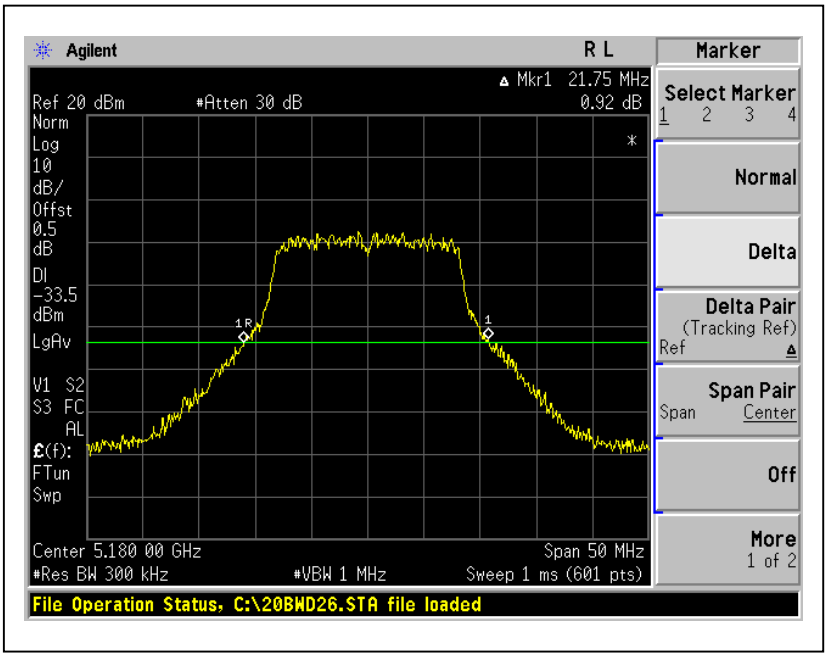
CH2



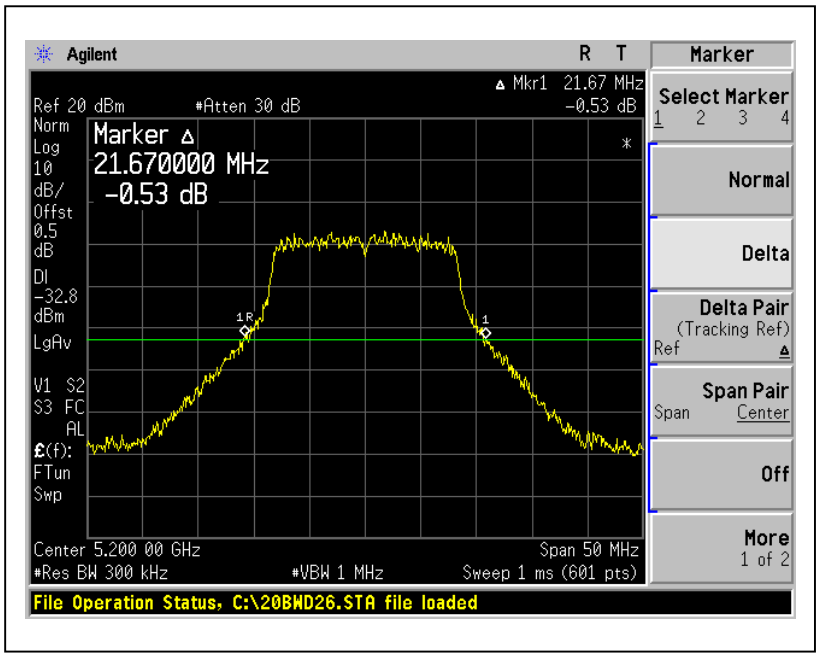
CH4


Agilent
R T
BW/Avg
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Res BW
1.0 MHz
Auto Man
Video BW
3.0 MHz
Auto Man
VBW/RBW
3.00000
Auto Man
Average
100
On Off
Avg/VBW Type
Pwr (RMS)
Auto Man
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
Power Spectral Density
0.79 dBm /21.7500 MHz
-72.59 dBm/Hz
Span/RBW
106
Auto Man
File Operation Status, C:\20CP.STA file loaded

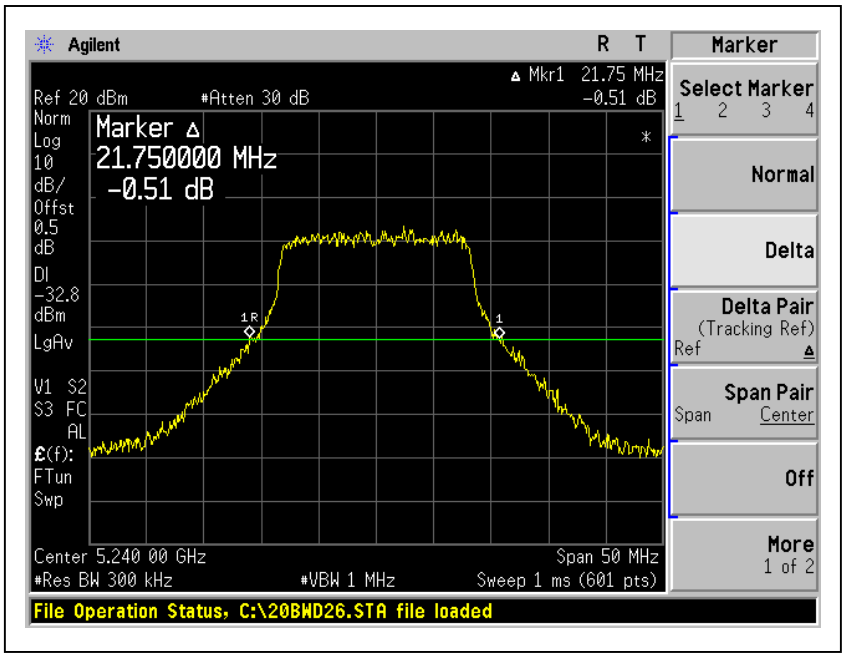
26dB Occupied Bandwidth:
CH1



CH2



CH4


Agilent
R T
Marker
Mkr1 21.75 MHz
-0.51 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
0.5
dB
Dl
-32.8
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Marker Δ
21.750000 MHz
-0.51 dB
1R
1
Center 5.240 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

DRAFT 802.11n (20MHz) OFDM modulation:

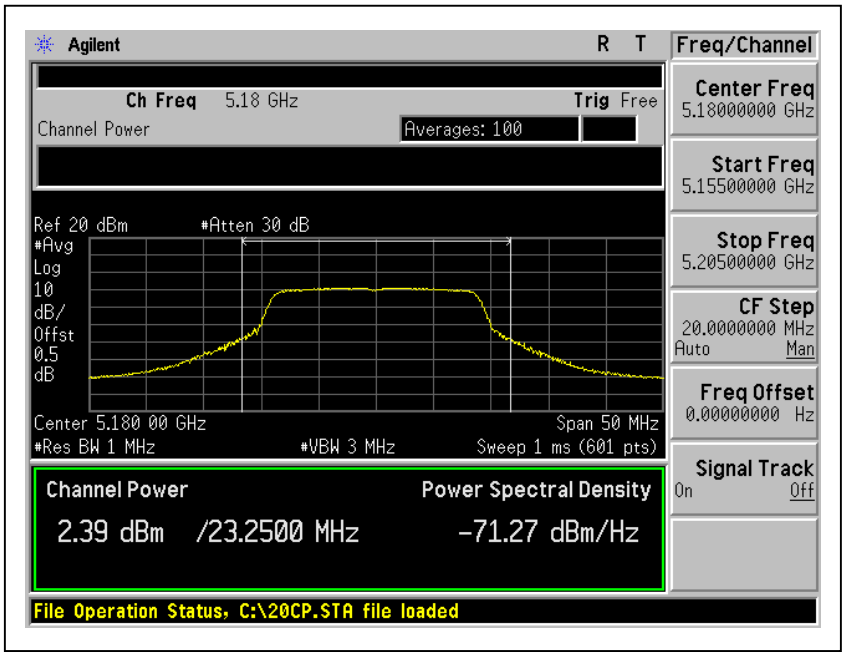
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			TOTAL PEAK POWER (dBm)	TOTAL PEAK POWER (mW)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
		Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2					
1	5180	2.39	0.68	2.19	1.734	1.169	1.656	6.59	4.559	8.50	23.25	PASS
2	5200	2.16	0.79	1.35	1.644	1.199	1.365	6.24	4.208	8.50	22.92	PASS
4	5240	2.56	0.92	1.23	1.803	1.236	1.327	6.40	4.366	8.50	23.00	PASS

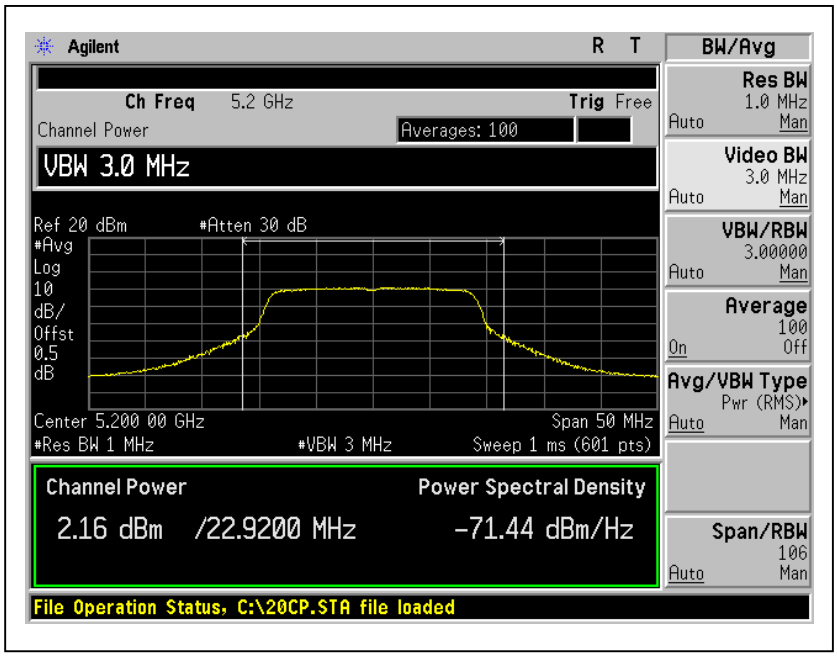
NOTE: 1. The 26dBc Occupied Bandwidth plot, please refer to the following pages.

2. Power limitation=17-(14.5-6) =8.5dBm (For non-point to point application).

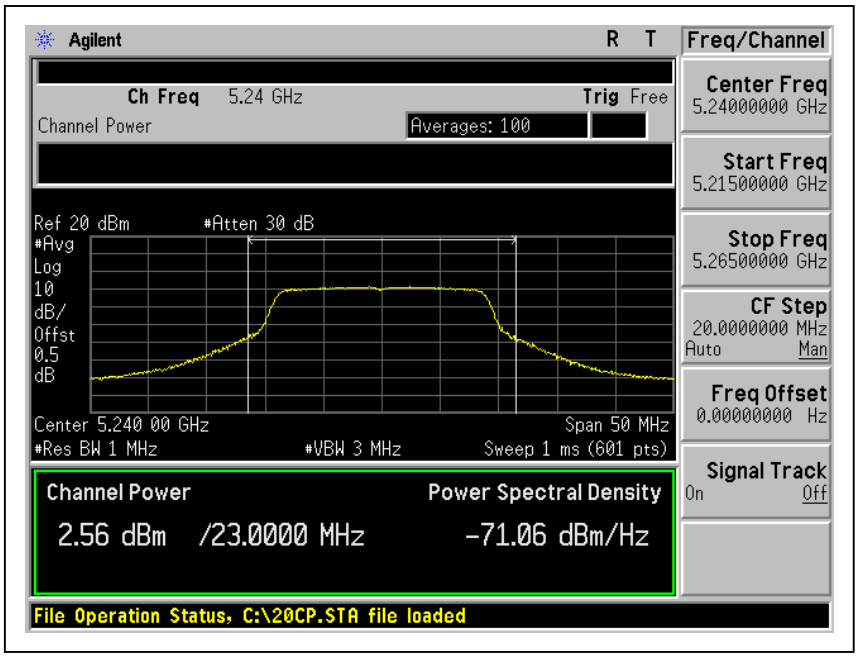
Peak Power Output:
For Chain (0) :CH1



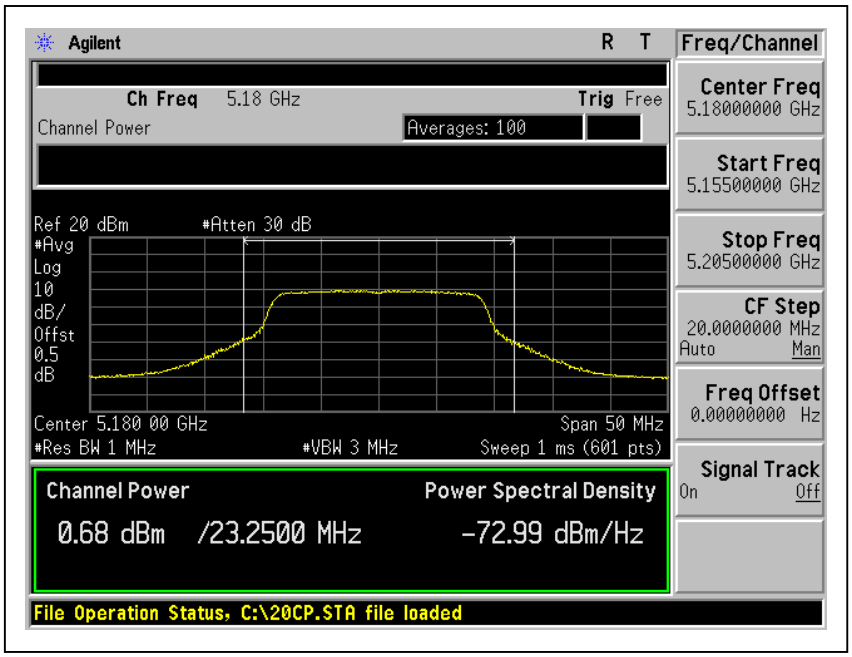
CH2



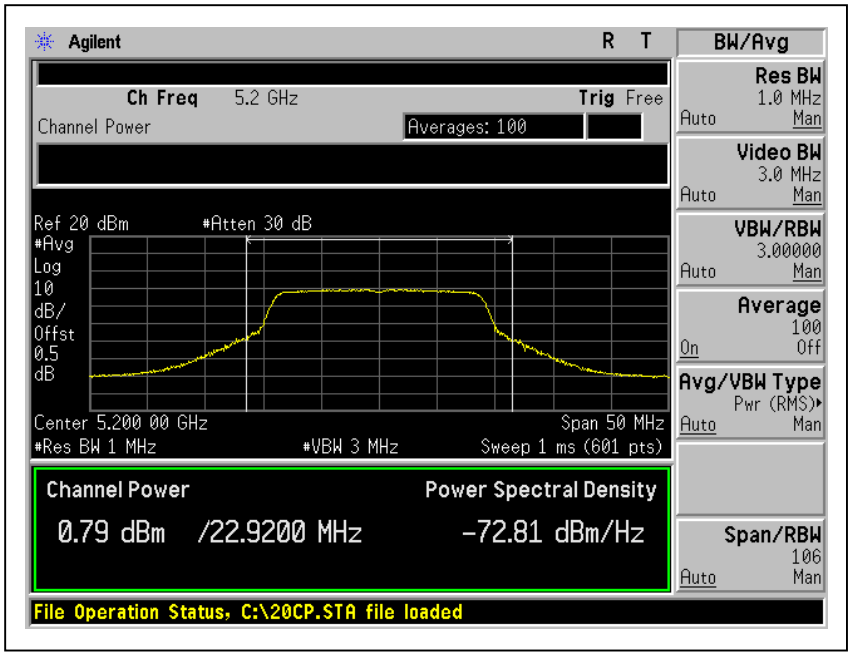
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
2.56 dBm /23.0000 MHz
Power Spectral Density
-71.06 dBm/Hz
File Operation Status, C:\20CP.STA file loaded

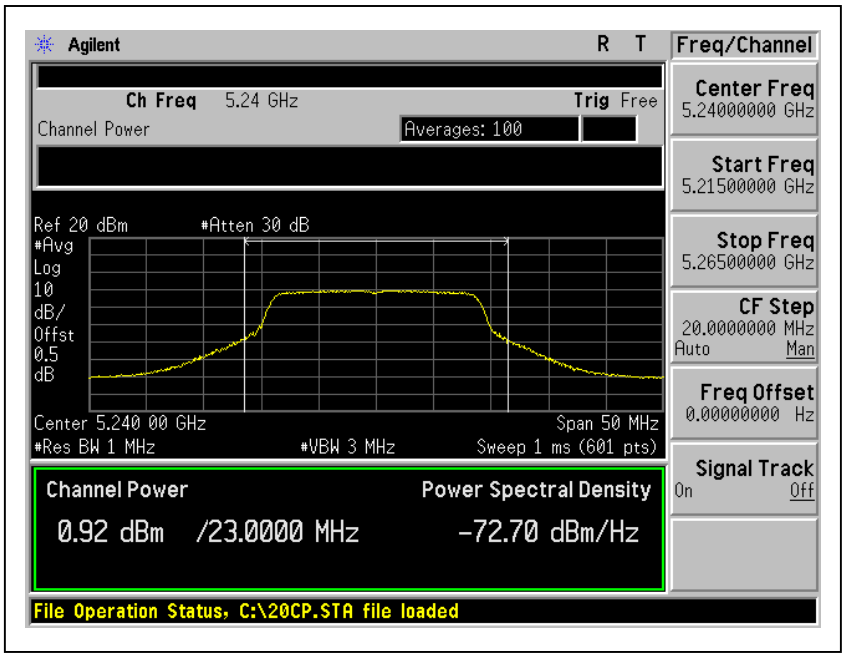
For Chain (1) **:**CH1



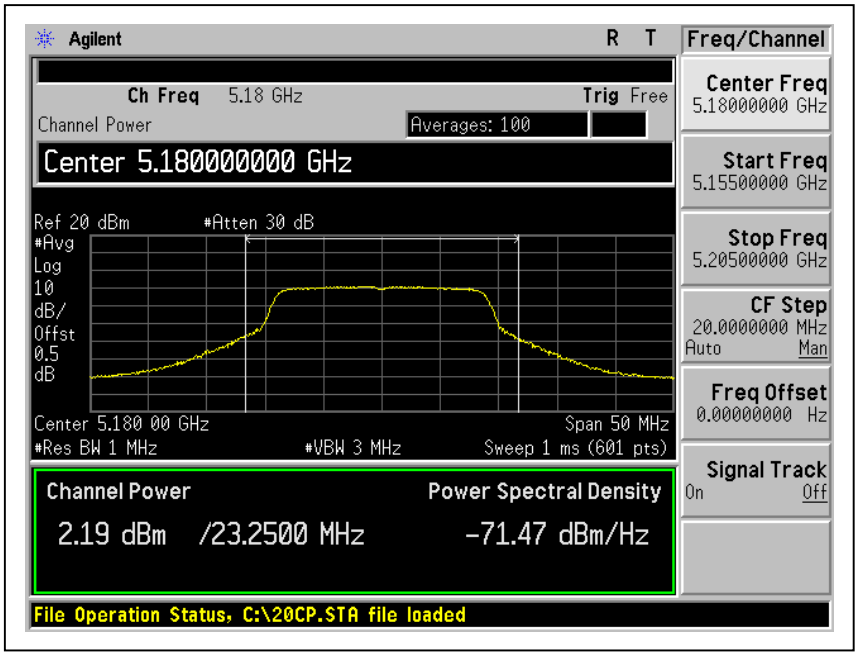
CH2



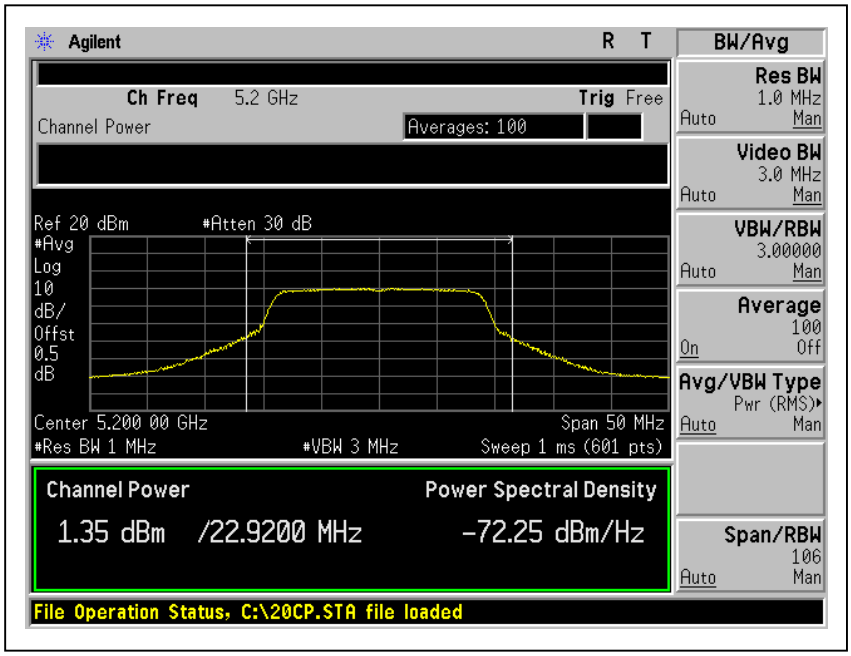
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
0.92 dBm
/23.0000 MHz
Power Spectral Density
-72.70 dBm/Hz
File Operation Status, C:\20CP.STA file loaded
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto
Man
Freq Offset
0.00000000 Hz
Signal Track
On
Off

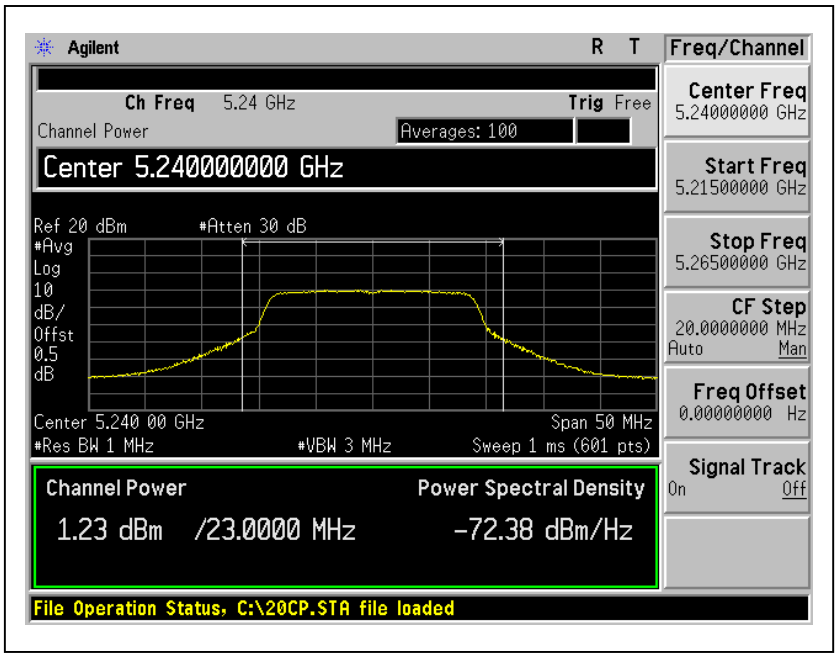
For Chain (2) **:**CH1



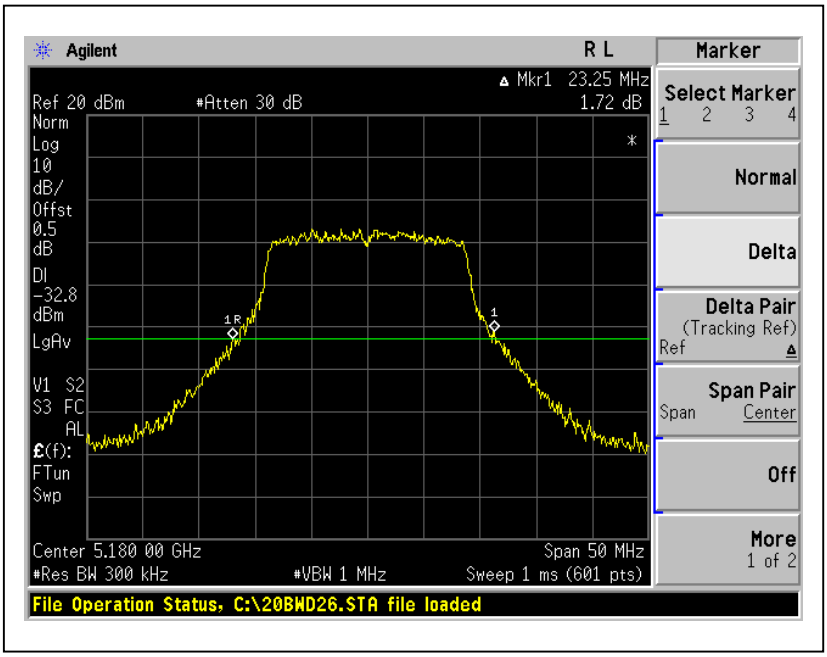
CH2



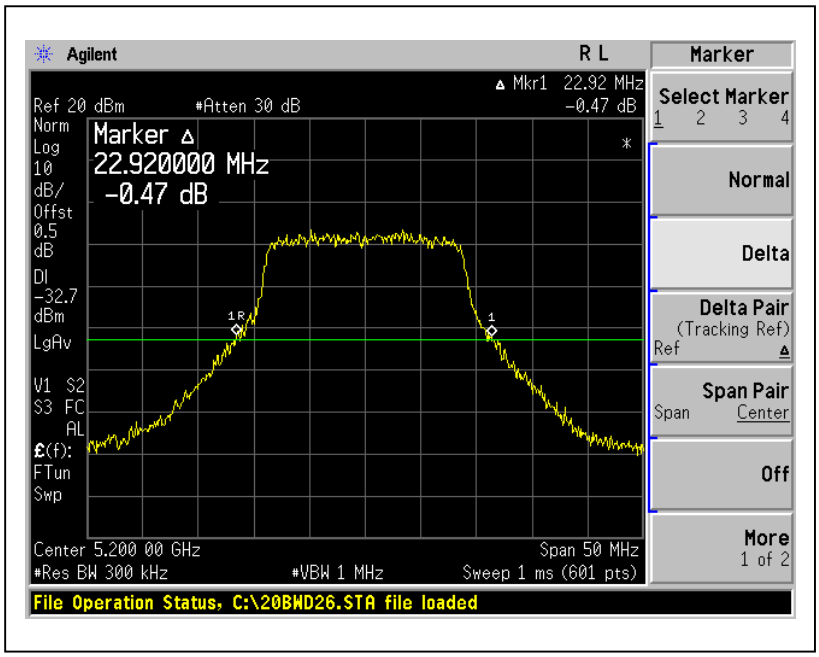
CH4


Agilent
R T
Freq/Channel
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Center 5.240000000 GHz
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Channel Power
Power Spectral Density
1.23 dBm /23.0000 MHz
-72.38 dBm/Hz
File Operation Status, C:\20CP.STA file loaded
Center Freq
5.24000000 GHz
Start Freq
5.21500000 GHz
Stop Freq
5.26500000 GHz
CF Step
20.0000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off

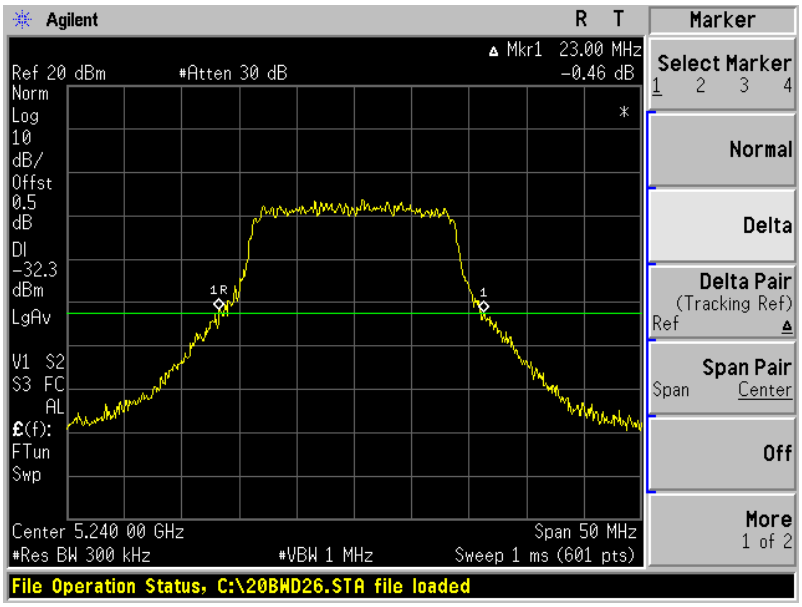
26dB Occupied Bandwidth:
CH1



CH2



CH4


Agilent
R T
Marker
Mkr1 23.00 MHz
-0.46 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
0.5
dB
Dl
-32.3
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
1R
1
Center 5.240 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

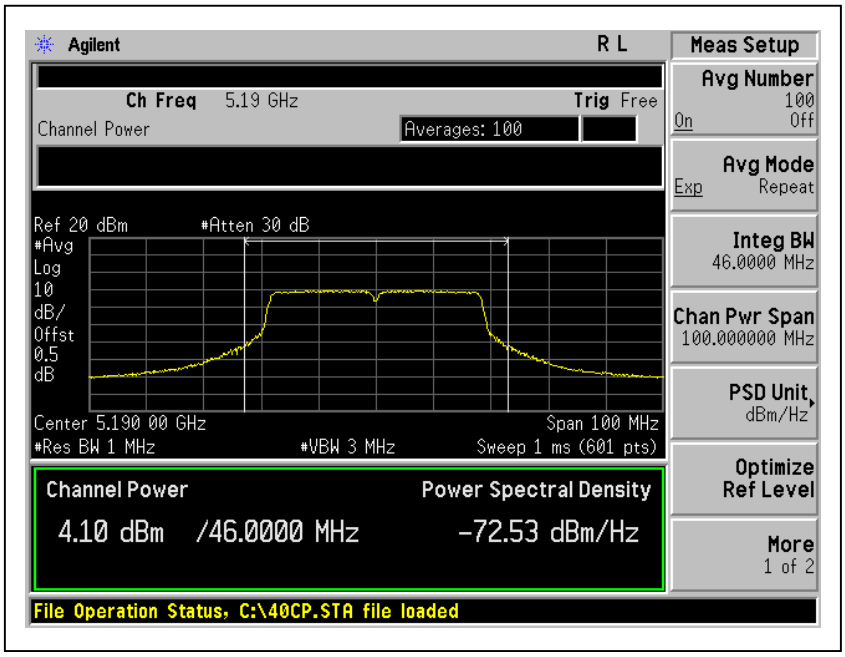
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)			PEAK POWER OUTPUT (mW)			TOTAL PEAK POWER (dBm)	TOTAL PEAK POWER (mW)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
		Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2					
1	5190	4.1	2.63	3.13	2.570	1.832	2.056	8.10	6.458	8.50	46.00	PASS
2	5230	4.06	2.8	3.44	2.547	1.905	2.208	8.23	6.660	8.50	45.17	PASS

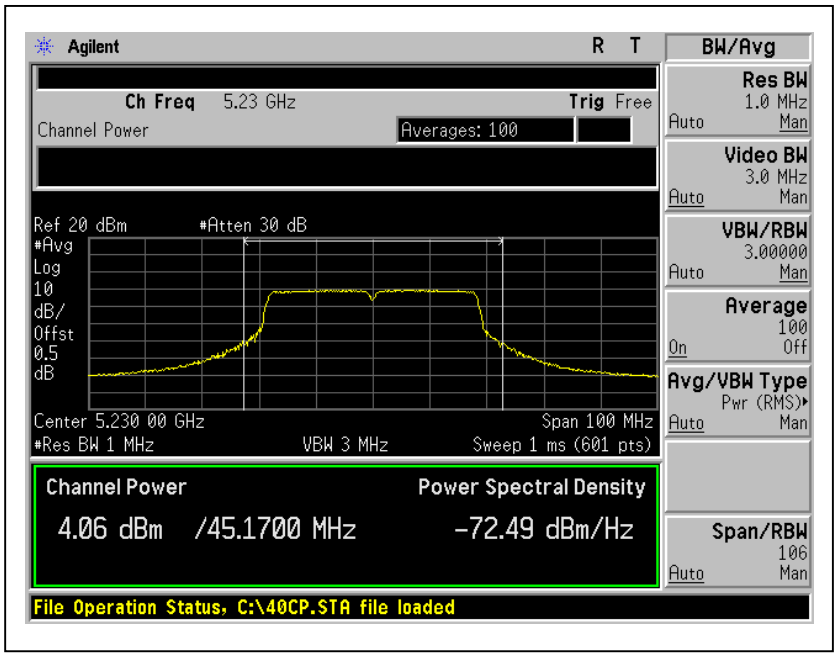
NOTE: 1. The 26dBc Occupied Bandwidth plot, please refer to the following pages.

2. Power limitation=17-(14.5-6) =8.5dBm (For non-point to point application).

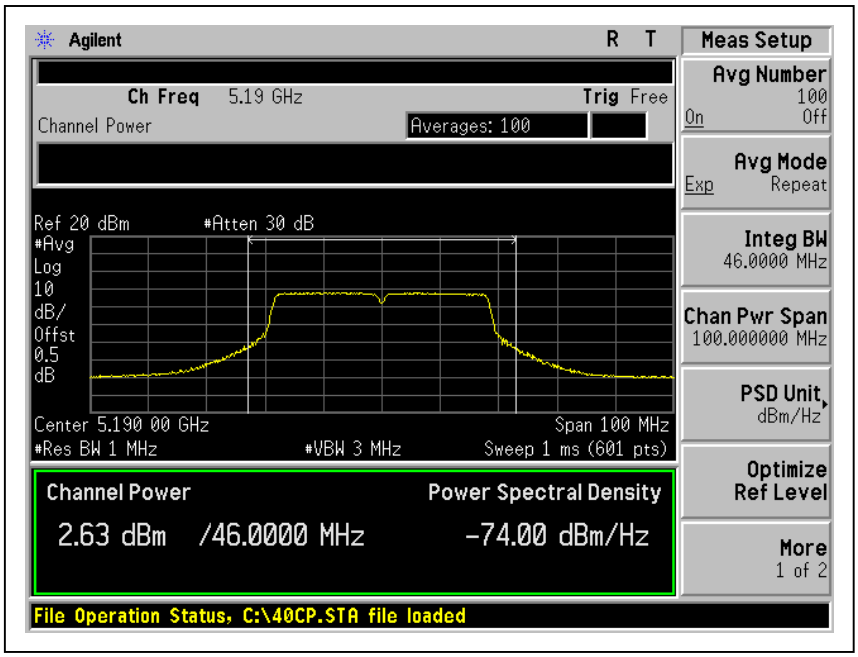
Peak Power Output:
For Chain (0) :CH1



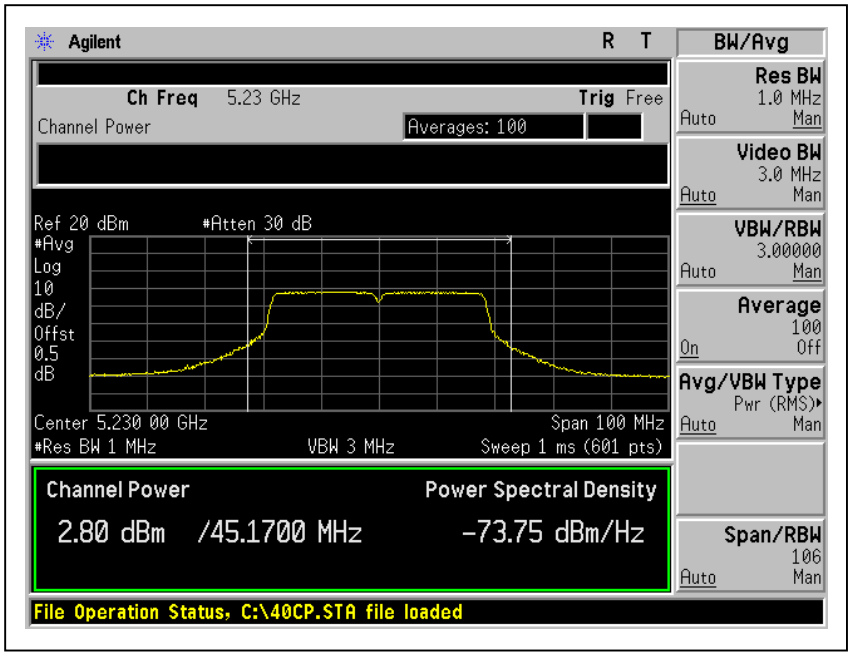
CH2



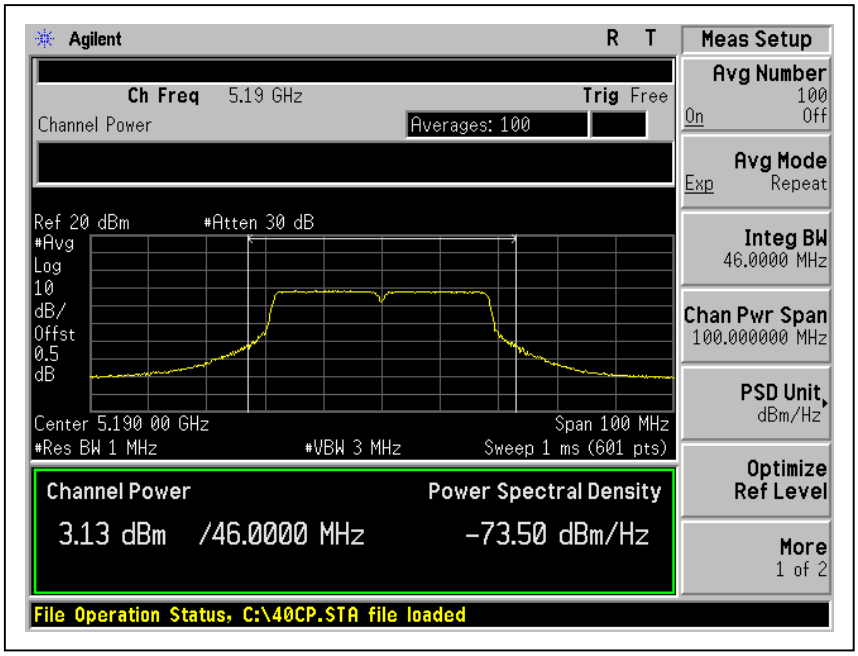
For Chain (1) :CH1



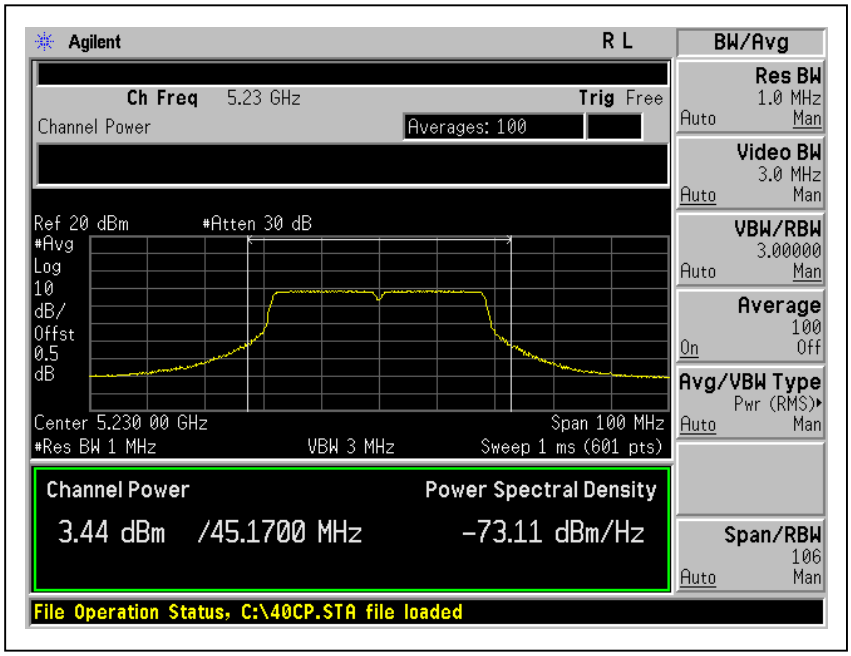
CH2



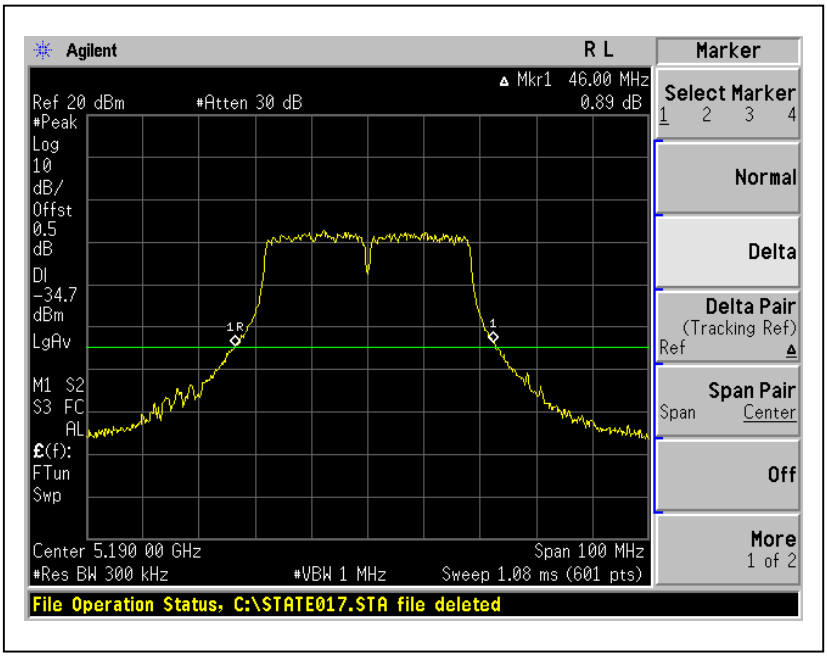
For Chain (2) **:**CH1



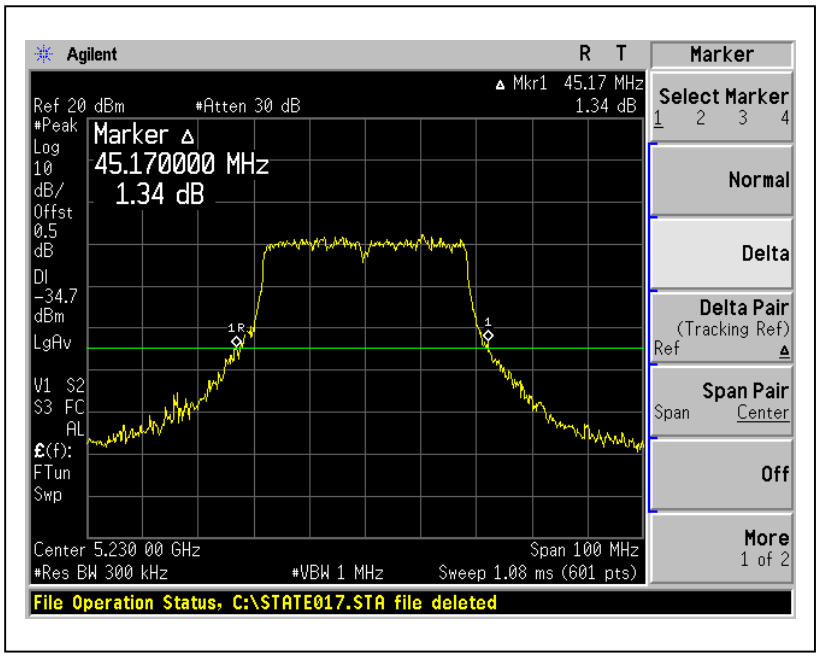
CH2



26dB Occupied Bandwidth:
CH1



CH2



4.3.12 TEST RESULTS – ANTENNA 12

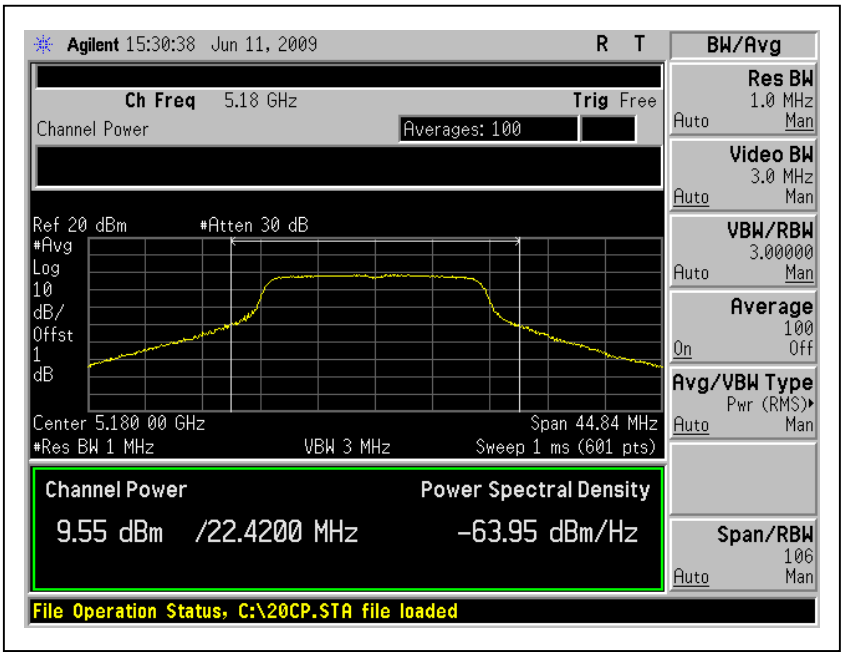
802.11a OFDM MODULATION:

MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

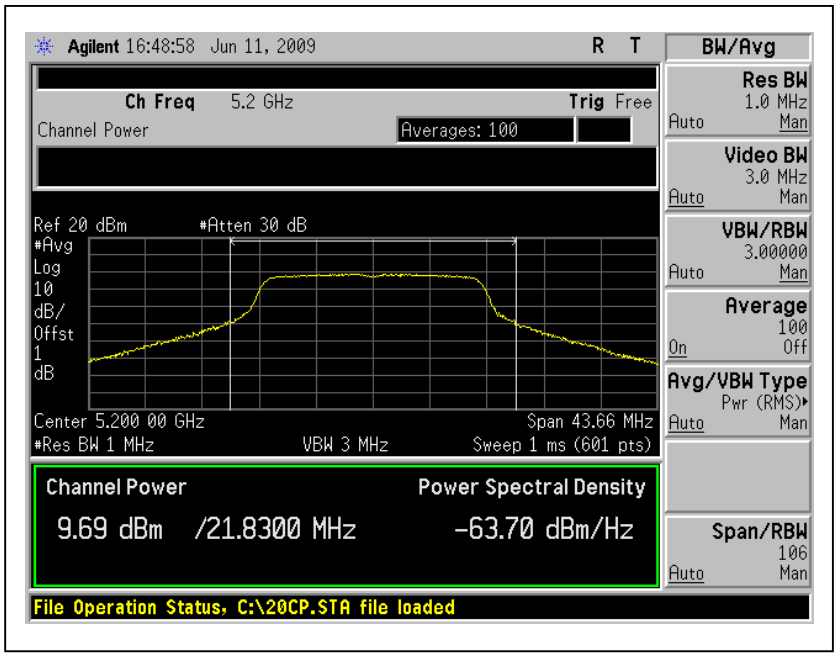
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER (dBm)	PEAK POWER (mW)	POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/ FAIL
1	5180	9.55	9.016	17	22.42	PASS
2	5200	9.69	9.311	17	21.83	PASS
4	5240	9.87	9.705	17	22.92	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

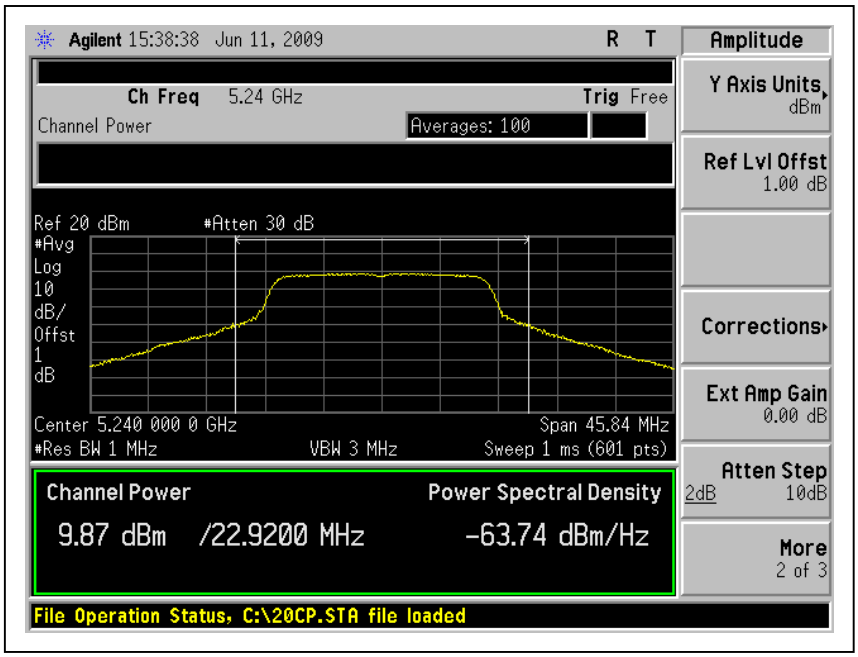
Peak Power Output:
CH1



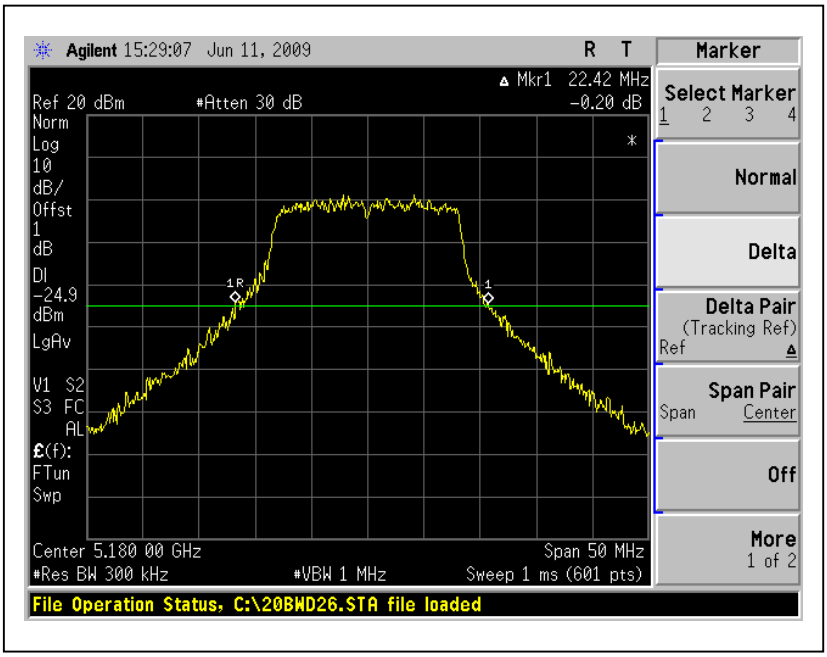
CH2



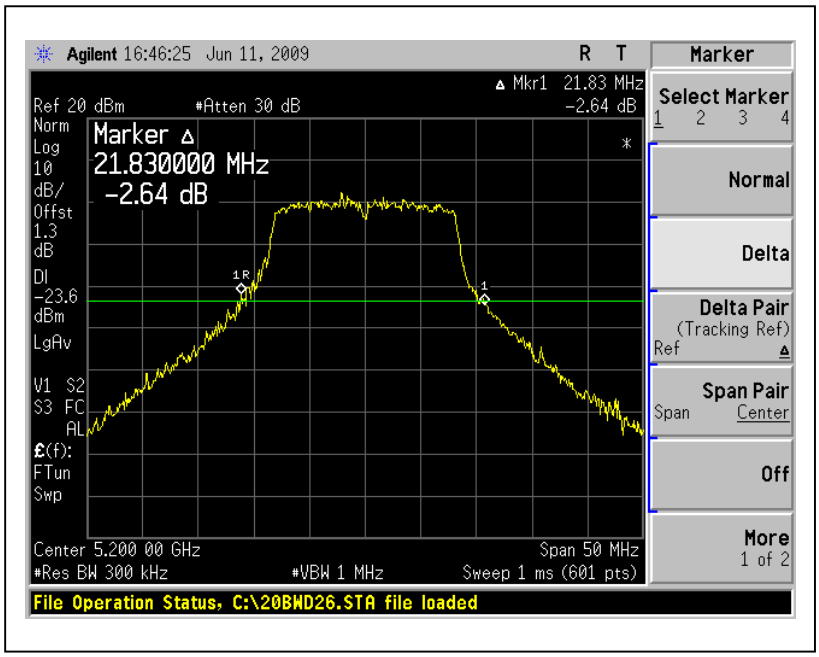
CH4


Agilent 15:38:38 Jun 11, 2009
R T
Amplitude
Ch Freq 5.24 GHz
Trig Free
Channel Power
Averages: 100
Y Axis Units
dBm
Ref Lvl Offst
1.00 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1
dB
Corrections
Ext Amp Gain
0.00 dB
Center 5.240 000 0 GHz
Span 45.84 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Atten Step
2dB 10dB
Channel Power
Power Spectral Density
9.87 dBm /22.9200 MHz
-63.74 dBm/Hz
More
2 of 3
File Operation Status, C:\20CP.STA file loaded

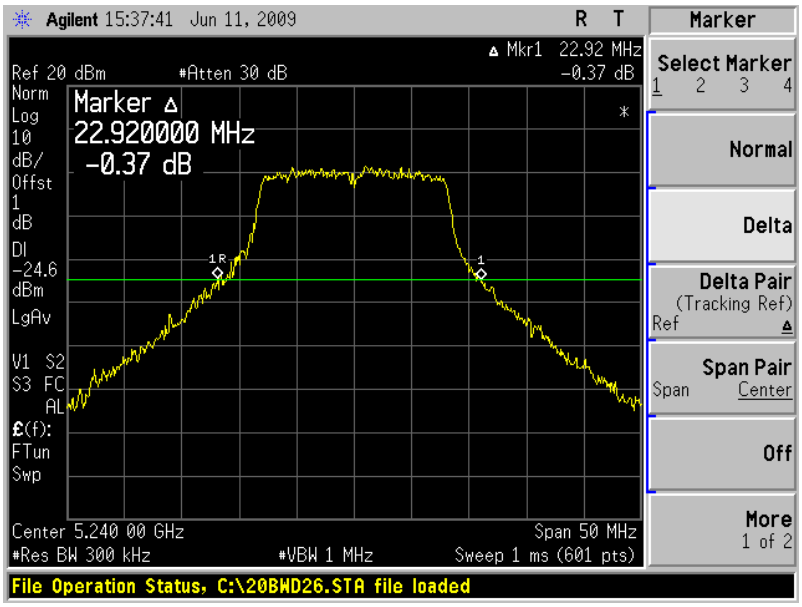
26dB Occupied Bandwidth:
CH1



CH2



CH4


Agilent 15:37:41 Jun 11, 2009
R T
Marker
Mkr1 22.92 MHz
-0.37 dB
Ref 20 dBm
#Atten 30 dB
Norm
Log
10
dB/
Offst
1
dB
Dl
-24.6
dBm
LgAv
V1 S2
S3 FC
AL
£(f):
FTun
Swp
Marker Δ
22.920000 MHz
-0.37 dB
1R
1
Center 5.240 00 GHz
#Res BW 300 kHz
#VBW 1 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, C:\20BWD26.STA file loaded

4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Frequency Band	Limit
5.15 – 5.25 GHz	13dB
5.25 – 5.35 GHz	13dB
5.47 – 5.725GHz	13dB
5.725 – 5.825 GHz	13dB

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

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

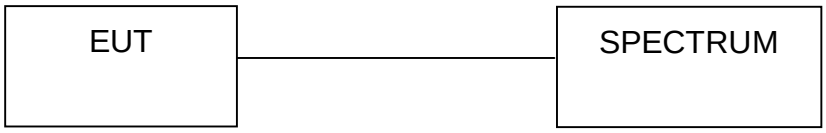
4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set the spectrum bandwidth span to view the entire spectrum.
3. Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=300KHz).
4. The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

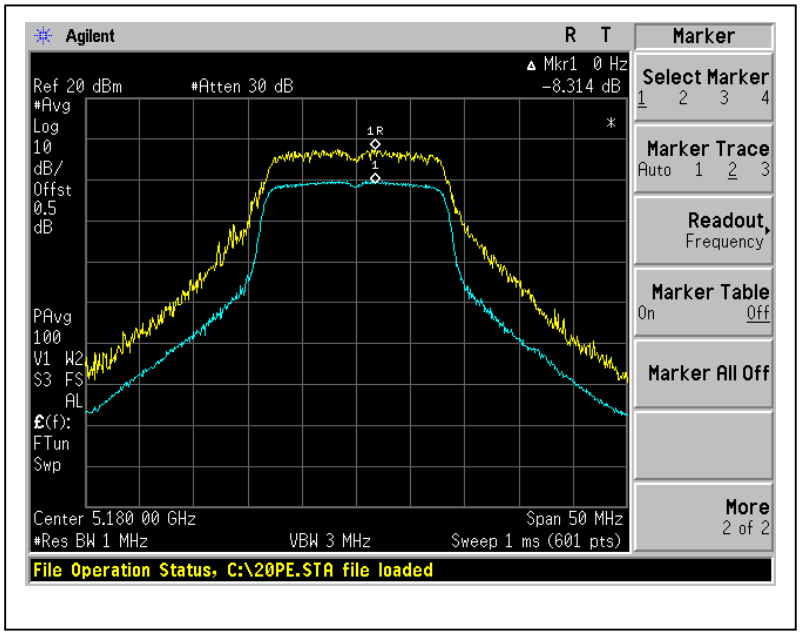
4.4.7 TEST RESULTS-ANTENNA 4

802.11a OFDM modulation

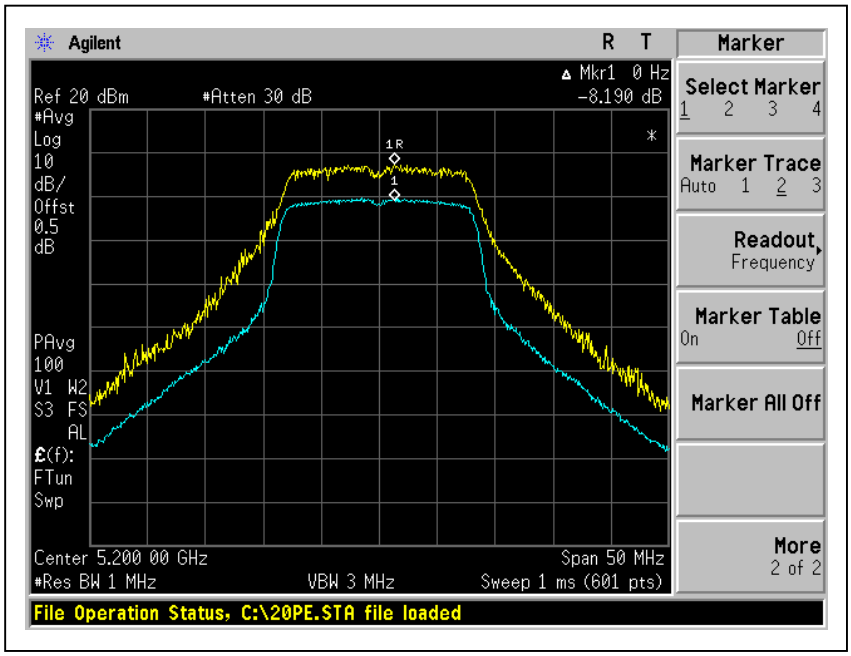
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.314	13	PASS
2	5200	8.190	13	PASS
4	5240	7.864	13	PASS

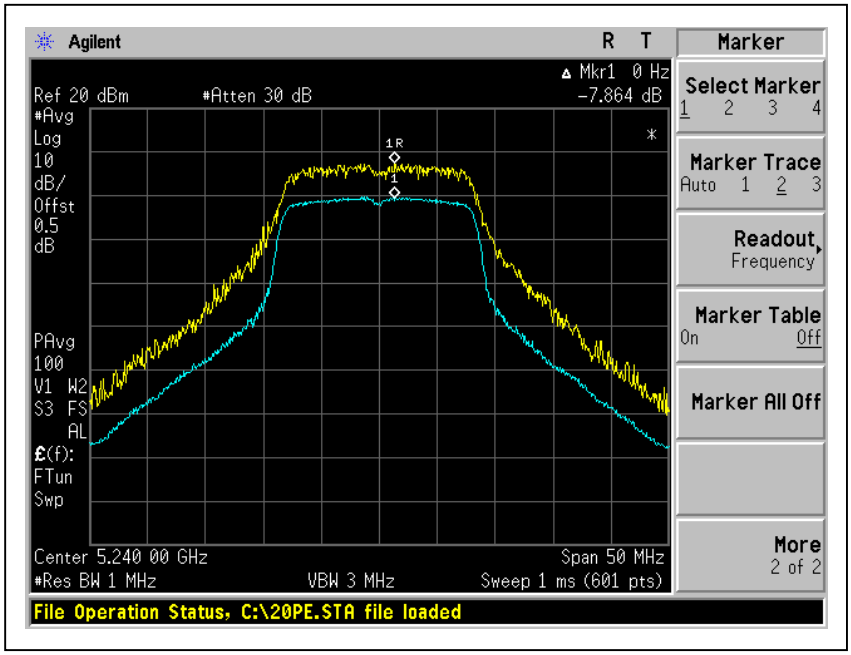
CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.314 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.180 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.190 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH4

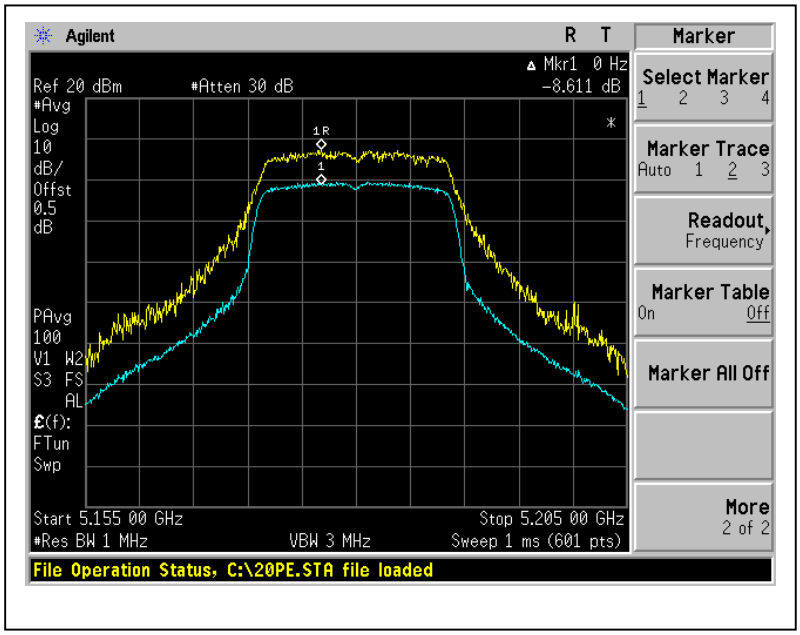

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-7.864 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

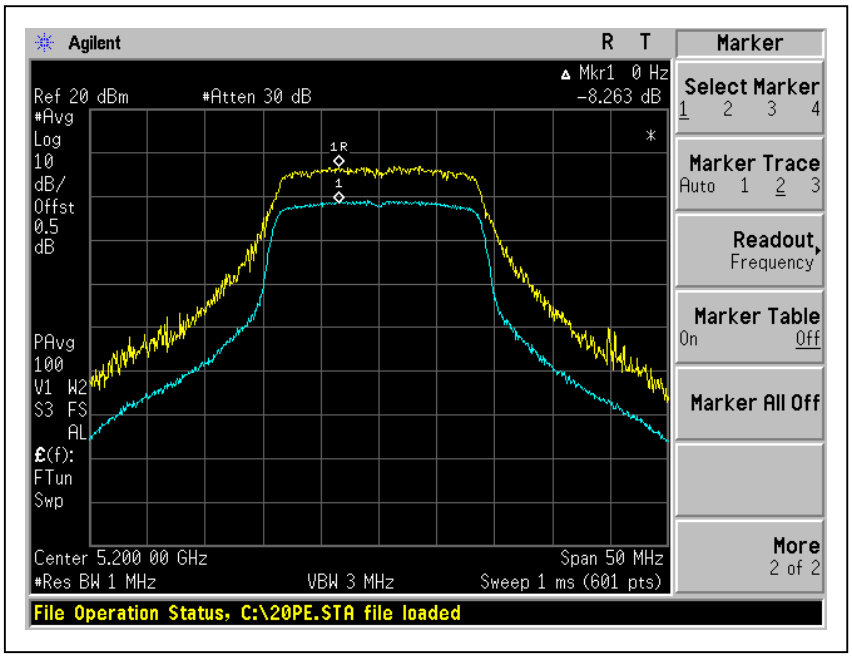
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 54%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.611	13	PASS
2	5200	8.263	13	PASS
4	5240	7.822	13	PASS

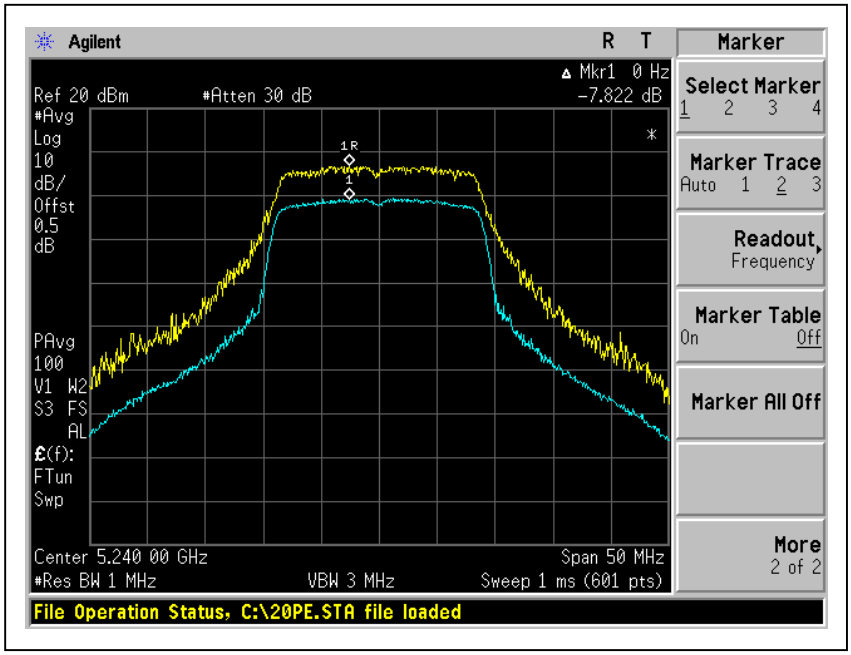
CH1


Agilent
R T
Marker
Δ Mkr1 0 Hz
-8.611 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Start 5.155 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Stop 5.205 00 GHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH2


Agilent
R T
Marker
Δ Mkr1 0 Hz
-8.263 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH4

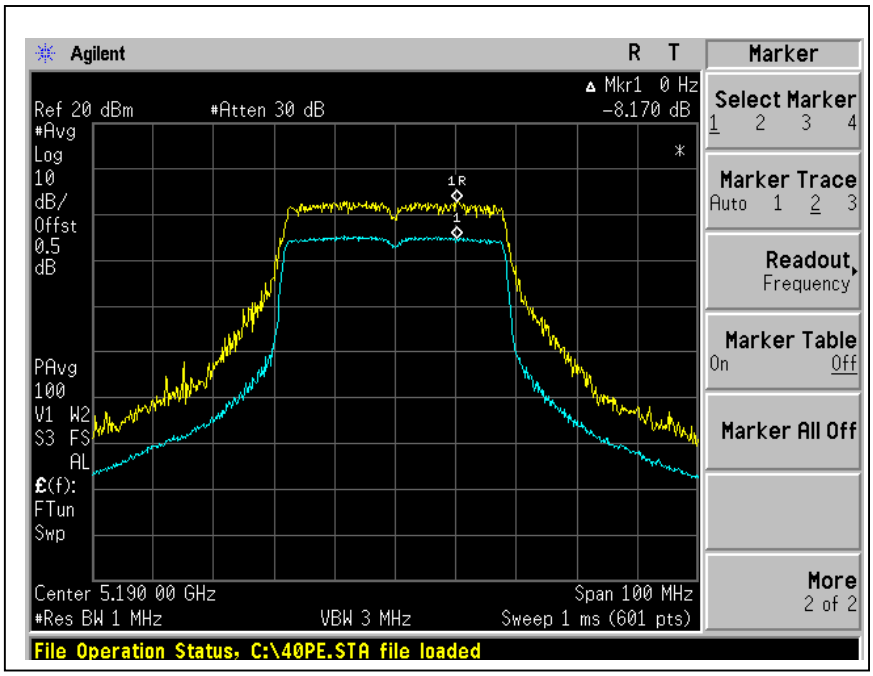

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-7.822 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
1
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

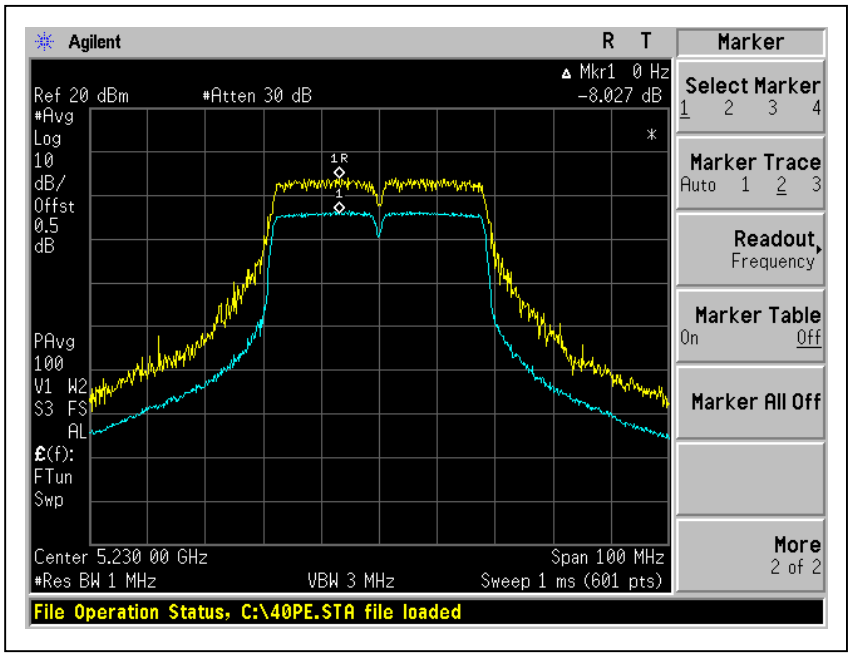
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5190	8.170	13	PASS
2	5230	8.027	13	PASS

CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.170 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.190 00 GHz
Span 100 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\40PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.027 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.230 00 GHz
Span 100 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\40PE.STA file loaded

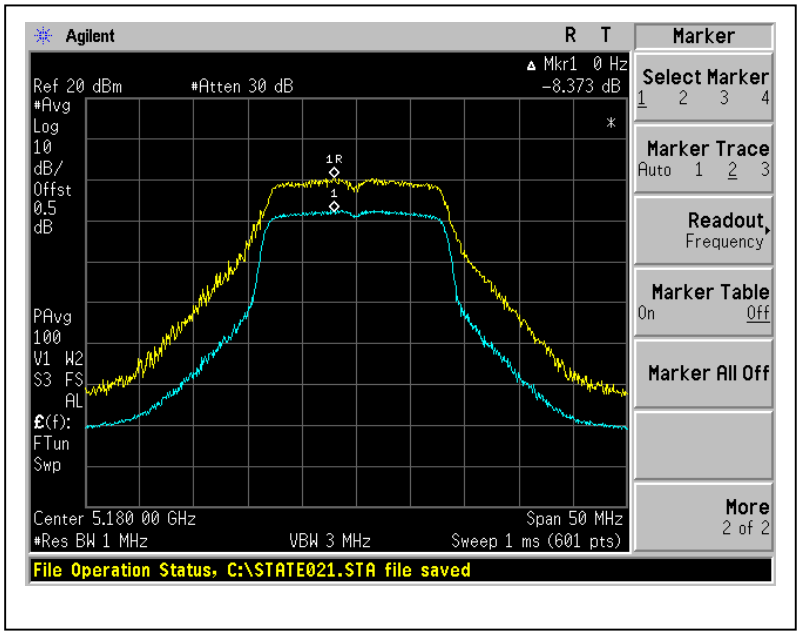
4.4.8 TEST RESULTS-ANTENNA 5

802.11a OFDM modulation

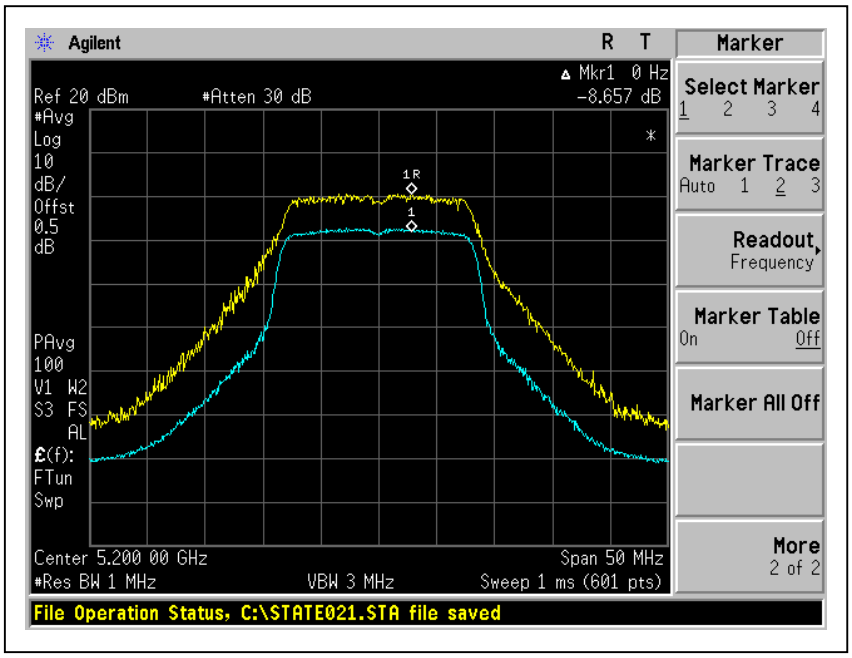
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.373	13	PASS
2	5200	8.657	13	PASS
4	5240	7.783	13	PASS

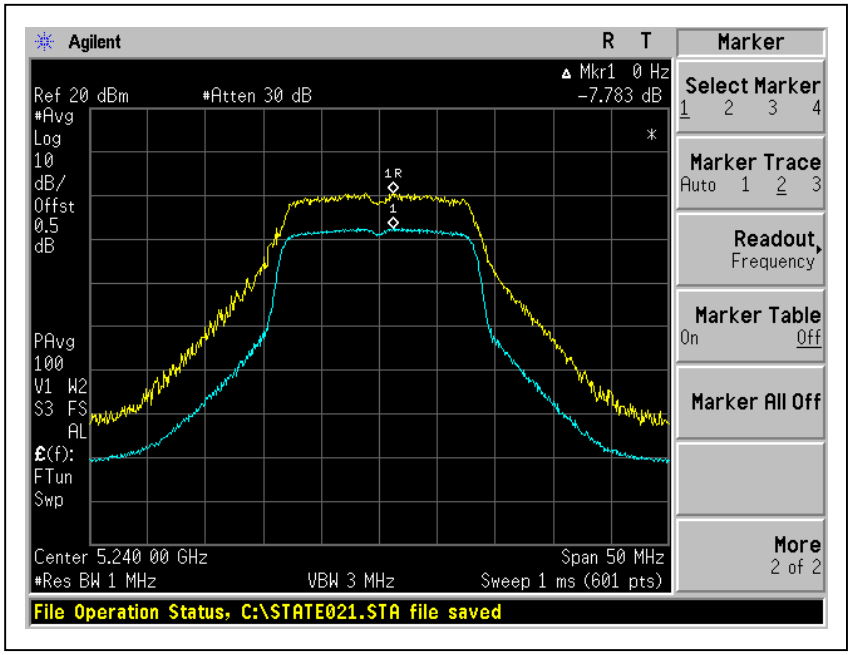
CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.373 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.180 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\STATE021.STA file saved

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.657 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\STATE021.STA file saved

CH4

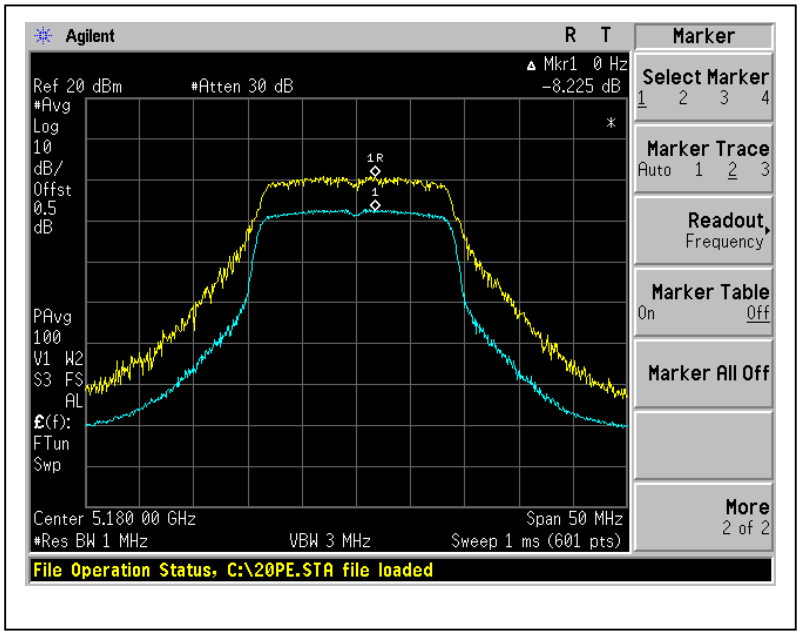

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-7.783 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
1
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\STATE021.STA file saved

DRAFT 802.11n (20MHz) OFDM MODULATION:

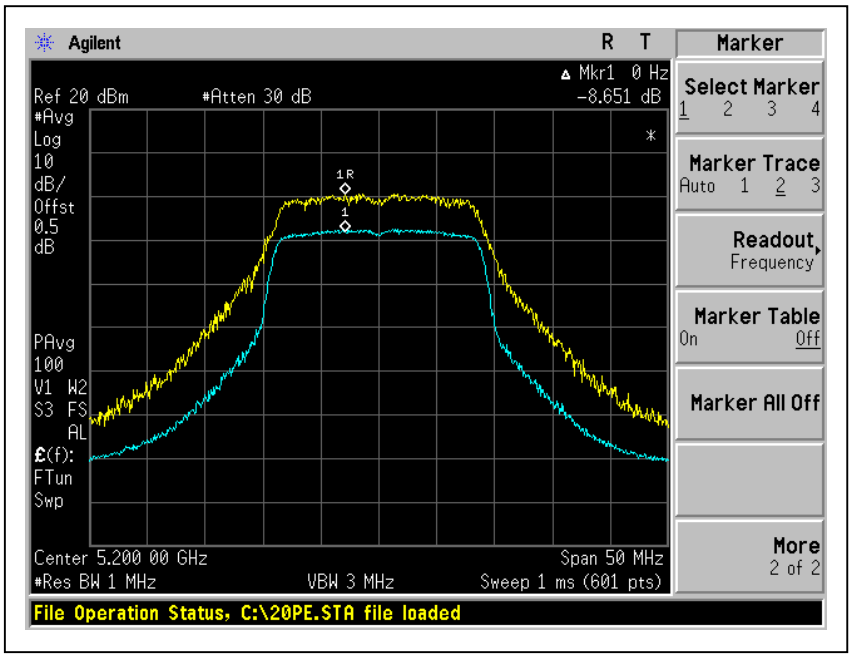
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 54%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.225	13	PASS
2	5200	8.651	13	PASS
4	5240	8.519	13	PASS

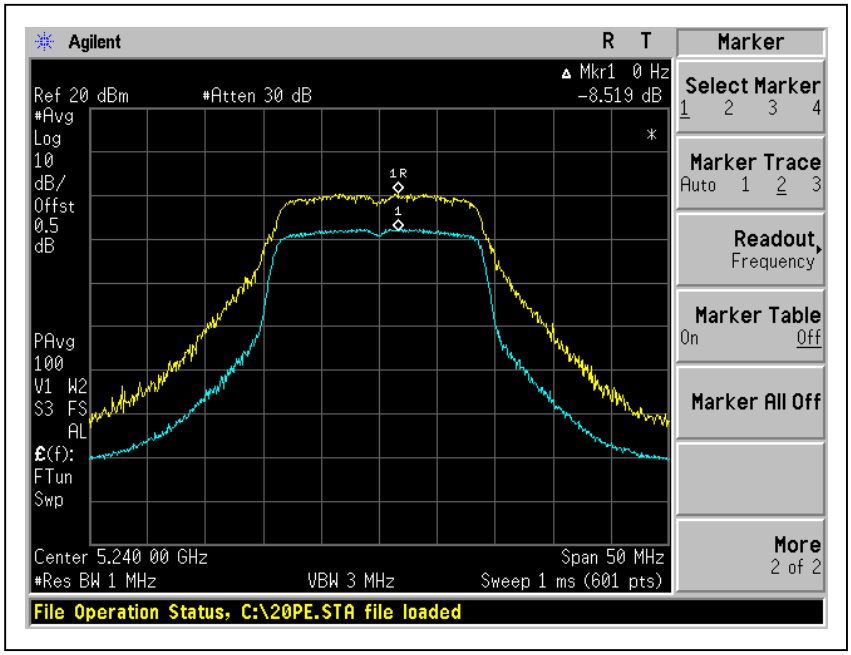
CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.225 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.180 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.651 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH4

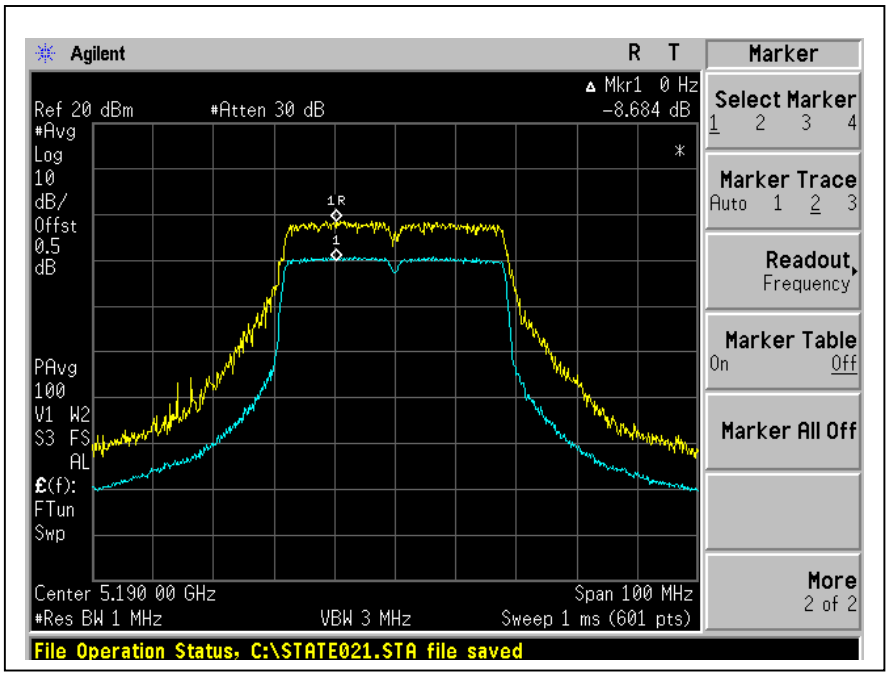

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-8.519 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
1
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

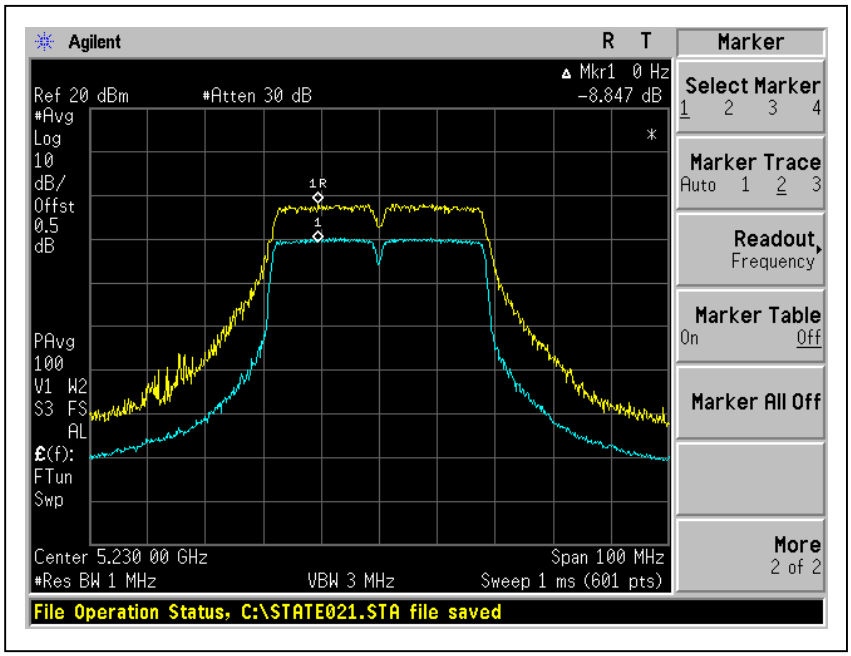
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5190	8.684	13	PASS
2	5230	8.847	13	PASS

CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.684 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.190 00 GHz
Span 100 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\STATE021.STA file saved

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.847 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.230 00 GHz
Span 100 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\STATE021.STA file saved

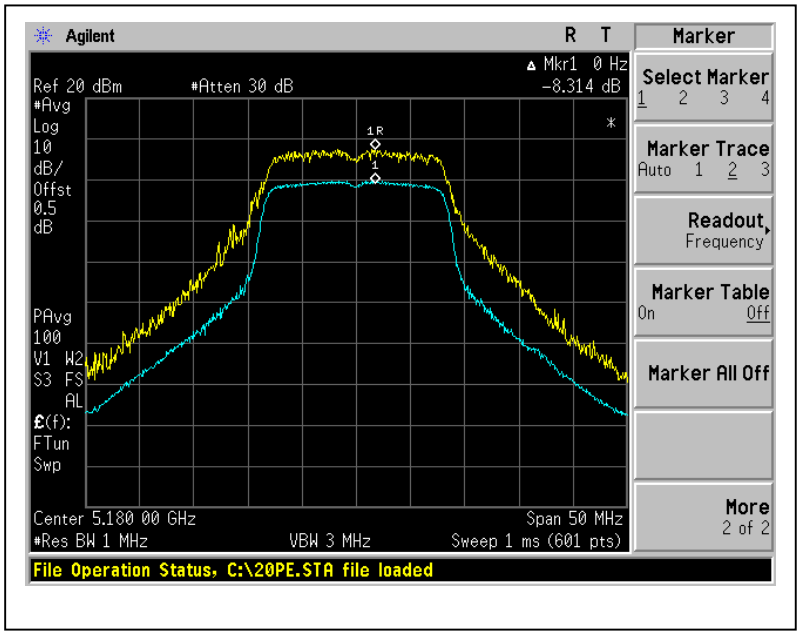
4.4.9 TEST RESULTS-ANTENNA 7

802.11a OFDM modulation

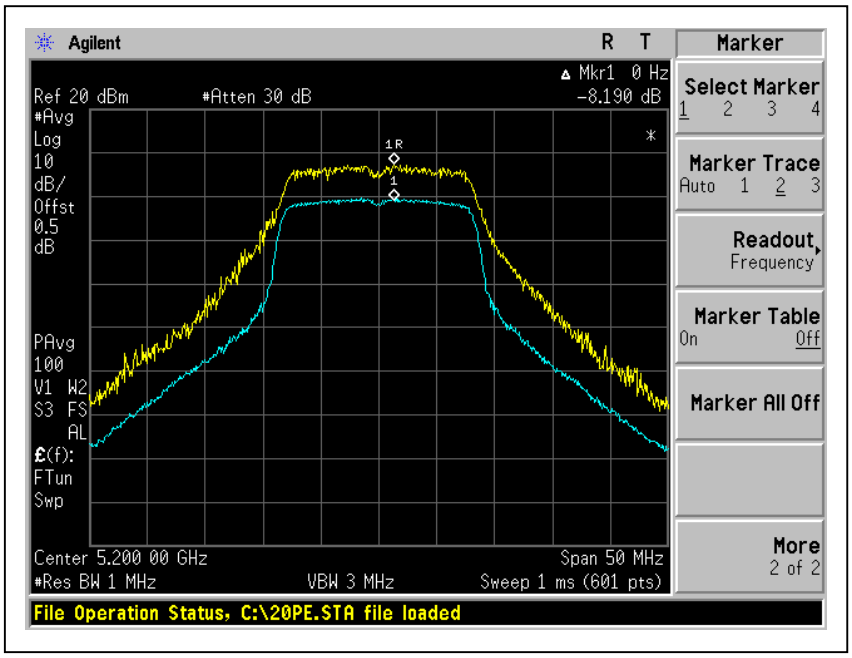
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.314	13	PASS
2	5200	8.190	13	PASS
4	5240	7.864	13	PASS

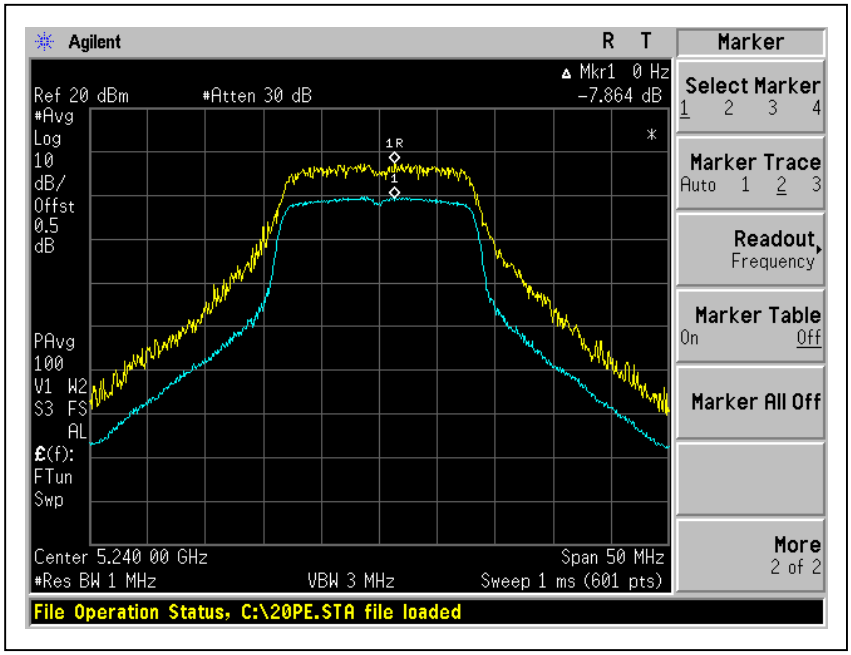
CH1


Agilent
R T
Marker
Δ Mkr1 0 Hz
-8.314 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.180 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH2


Agilent
R T
Marker
Δ Mkr1 0 Hz
-8.190 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH4

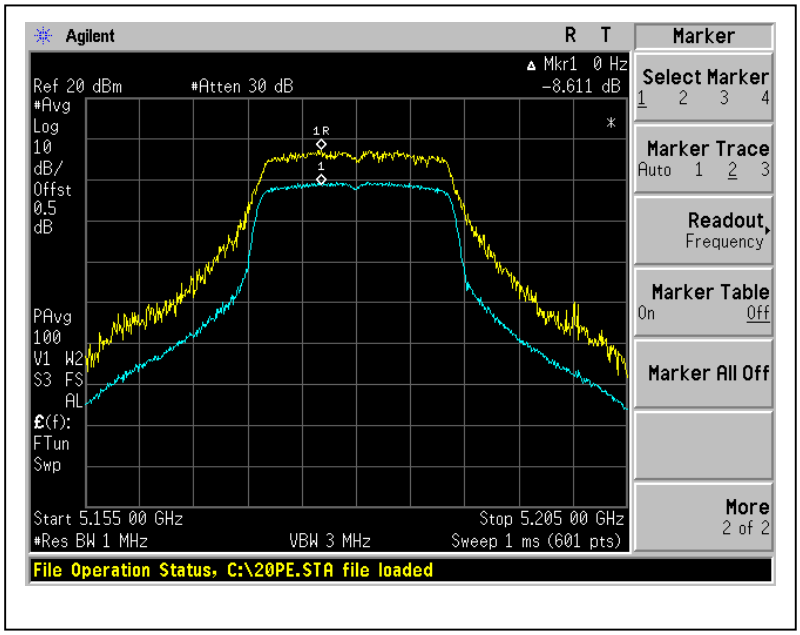

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-7.864 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

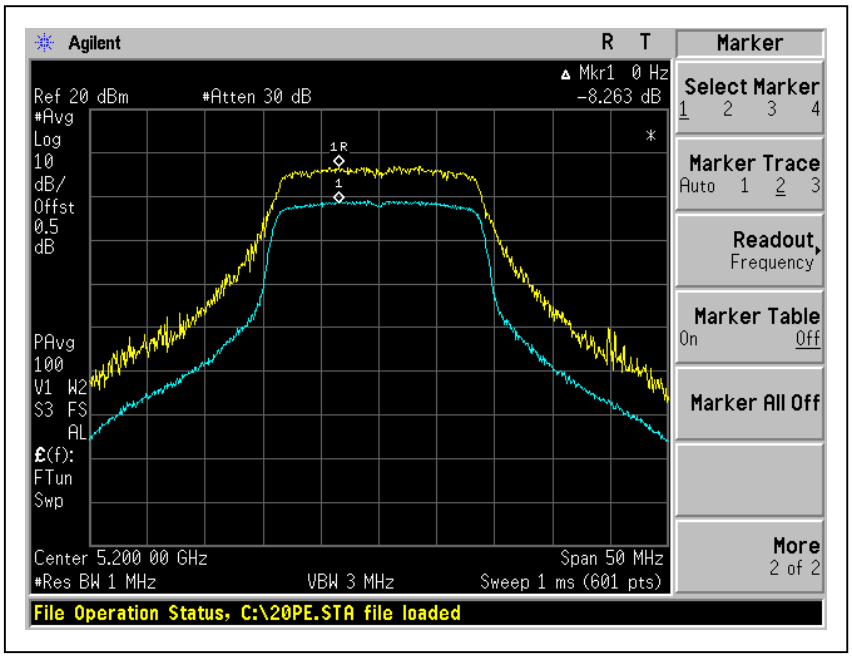
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 54%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.611	13	PASS
2	5200	8.263	13	PASS
4	5240	7.822	13	PASS

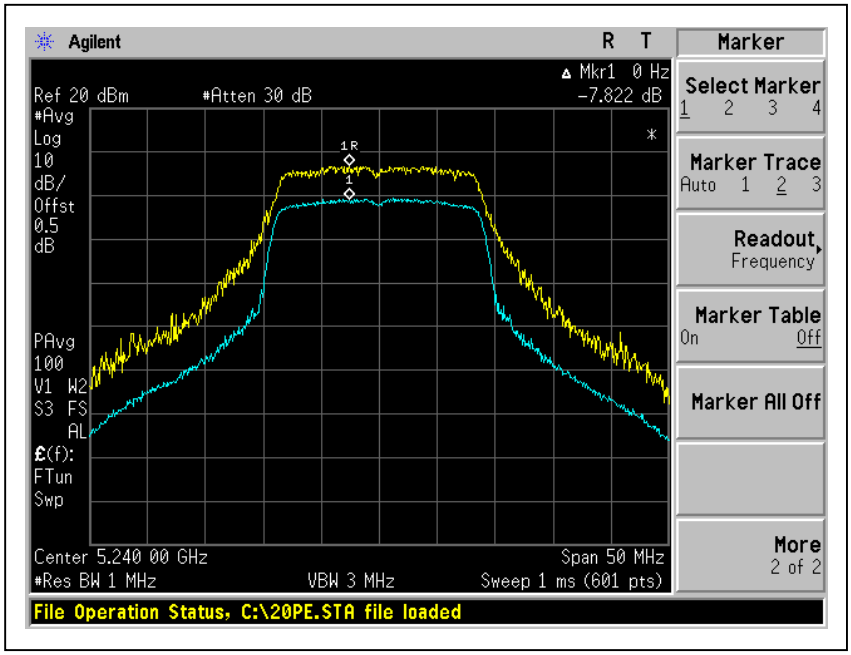
CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.611 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Start 5.155 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Stop 5.205 00 GHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.263 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH4

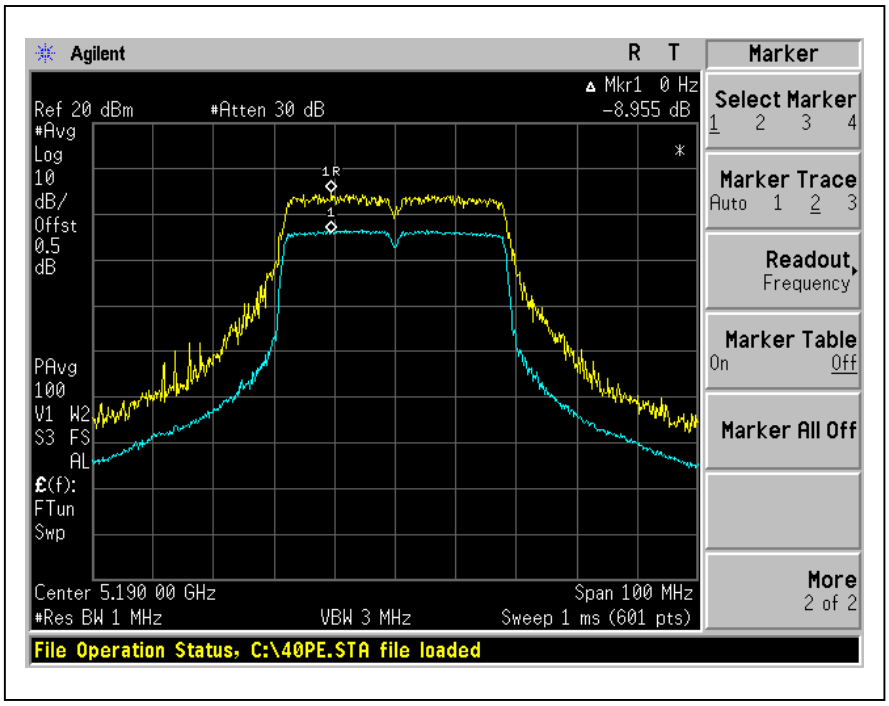

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-7.822 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
1
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

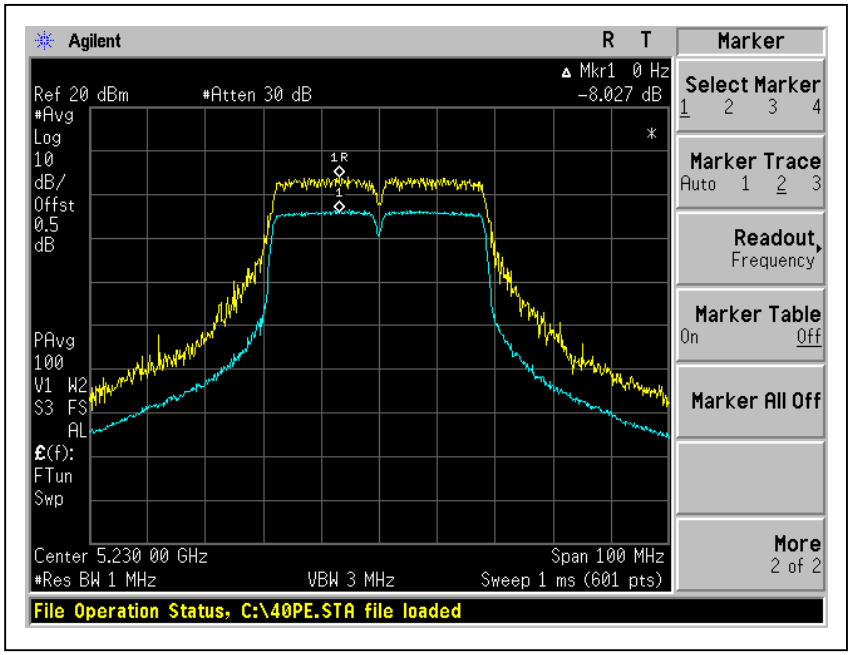
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5190	8.955	13	PASS
2	5230	8.027	13	PASS

CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.955 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.190 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 100 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\40PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.027 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.230 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 100 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\40PE.STA file loaded

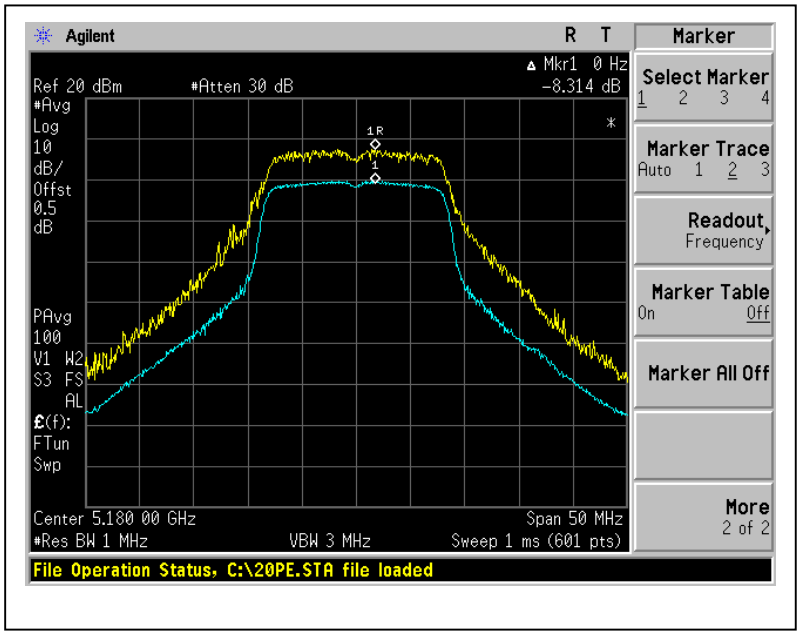
4.4.10 TEST RESULTS-ANTENNA 8

802.11a OFDM modulation

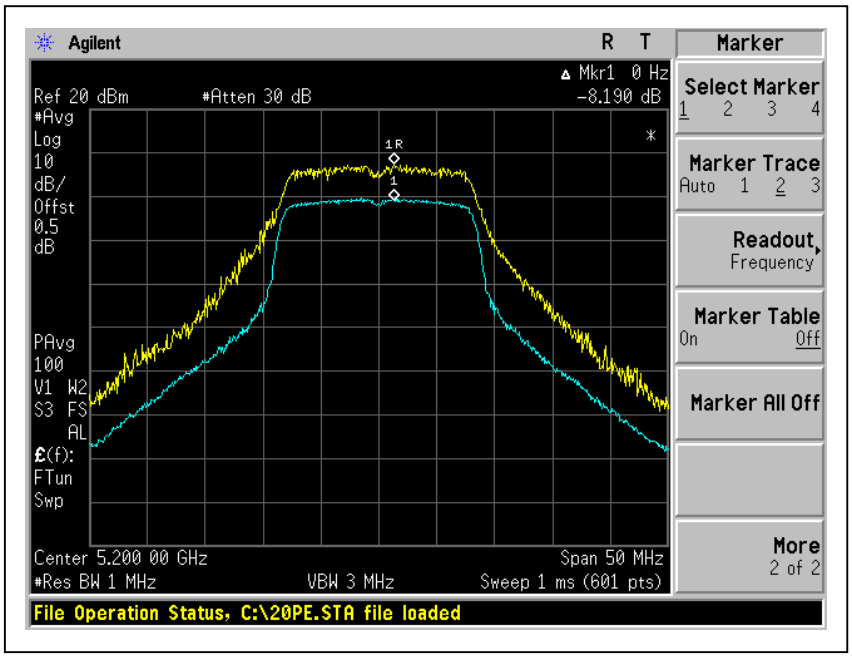
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.314	13	PASS
2	5200	8.190	13	PASS
4	5240	7.864	13	PASS

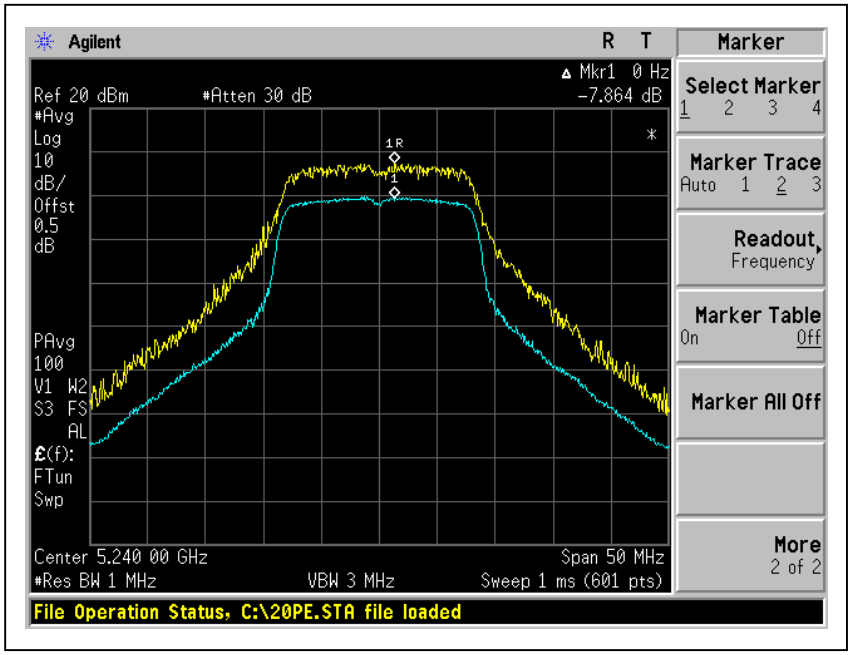
CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.314 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.180 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.190 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH4

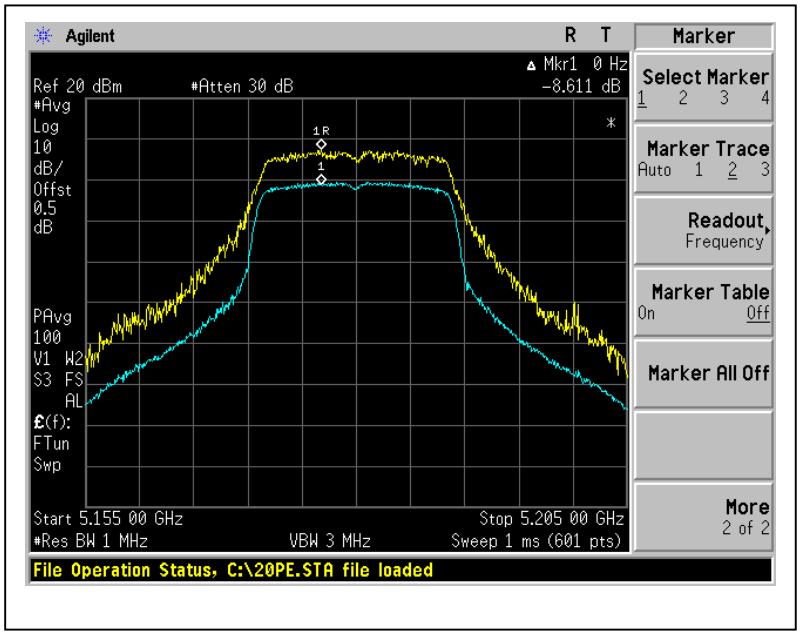

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-7.864 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

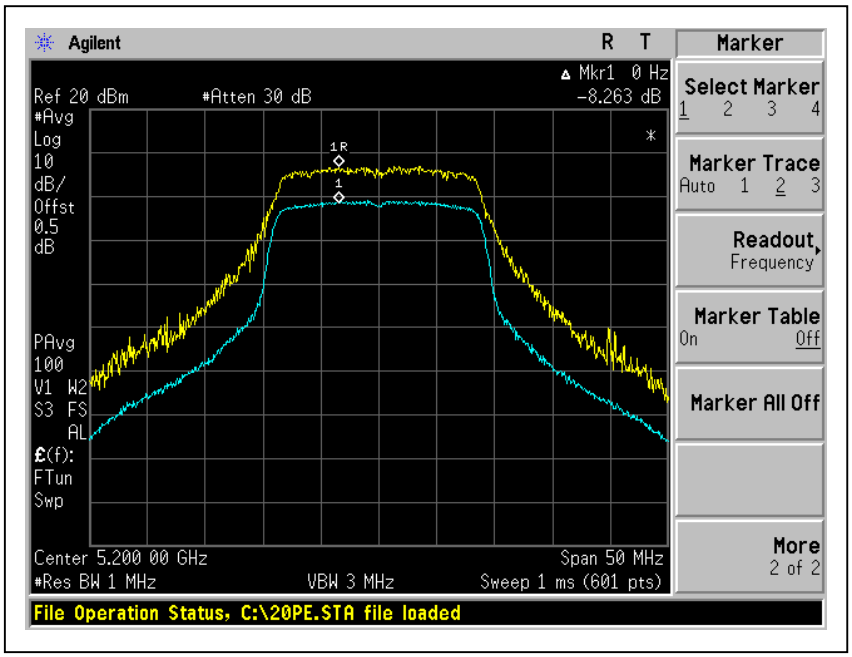
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 54%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.611	13	PASS
2	5200	8.263	13	PASS
4	5240	7.822	13	PASS

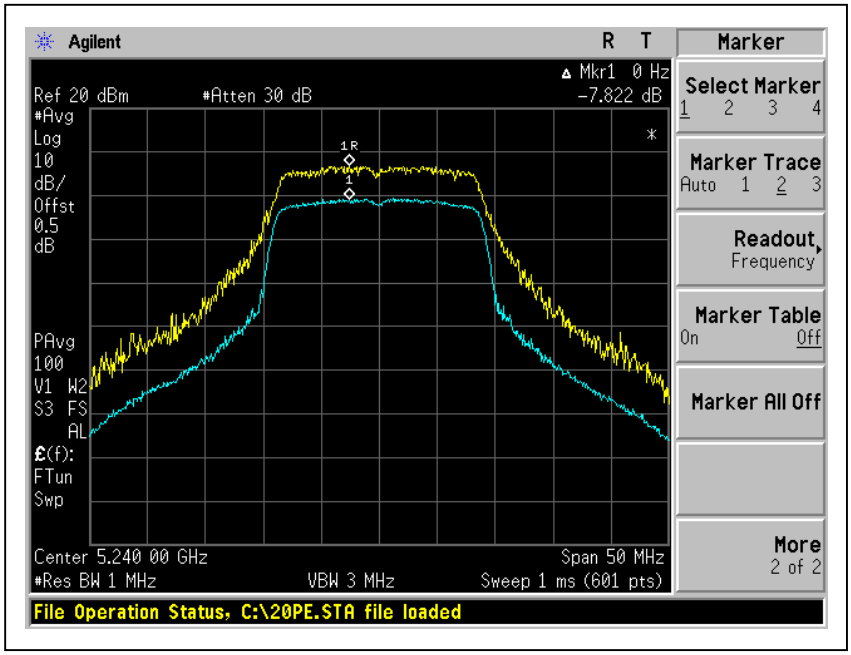
CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.611 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Start 5.155 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Stop 5.205 00 GHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.263 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
#Res BW 1 MHz
VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH4

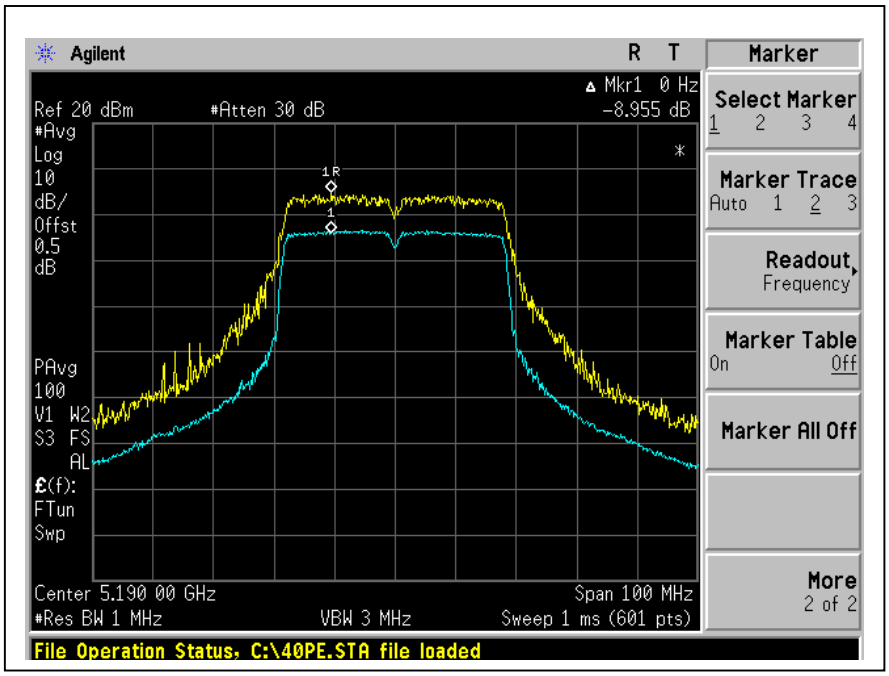

Agilent
R T
Marker
Mkr1 0 Hz
-7.822 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PE.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

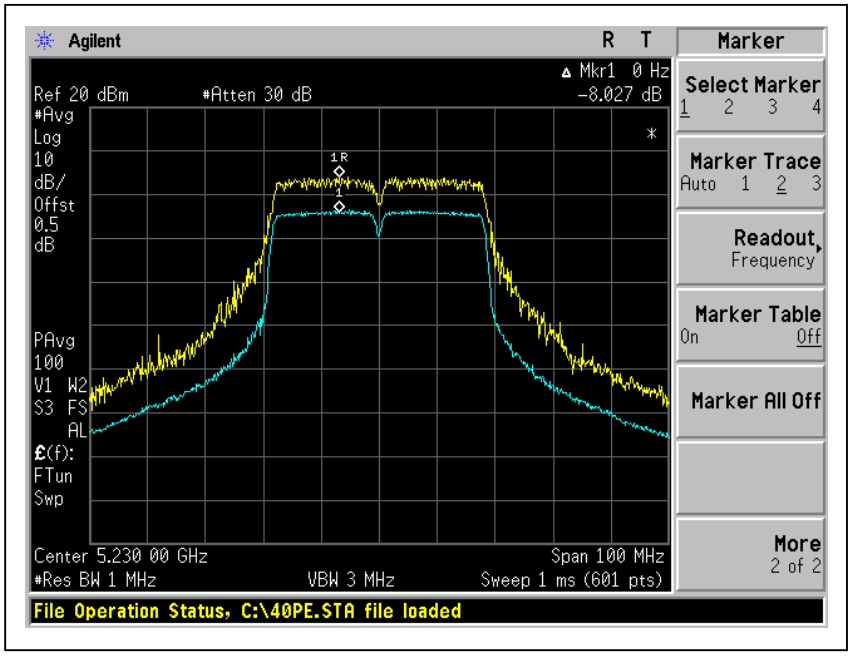
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5190	8.955	13	PASS
2	5230	8.027	13	PASS

CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.955 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.190 00 GHz
Span 100 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\40PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.027 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.230 00 GHz
Span 100 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\40PE.STA file loaded

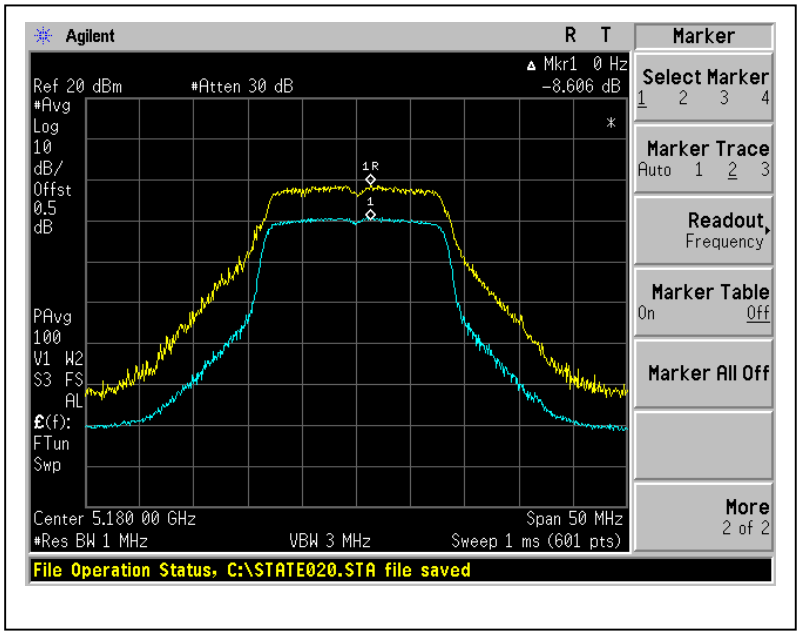
4.4.11 TEST RESULTS-ANTENNA 11

802.11a OFDM modulation

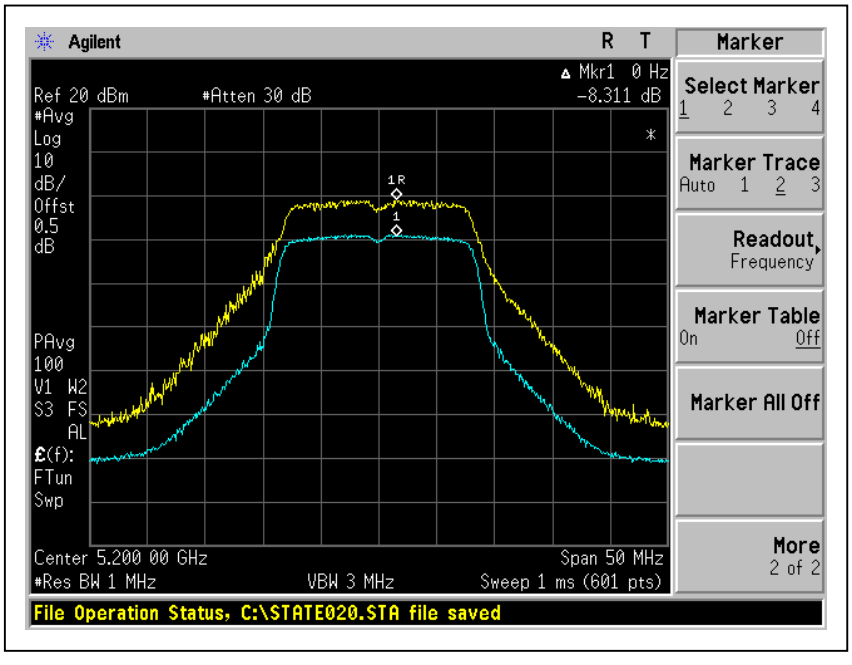
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	8.606	13	PASS
2	5200	8.311	13	PASS
4	5240	8.599	13	PASS

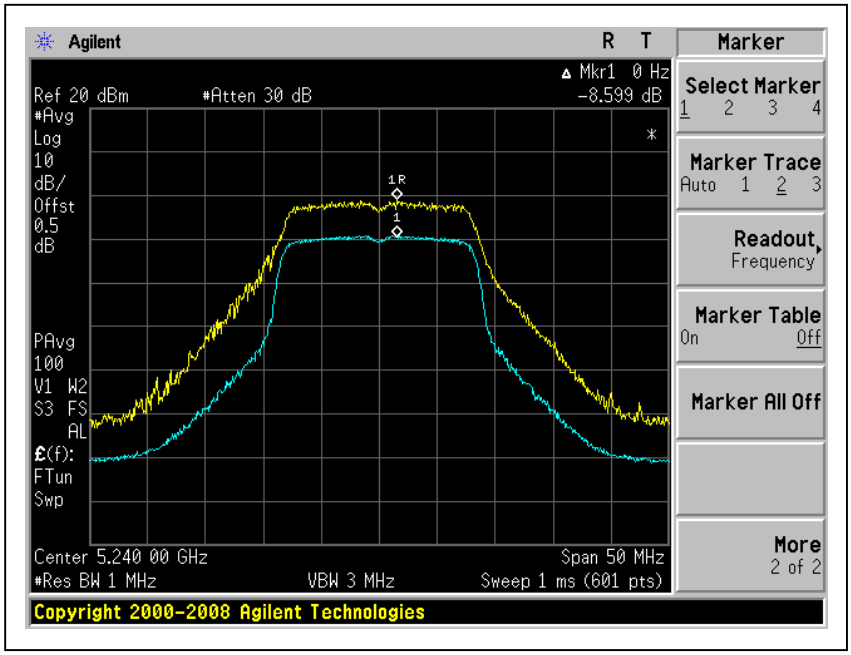
CH1


Agilent
R T
Marker
Mkr1 0 Hz
-8.606 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.180 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\STATE020.STA file saved

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.311 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.200 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\STATE020.STA file saved

CH4

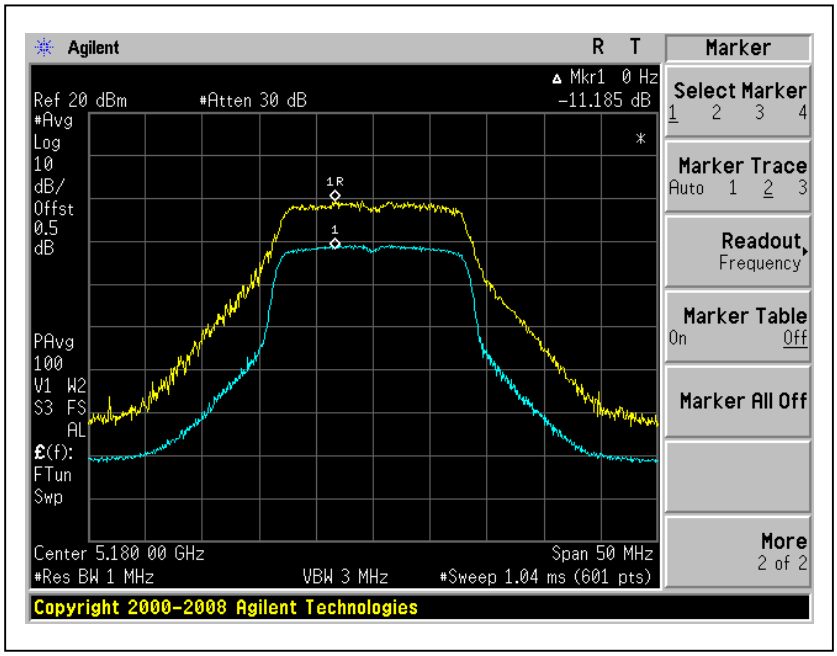

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-8.599 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
1
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Copyright 2000-2008 Agilent Technologies

DRAFT 802.11n (20MHz) OFDM MODULATION:

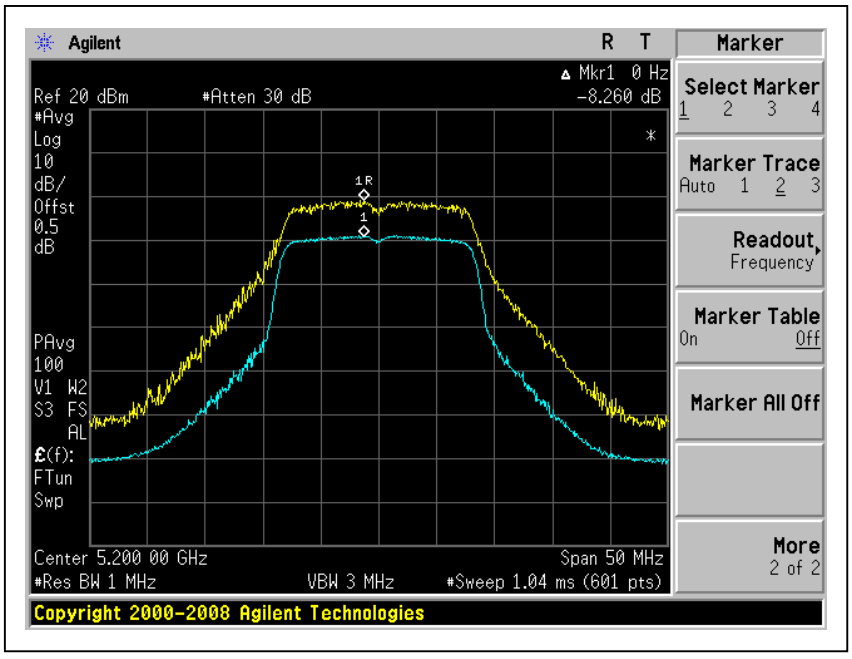
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 54%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	11.185	13	PASS
2	5200	8.26	13	PASS
4	5240	8.251	13	PASS

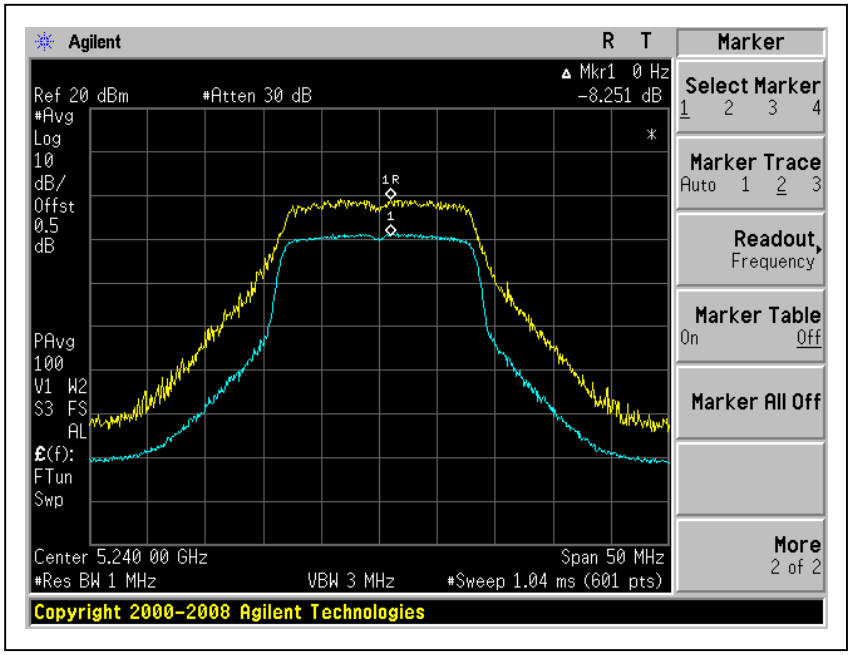
CH1


Agilent
R T
Marker
Δ Mkr1 0 Hz
-11.185 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.180 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
#Sweep 1.04 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Copyright 2000-2008 Agilent Technologies

CH2


Agilent
R T
Marker
Δ Mkr1 0 Hz
-8.260 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
#Sweep 1.04 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Copyright 2000-2008 Agilent Technologies

CH4

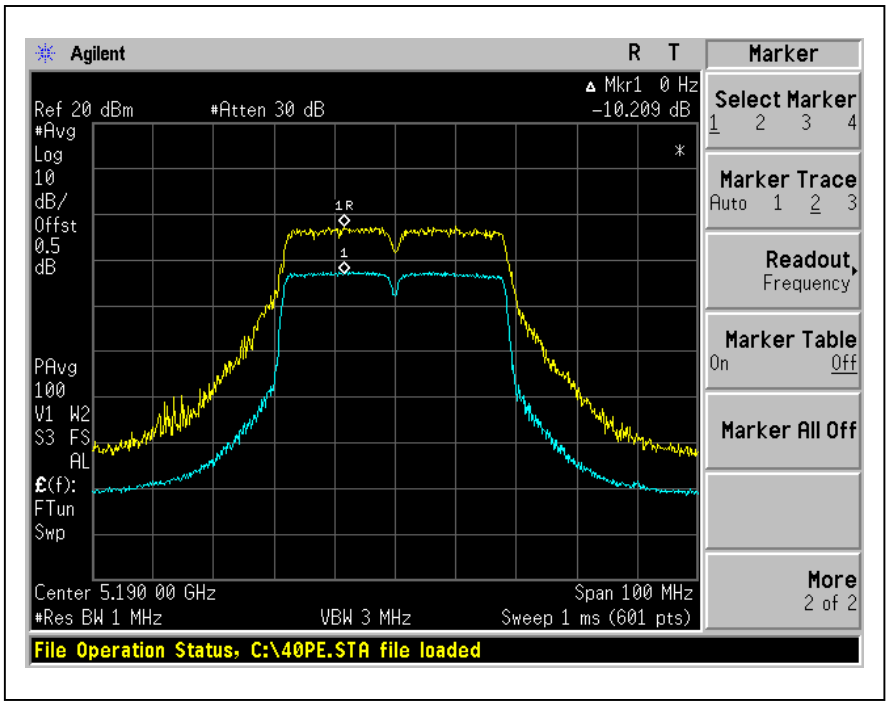

Agilent
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-8.251 dB
#Avg
Log
10
dB/
Offst
0.5
dB
1R
1
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
VBW 3 MHz
#Sweep 1.04 ms (601 pts)
Copyright 2000-2008 Agilent Technologies

DRAFT 802.11n (40MHz) OFDM MODULATION:

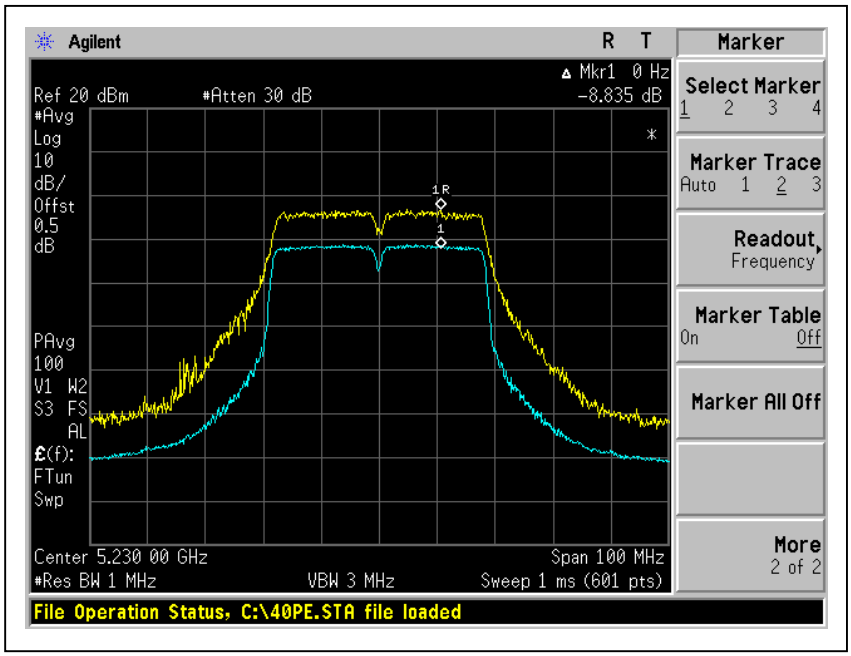
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5190	10.209	13	PASS
2	5230	8.835	13	PASS

CH1


Agilent
R T
Marker
Mkr1 0 Hz
-10.209 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.190 00 GHz
Span 100 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\40PE.STA file loaded

CH2


Agilent
R T
Marker
Mkr1 0 Hz
-8.835 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
0.5
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.230 00 GHz
Span 100 MHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\40PE.STA file loaded

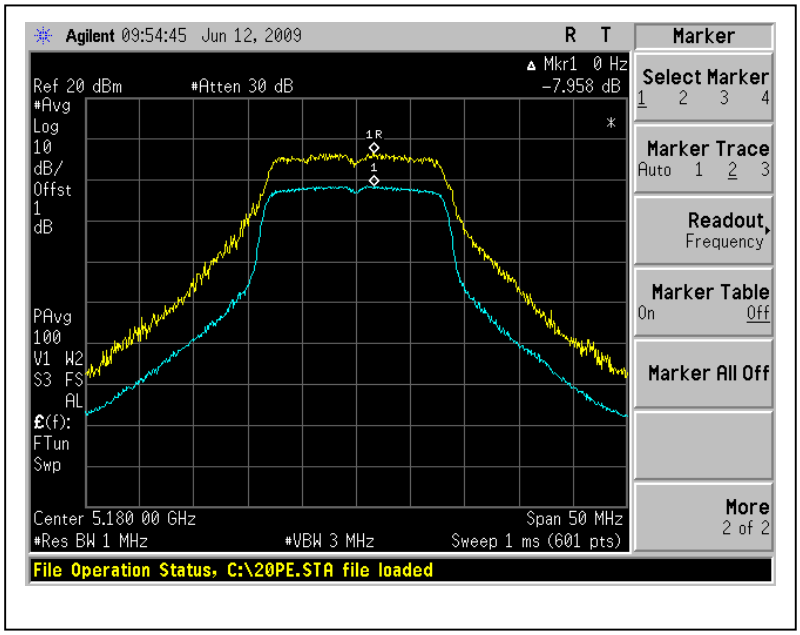
4.4.12 TEST RESULTS-ANTENNA 12

802.11a OFDM modulation

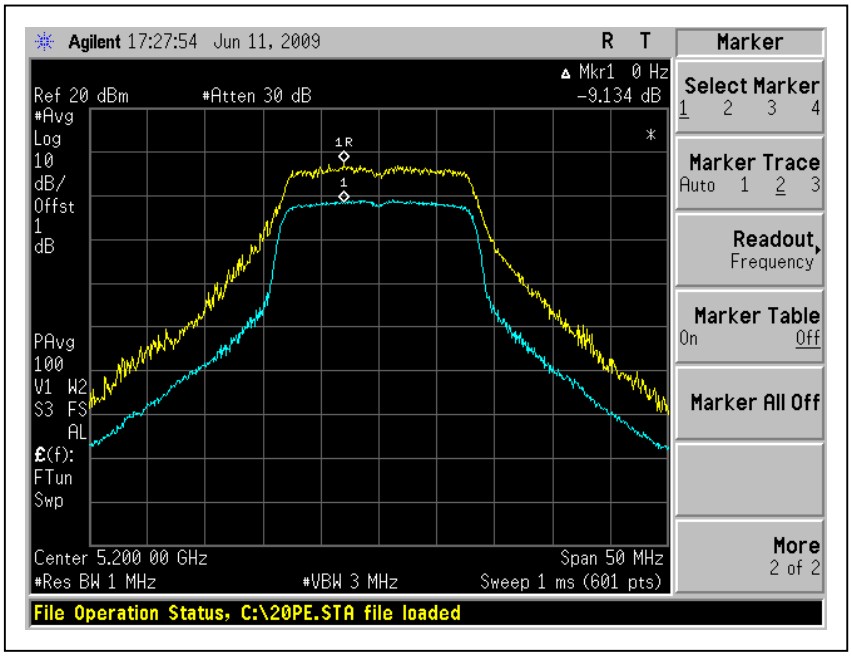
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	7.958	13	PASS
2	5200	9.134	13	PASS
4	5240	9.041	13	PASS

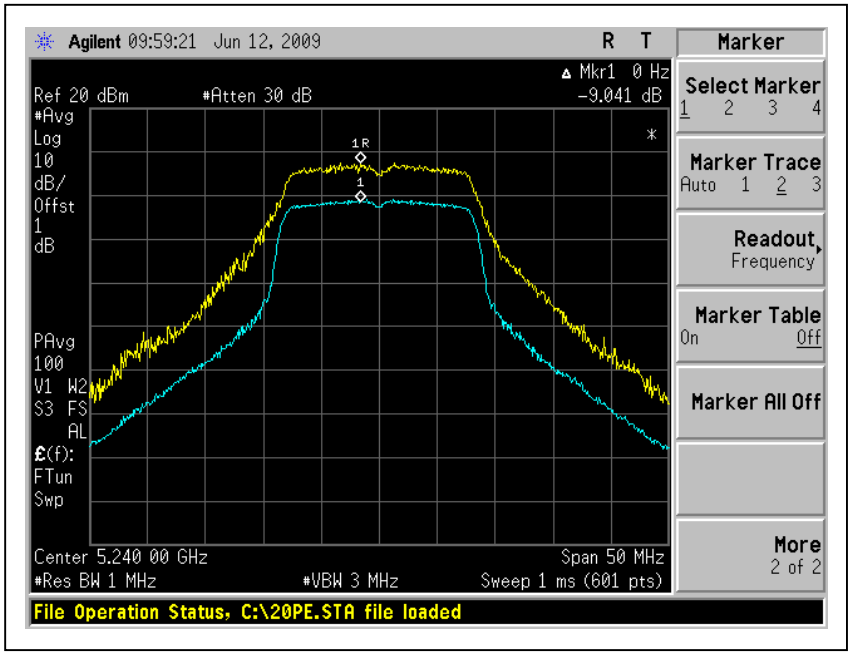
CH1


Agilent 09:54:45 Jun 12, 2009
R T
Marker
Δ Mkr1 0 Hz
-7.958 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.180 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH2


Agilent 17:27:54 Jun 11, 2009
R T
Marker
Δ Mkr1 0 Hz
-9.134 dB
Ref 20 dBm
#Atten 30 dB
#Avg
Log
10
dB/
Offst
1
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.200 00 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 50 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

CH4


Agilent 09:59:21 Jun 12, 2009
R T
Marker
Ref 20 dBm
#Atten 30 dB
Mkr1 0 Hz
-9.041 dB
#Avg
Log
10
dB/
Offst
1
dB
PAvg
100
V1 W2
S3 FS
AL
£(f):
FTun
Swp
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
Select Marker
1 2 3 4
Marker Trace
Auto 1 2 3
Readout
Frequency
Marker Table
On Off
Marker All Off
More
2 of 2
File Operation Status, C:\20PE.STA file loaded

4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25GHz	4dBm
5.25 ~ 5.35GHz	11dBm
5.47 – 5.725GHz	11dBm
5.725 ~ 5.825GHz	17dBm

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

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

4.5.3 TEST PROCEDURES

1. The transmitter output was connected to the spectrum analyzer.
2. Set RBW=1MHz, VBW=3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP

4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6

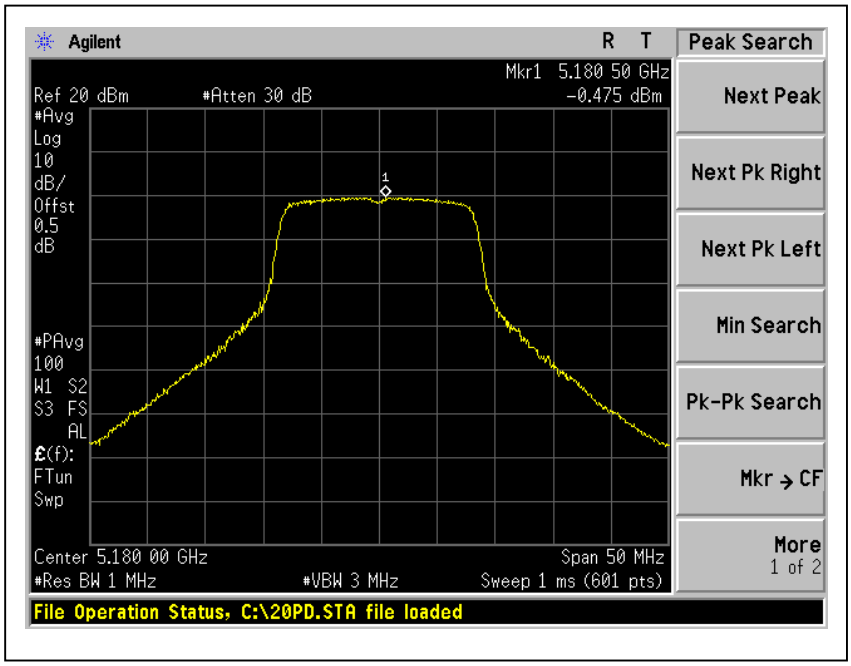
4.5.7 TEST RESULTS-ANTENNA 4

802.11a OFDM modulation

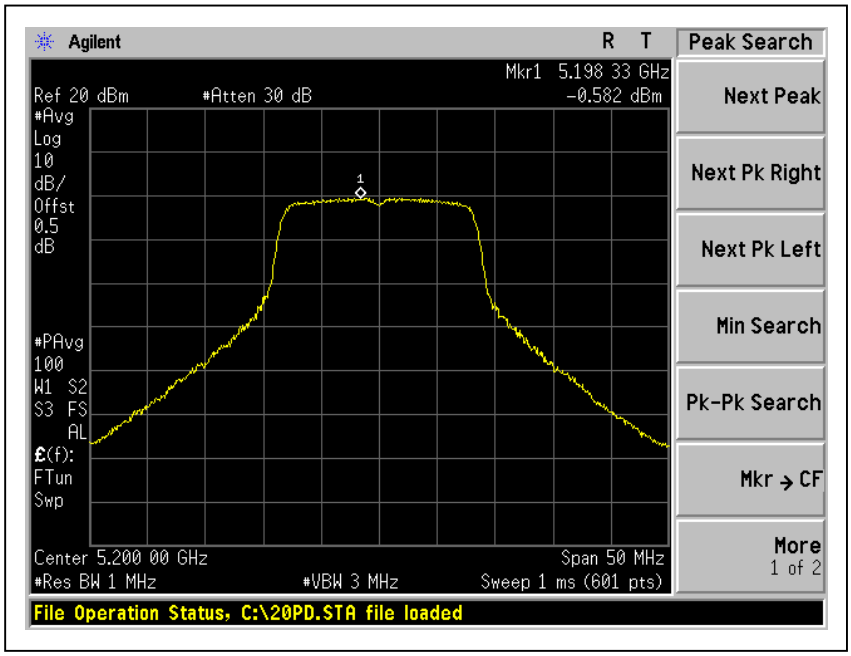
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-0.475	-1.532	-0.902	3.822	4	PASS
2	5200	-0.582	-1.764	-1.347	3.568	4	PASS
4	5240	-0.565	-1.915	-0.903	3.679	4	PASS

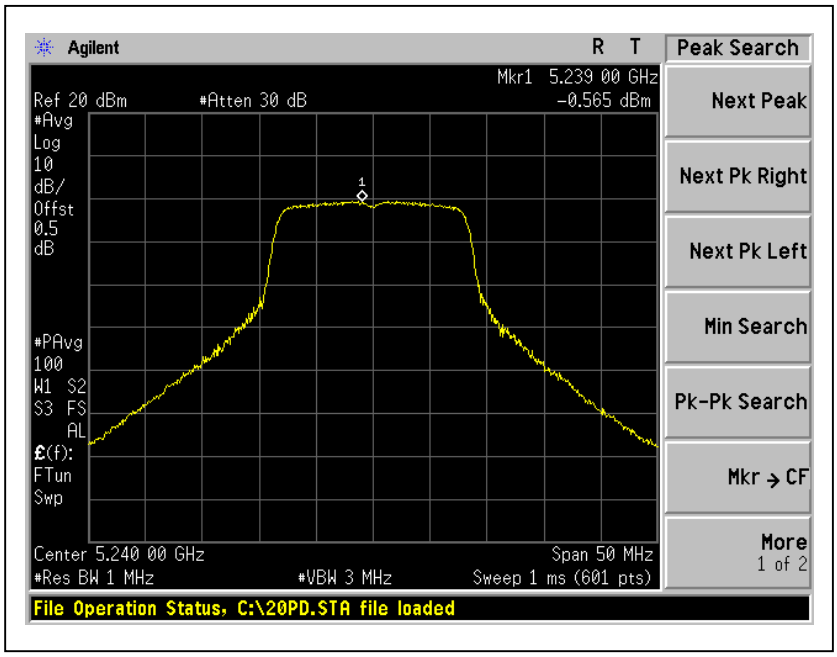
For Chain (0) : CH1



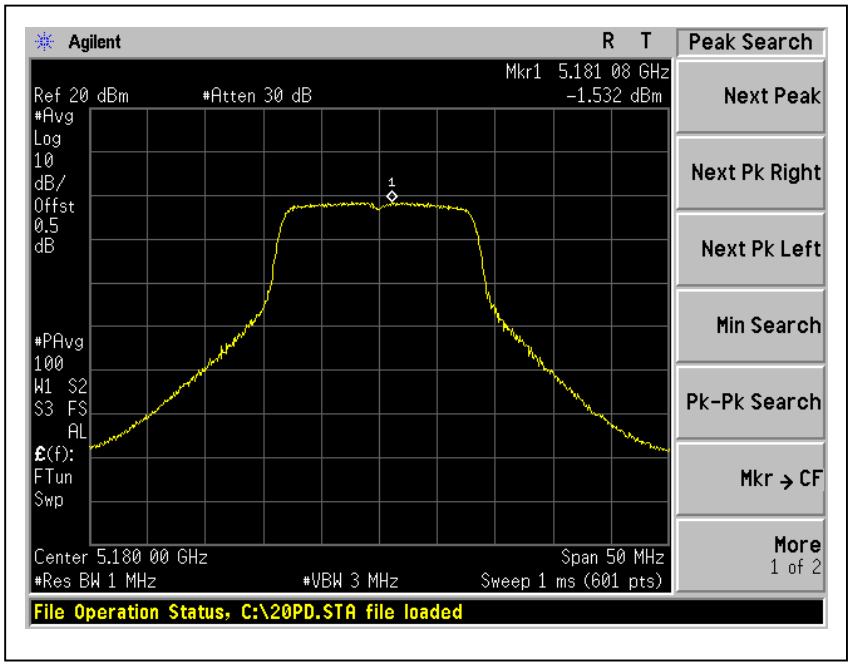
CH2



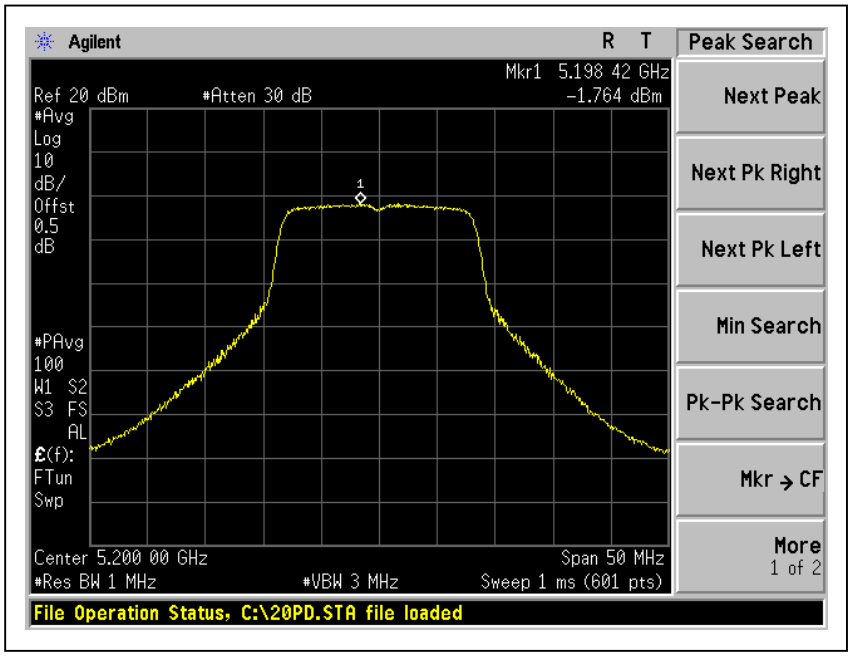
CH4


Agilent
R T
Peak Search
Mkr1 5.239 00 GHz
Ref 20 dBm
#Atten 30 dB
-0.565 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

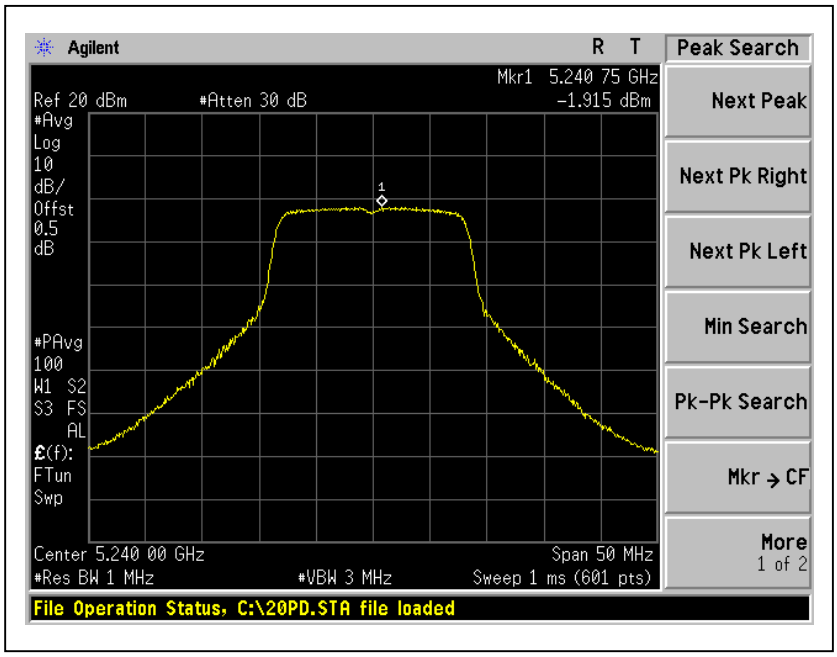
For Chain (1) : CH1



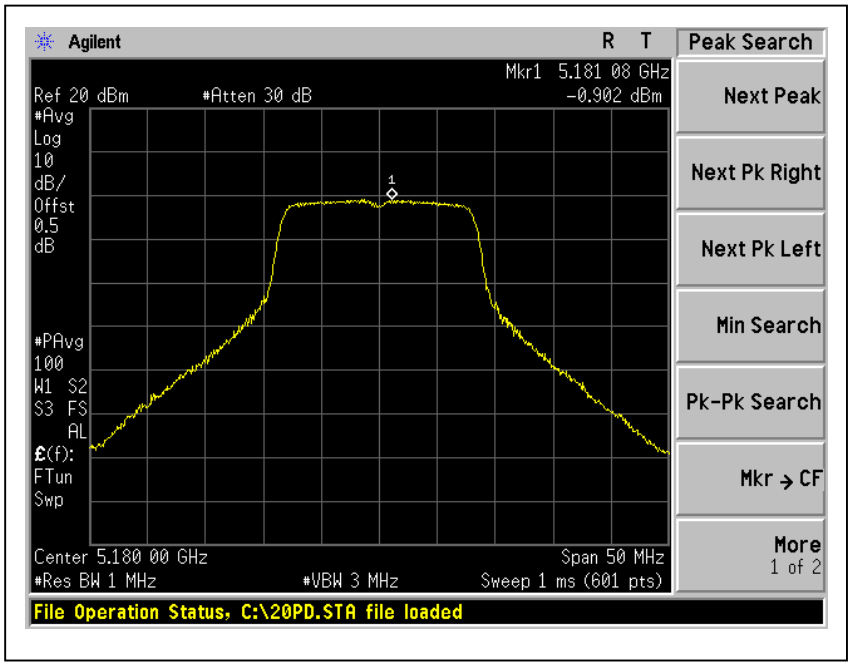
CH2



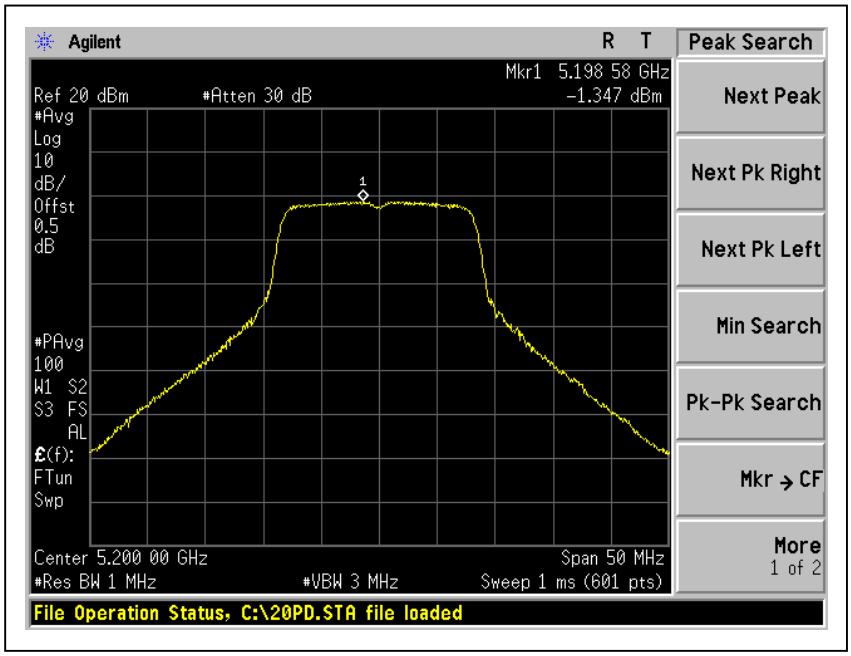
CH4


Agilent
R T
Peak Search
Mkr1 5.240 75 GHz
Ref 20 dBm
#Atten 30 dB
-1.915 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

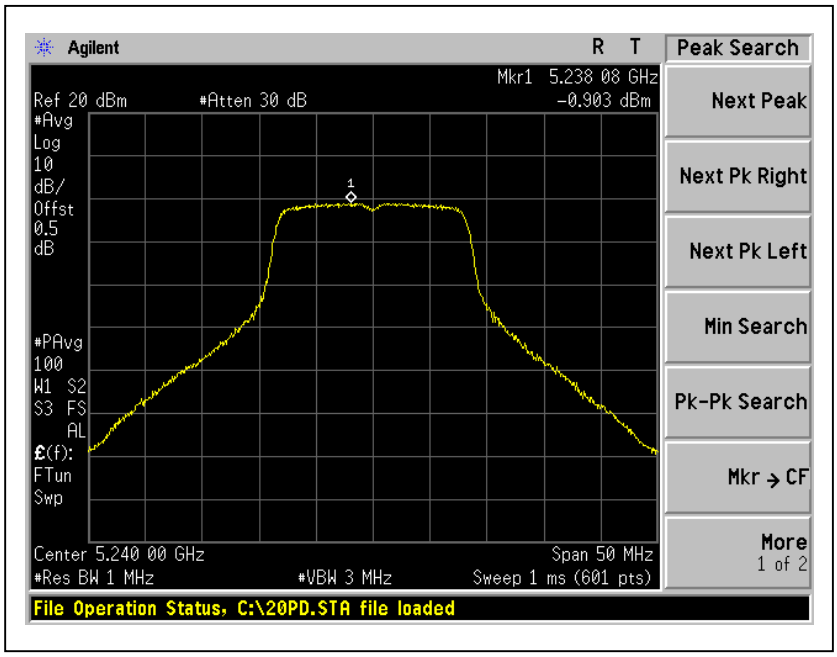
For Chain (2) : CH1



CH2



CH4

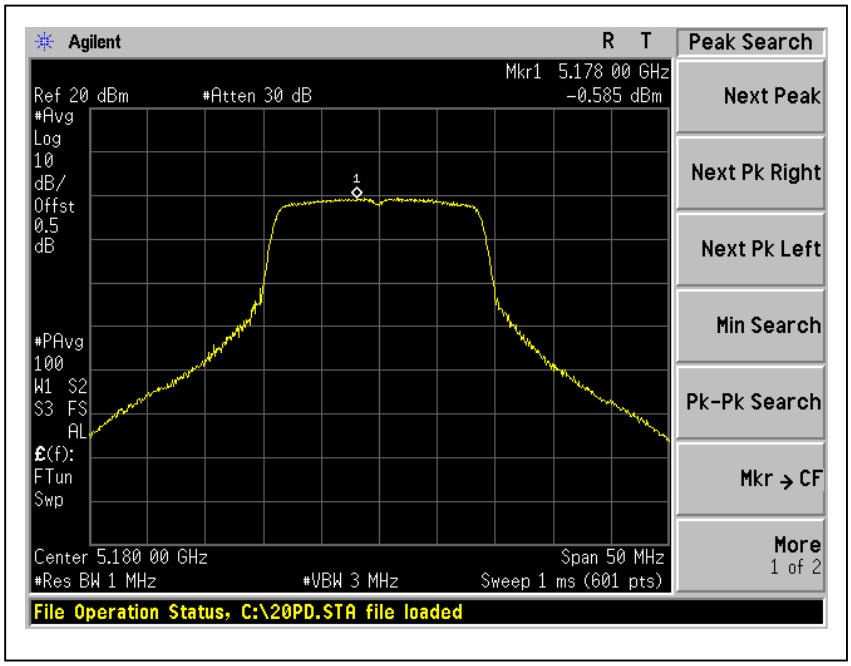

Agilent
R T
Peak Search
Mkr1 5.238 08 GHz
Ref 20 dBm
#Atten 30 dB
-0.903 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

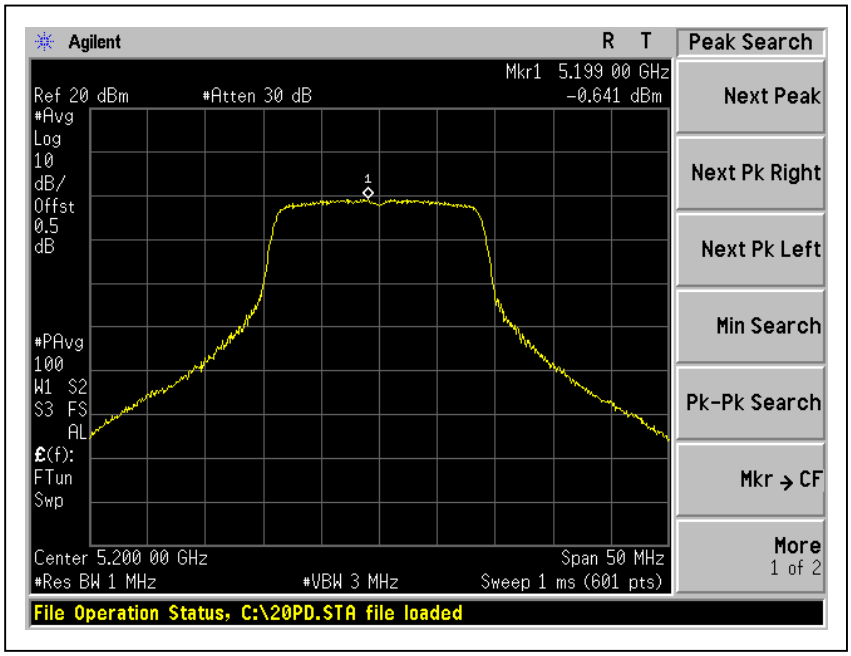
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	23deg.C, 54%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-0.585	-1.645	-1.227	3.642	4	PASS
2	5200	-0.641	-1.918	-1.207	3.547	4	PASS
4	5240	-0.782	-1.887	-1.174	3.514	4	PASS

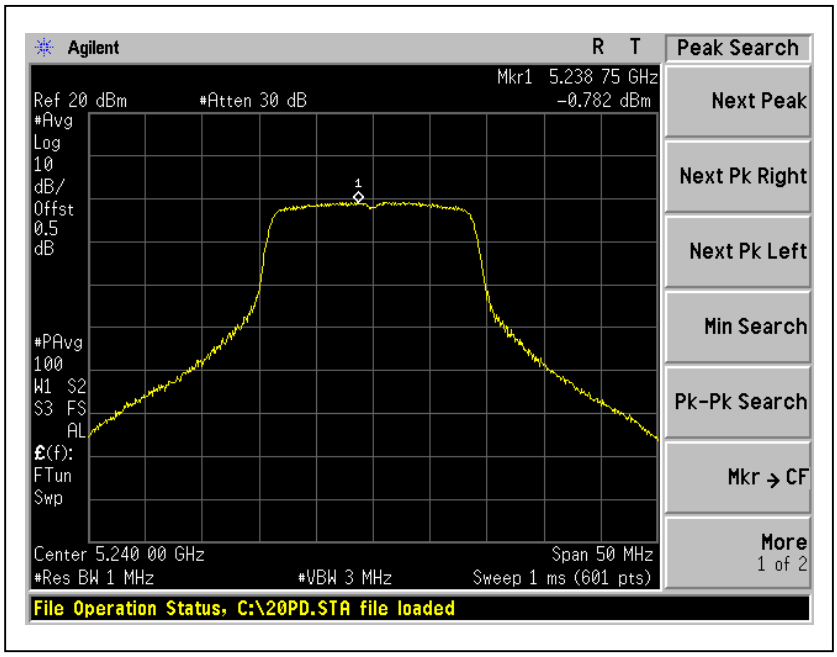
For Chain (0) : CH1



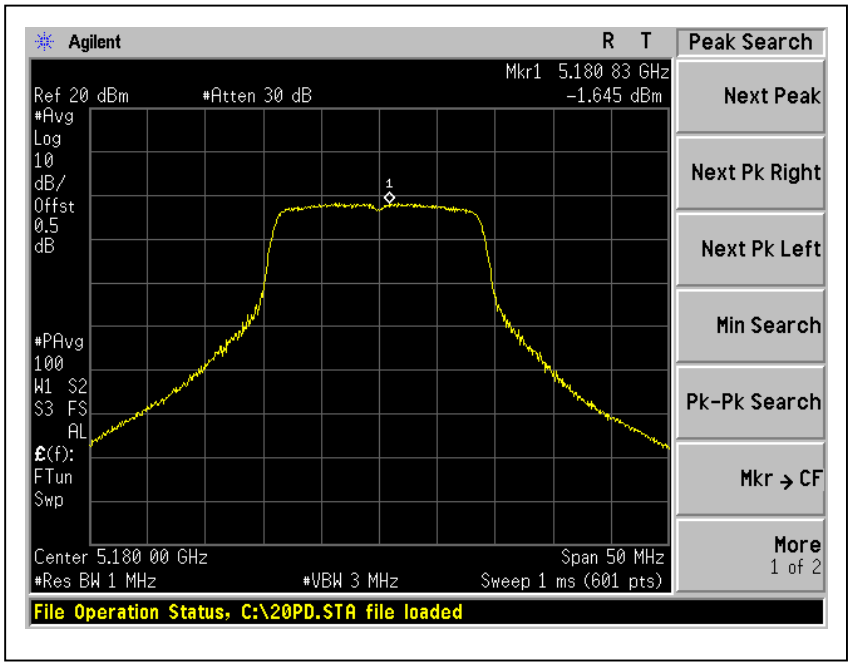
CH2



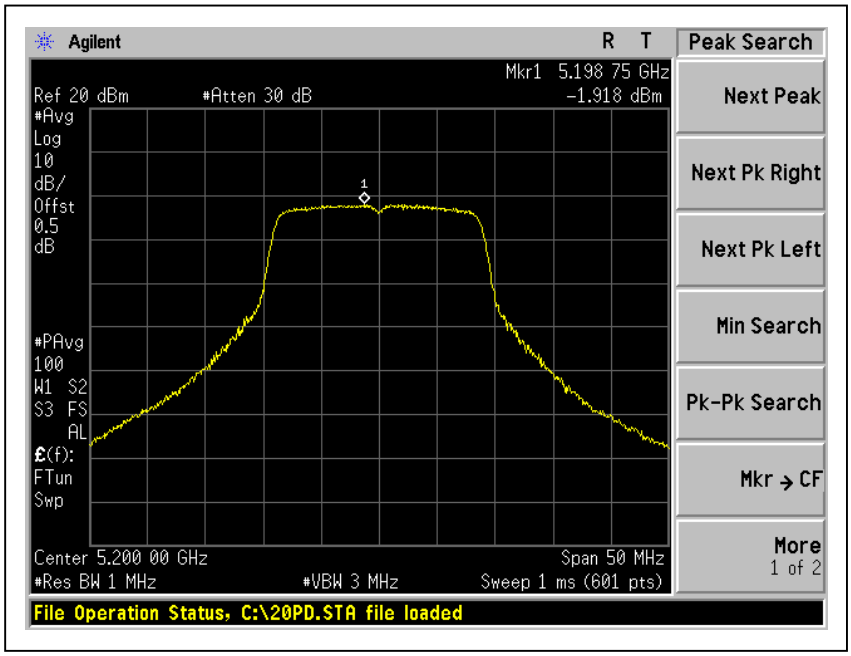
CH4


Agilent
R T
Peak Search
Mkr1 5.238 75 GHz
Ref 20 dBm
#Atten 30 dB
-0.782 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

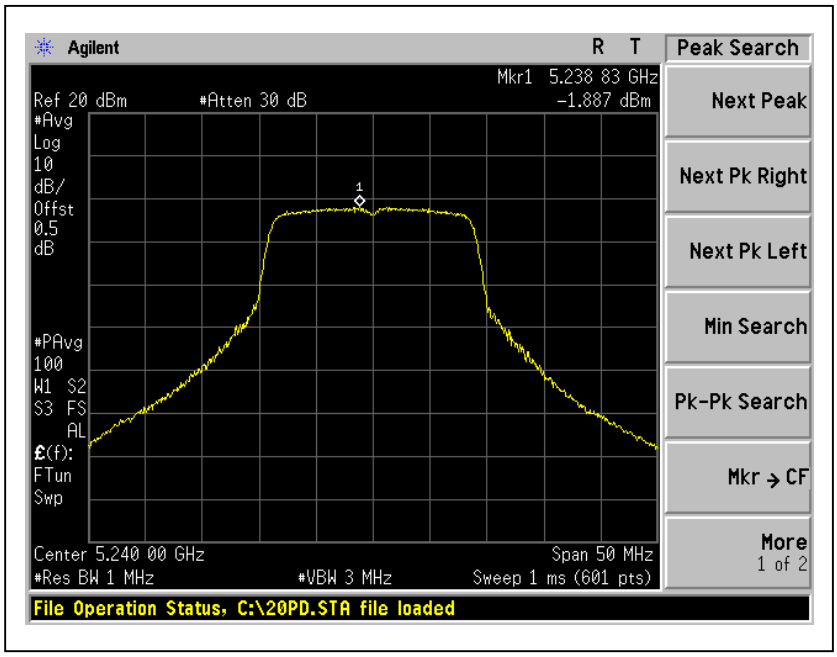
For Chain (1) : CH1



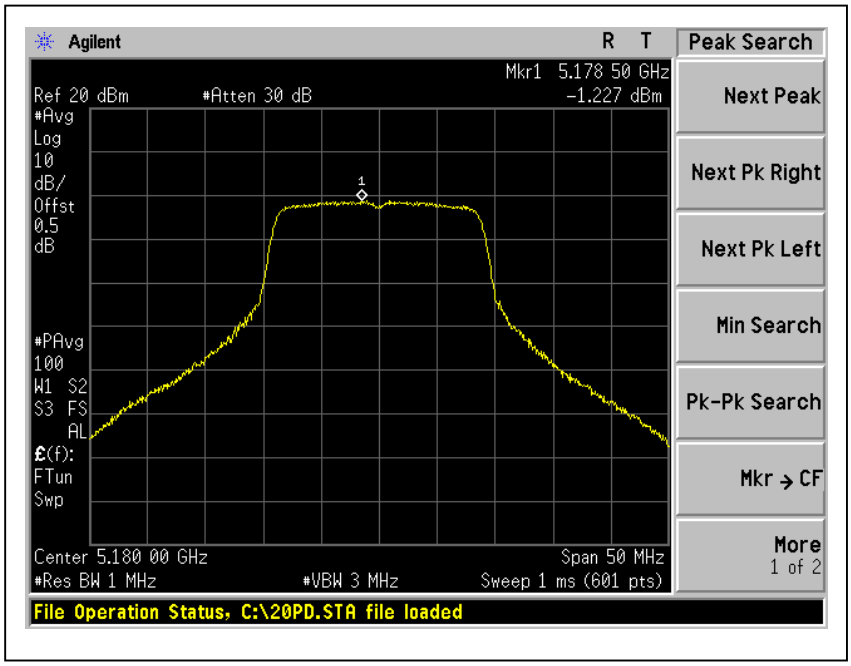
CH2



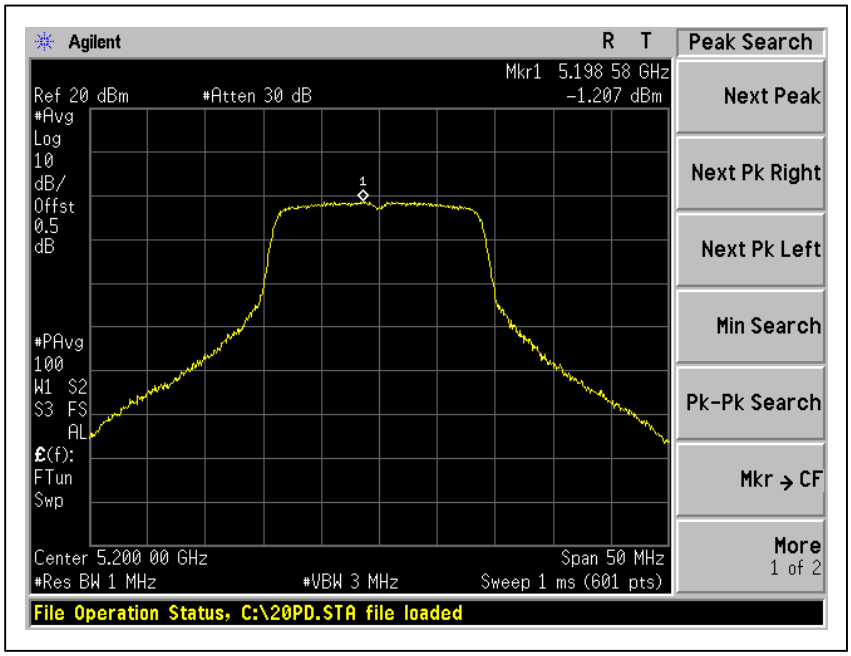
CH4


Agilent
R T
Peak Search
Mkr1 5.238 83 GHz
Ref 20 dBm
#Atten 30 dB
-1.887 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

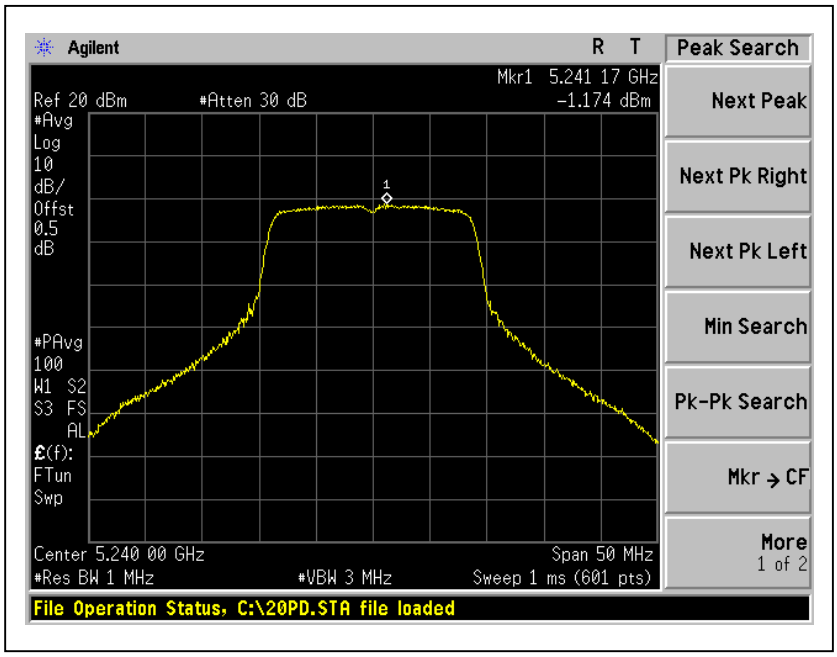
For Chain (2) : CH1



CH2



CH4

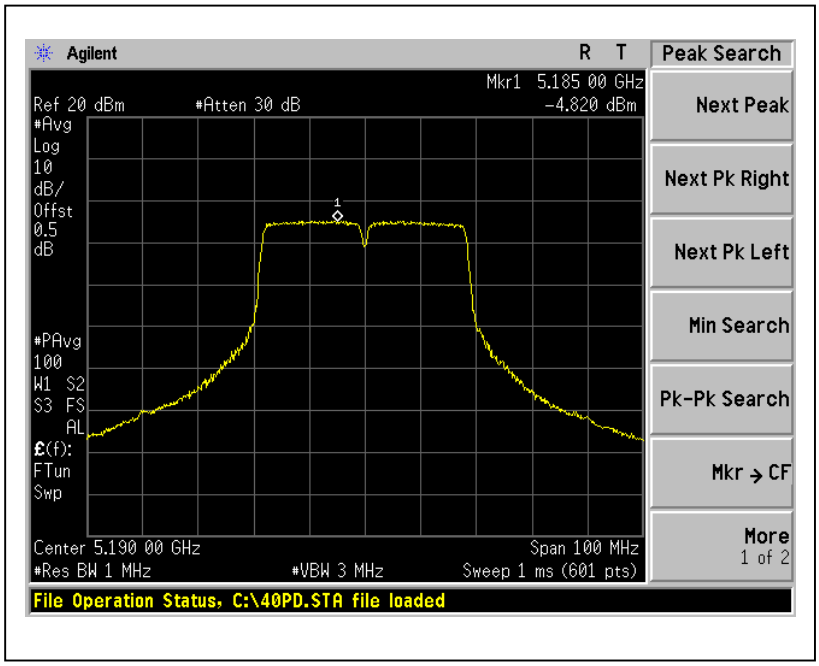

Agilent
R T
Peak Search
Mkr1 5.241 17 GHz
Ref 20 dBm
#Atten 30 dB
-1.174 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

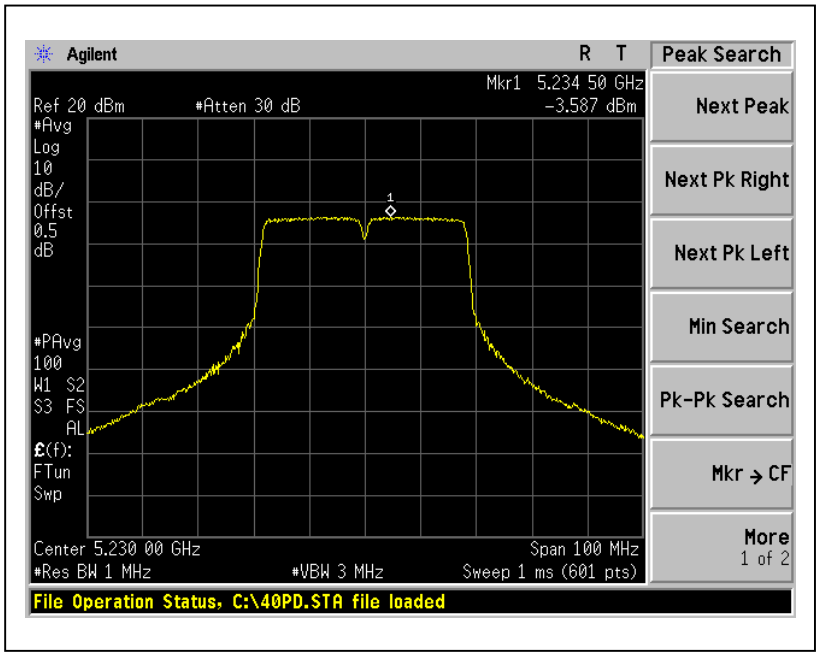
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5190	-4.820	-5.852	-5.201	-0.496	4	PASS
2	5230	-3.587	-4.179	-4.156	0.806	4	PASS

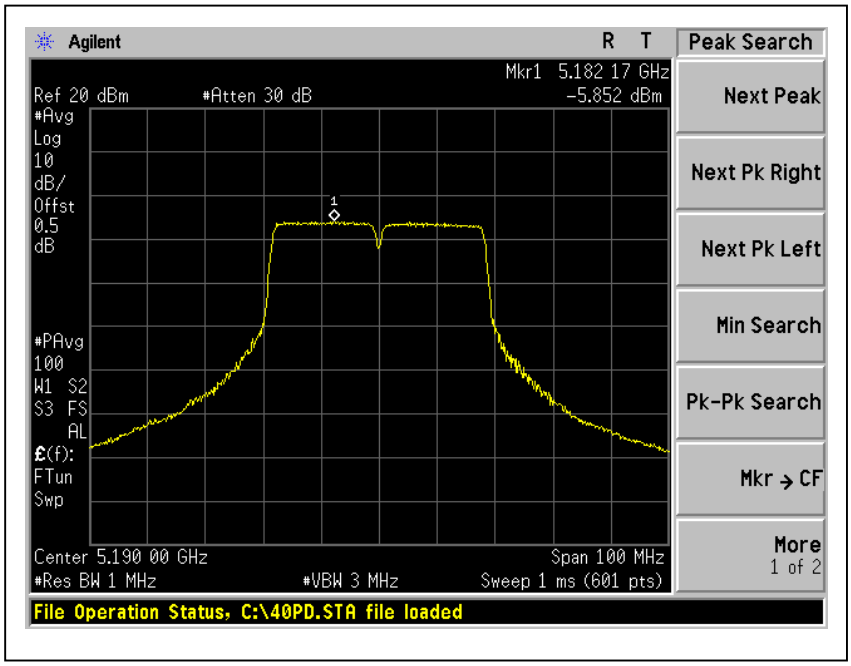
For Chain (0) : CH1



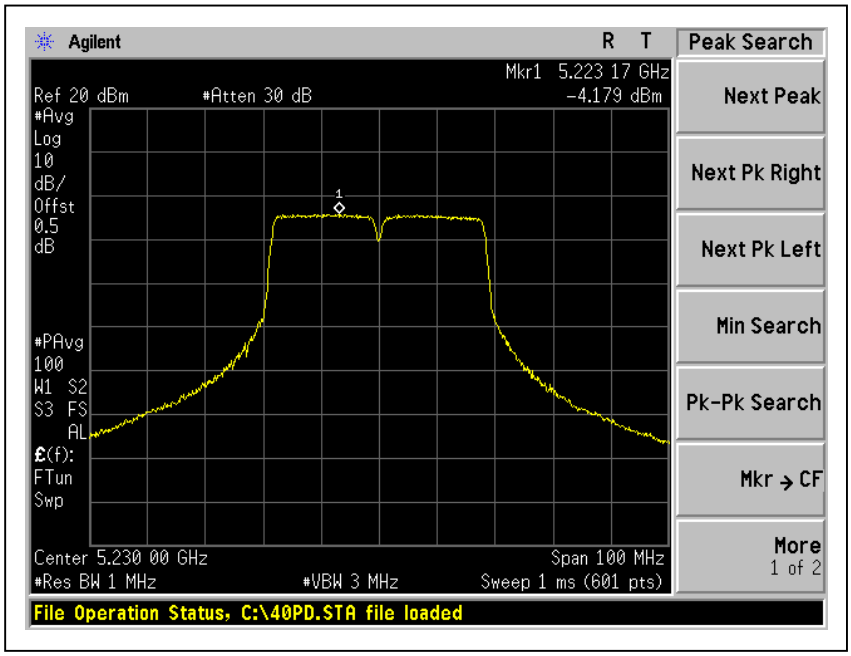
CH2



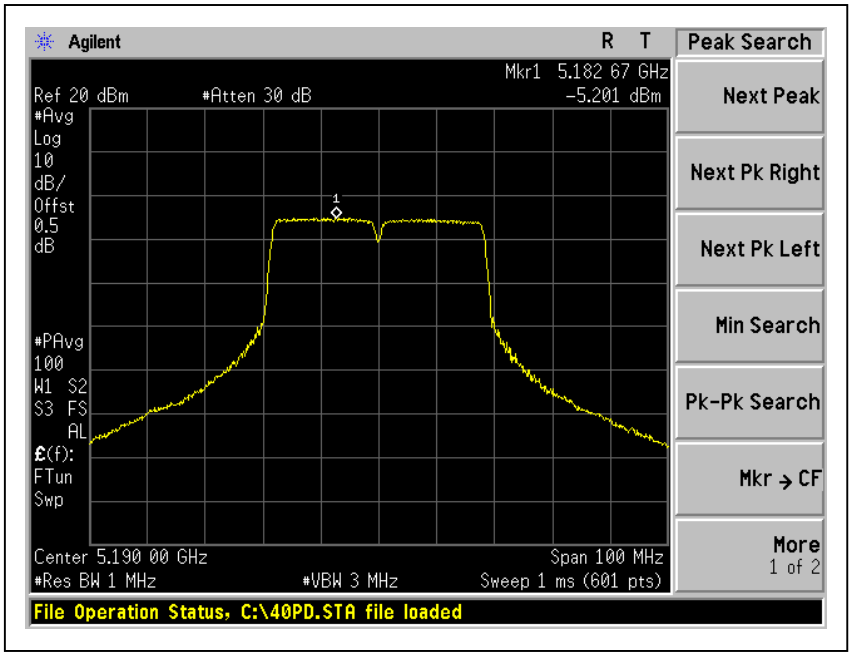
For Chain (1) : CH1



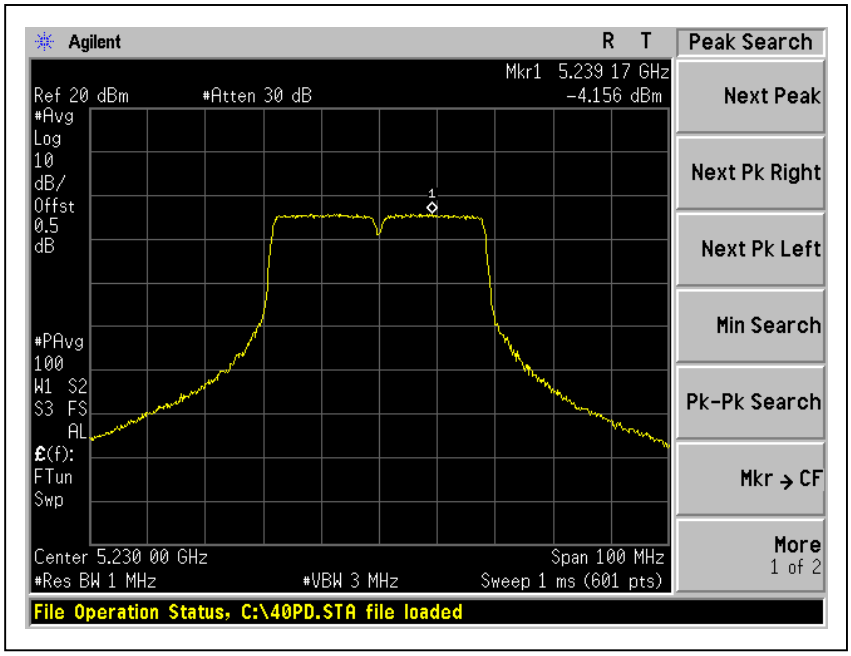
CH2



For Chain (2) : CH1



CH2



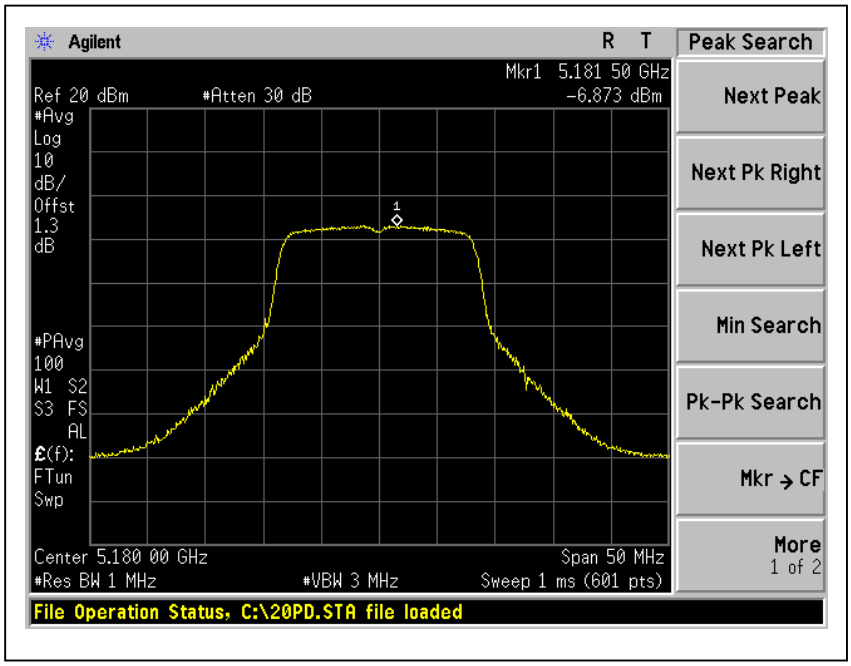
4.5.8 TEST RESULTS-ANTENNA 5

802.11a OFDM modulation

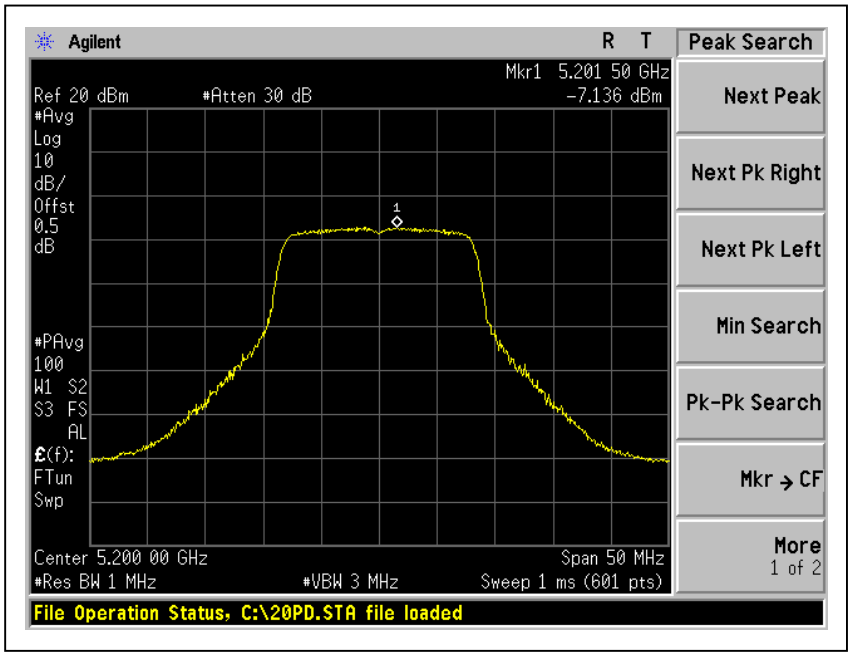
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-6.873	-9.443	-8.265	-3.298	-3	PASS
2	5200	-7.136	-8.681	-8.323	-3.233	-3	PASS
4	5240	-7.167	-8.725	-7.929	-3.125	-3	PASS

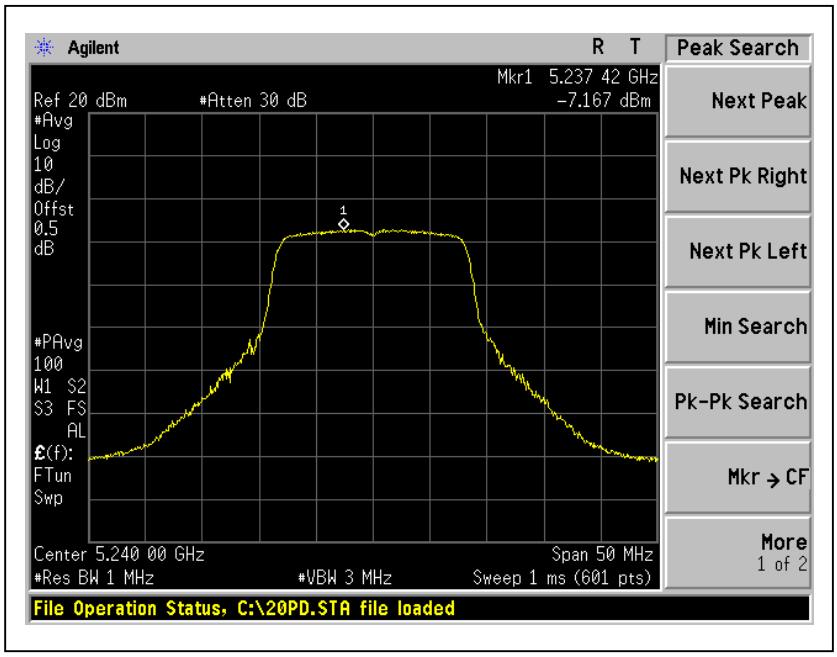
For Chain (0) : CH1



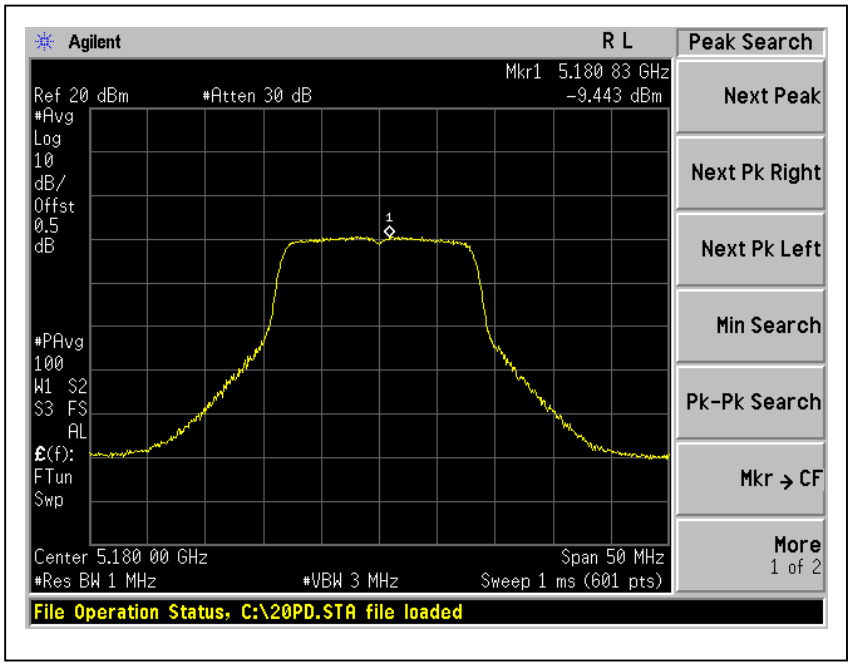
CH2



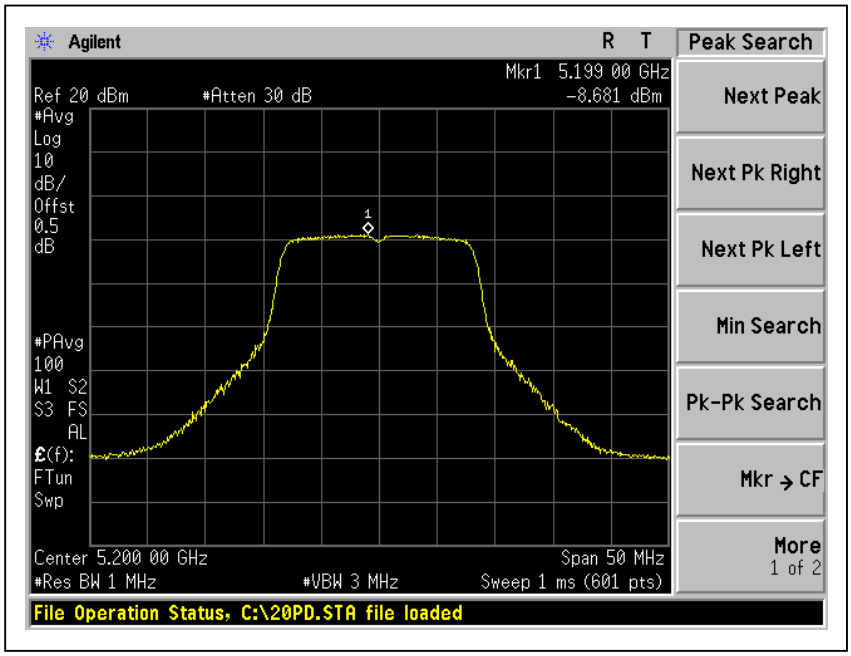
CH4


Agilent
R T
Peak Search
Mkr1 5.237 42 GHz
Ref 20 dBm
#Atten 30 dB
-7.167 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

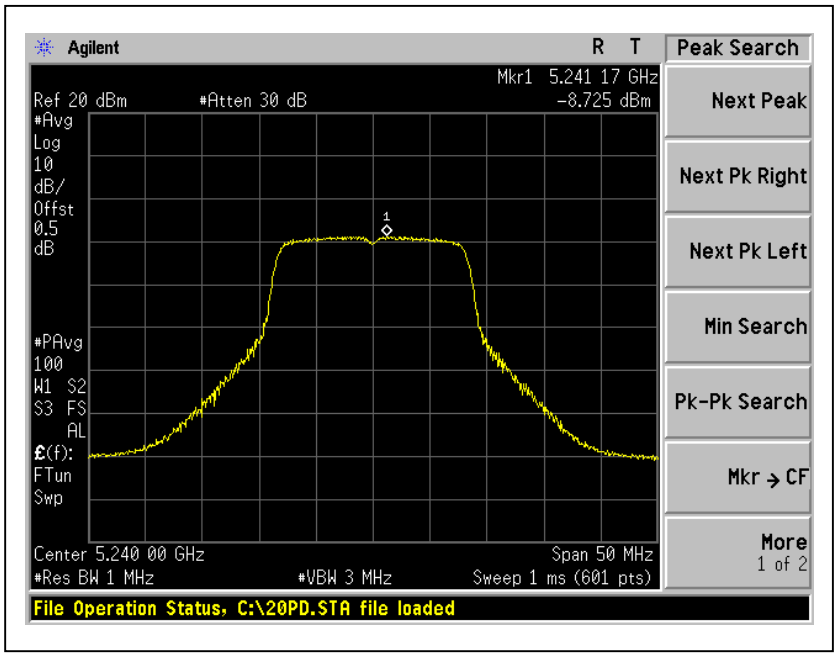
For Chain (1) : CH1



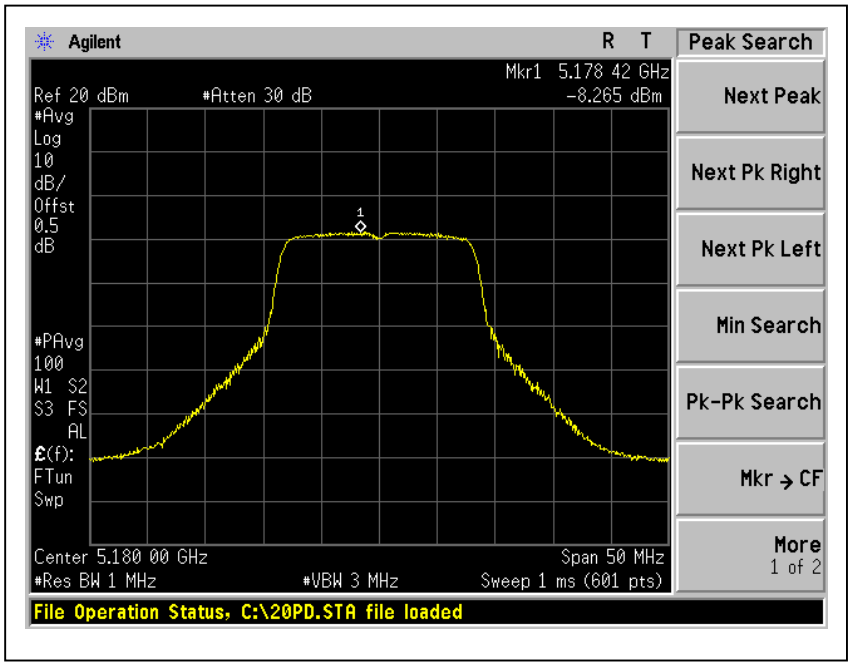
CH2



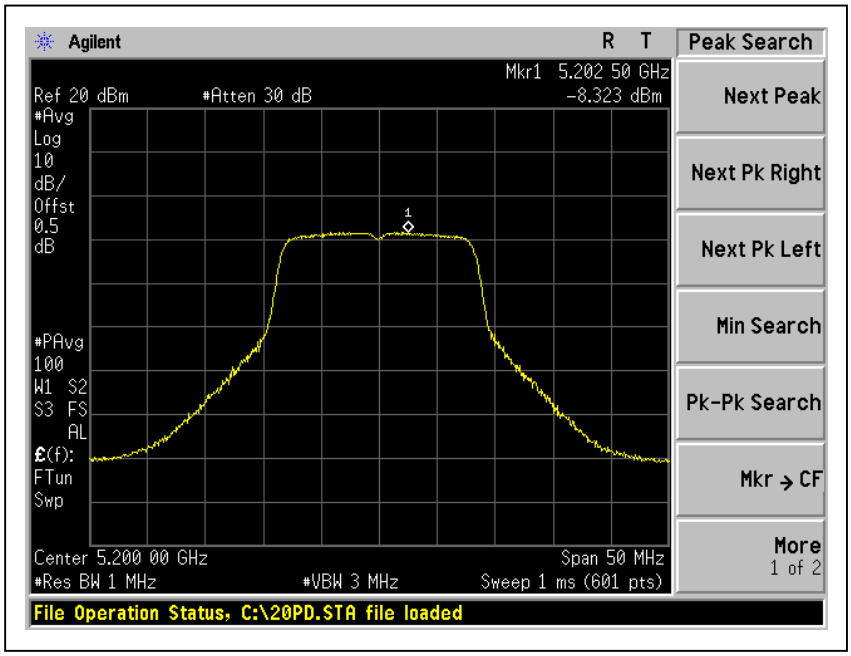
CH4


Agilent
R T
Peak Search
Mkr1 5.241 17 GHz
Ref 20 dBm
#Atten 30 dB
-8.725 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.240 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

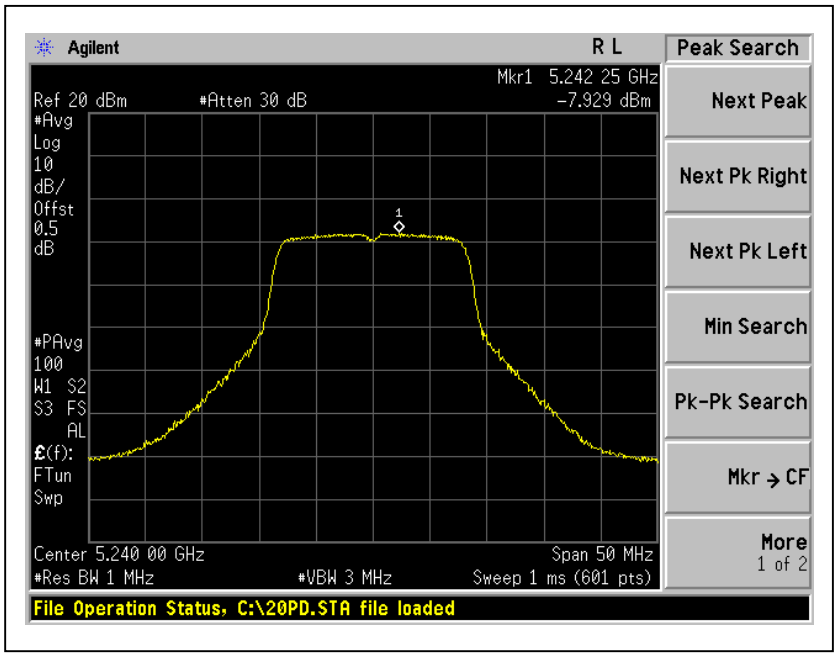
For Chain (2) : CH1



CH2



CH4

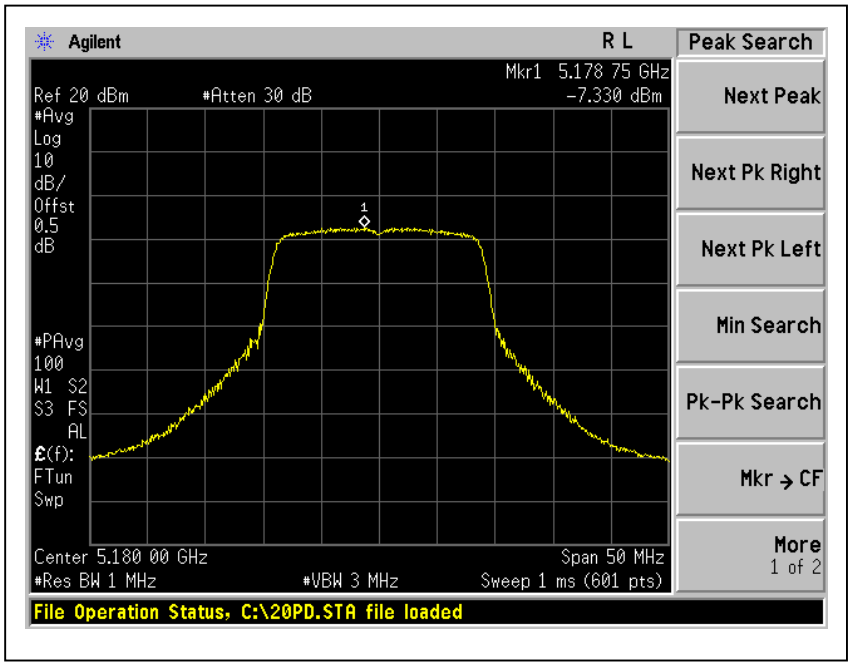

Agilent
R L
Peak Search
Mkr1 5.242 25 GHz
Ref 20 dBm
#Atten 30 dB
-7.929 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

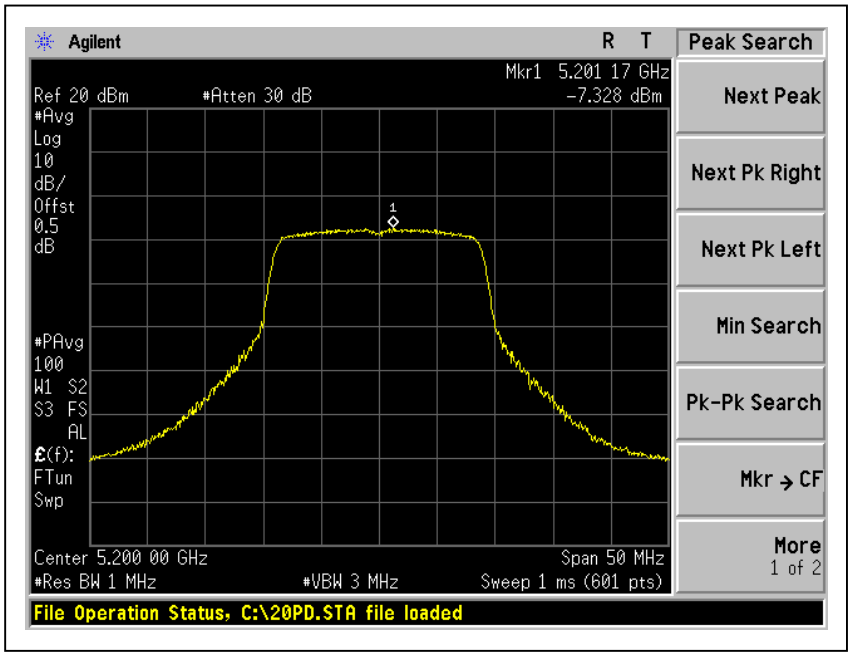
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-7.330	-9.209	-7.750	-3.251	-3	PASS
2	5200	-7.328	-8.527	-7.987	-3.152	-3	PASS
4	5240	-7.492	-8.601	-8.028	-3.251	-3	PASS

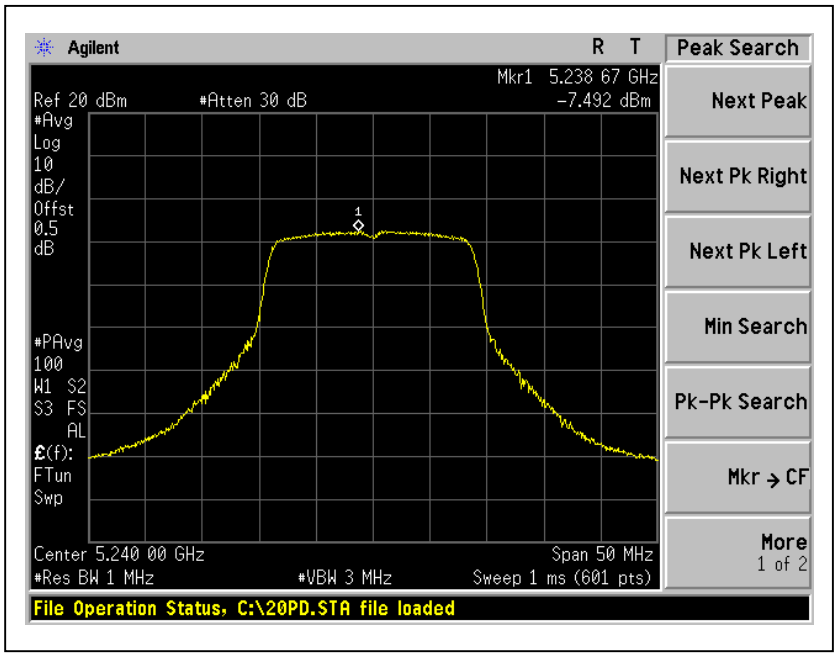
For Chain (0) : CH1



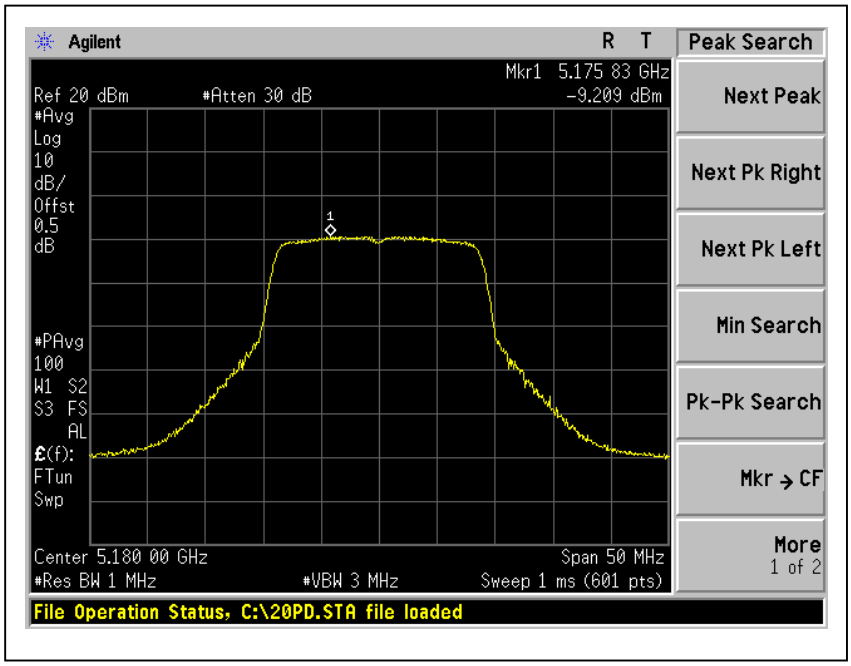
CH2



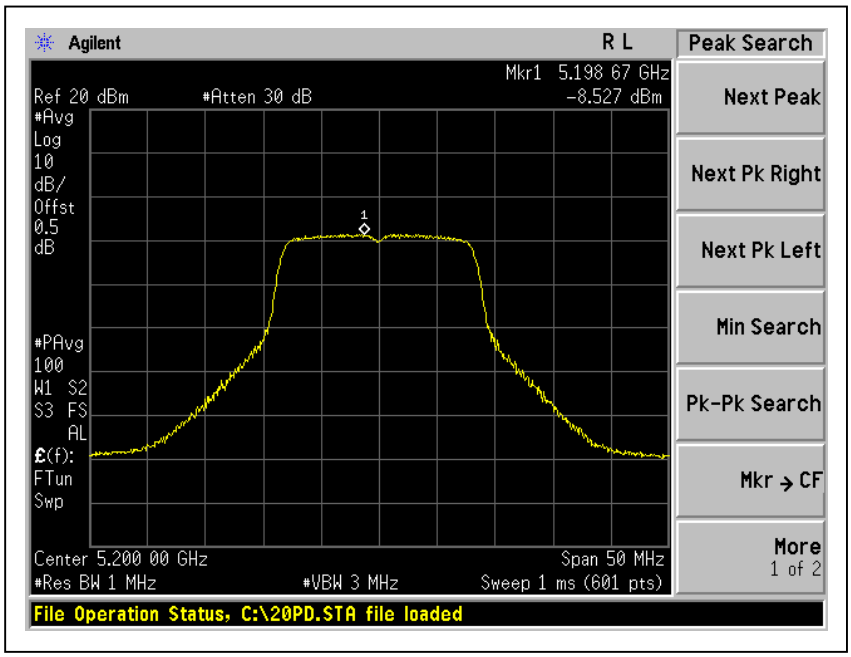
CH4


Agilent
R T
Peak Search
Mkr1 5.238 67 GHz
Ref 20 dBm
#Atten 30 dB
-7.492 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

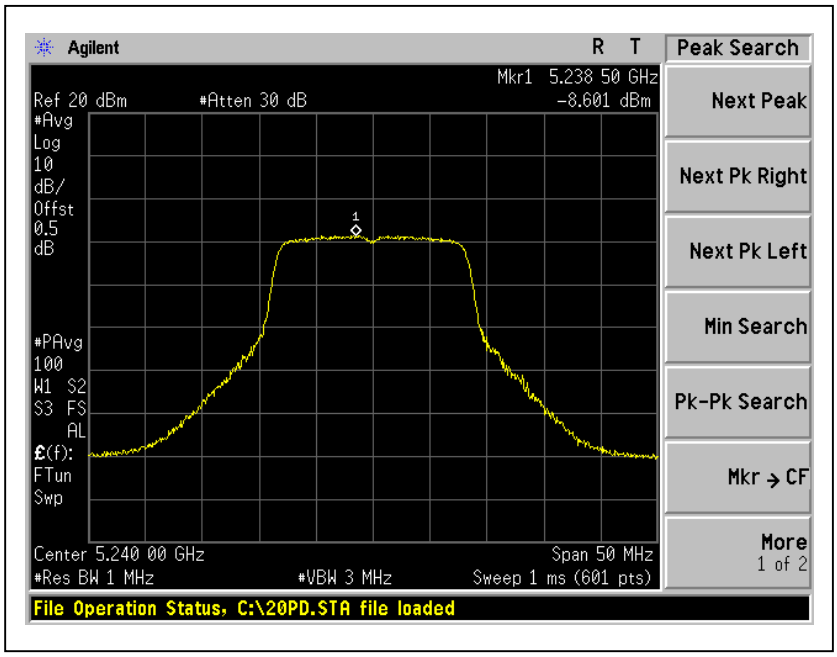
For Chain (1) : CH1



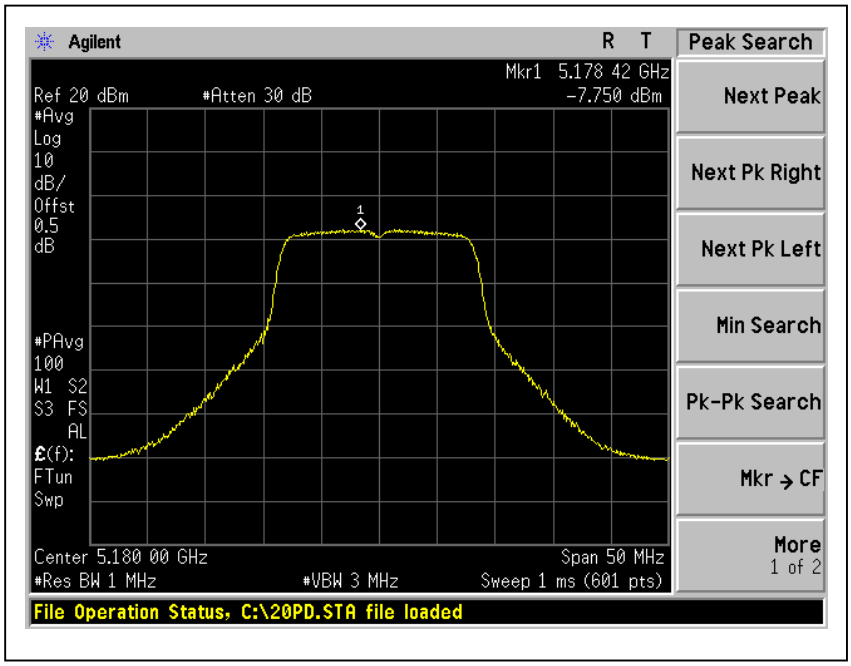
CH2



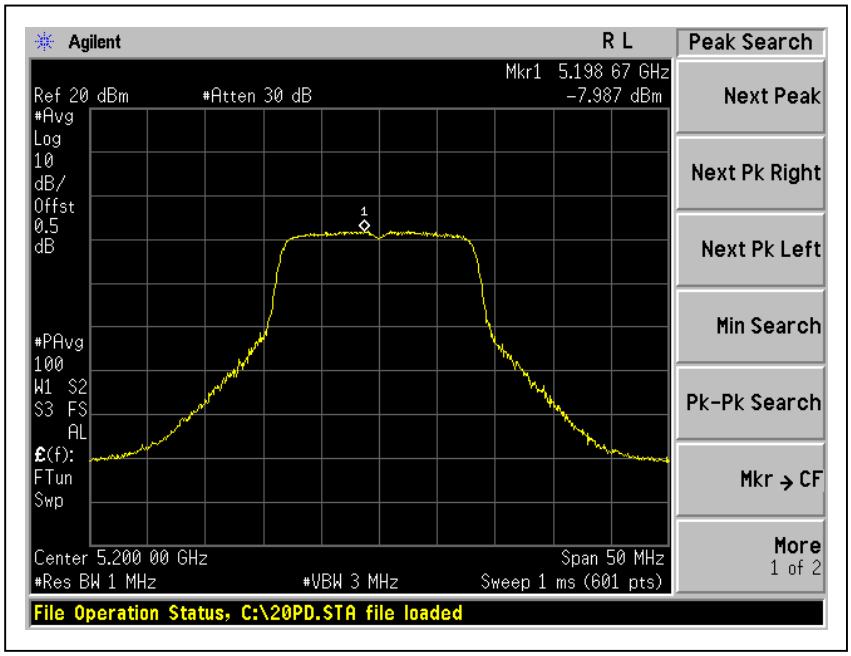
CH4


Agilent
R T
Peak Search
Mkr1 5.238 50 GHz
Ref 20 dBm
#Atten 30 dB
-8.601 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

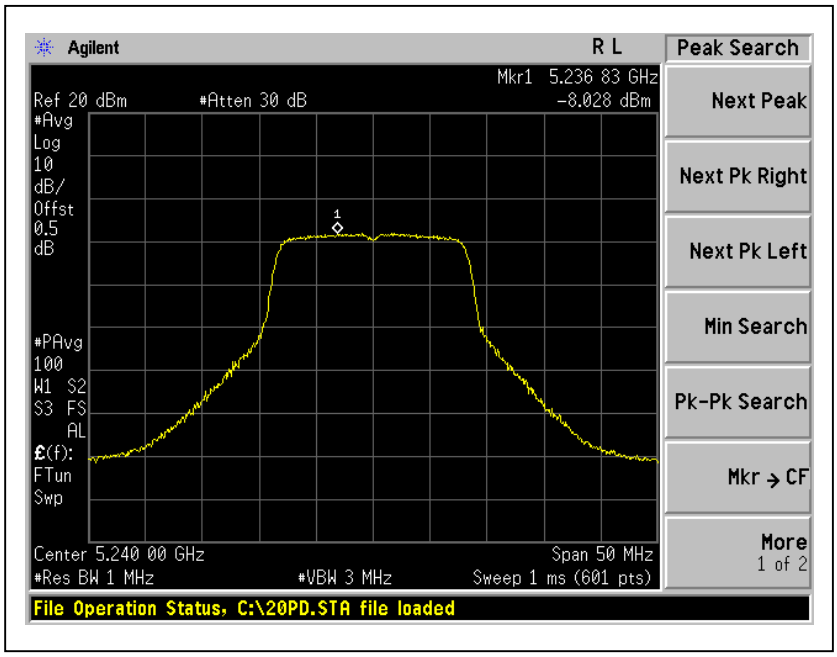
For Chain (2) : CH1



CH2



CH4

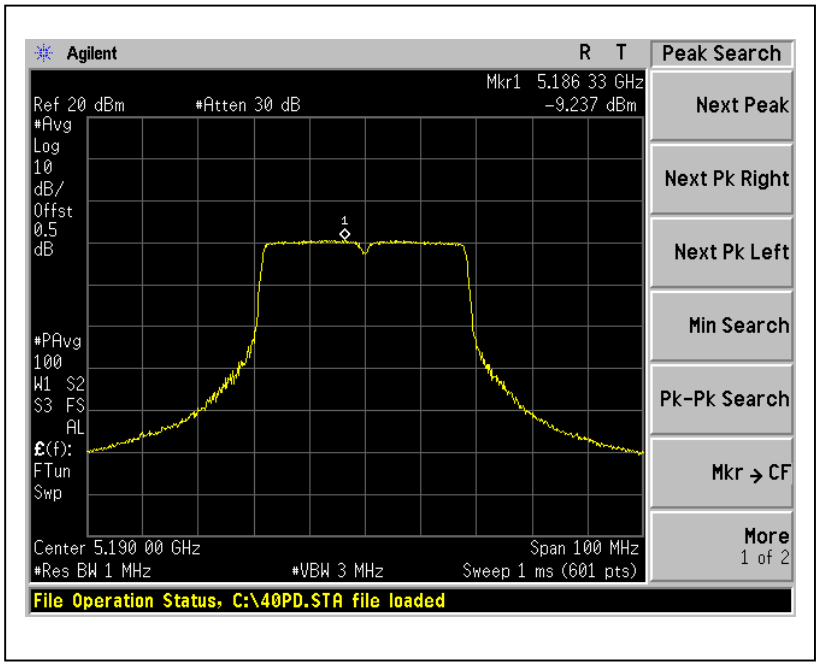

Agilent
R L
Peak Search
Mkr1 5.236 83 GHz
Ref 20 dBm
#Atten 30 dB
-8.028 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

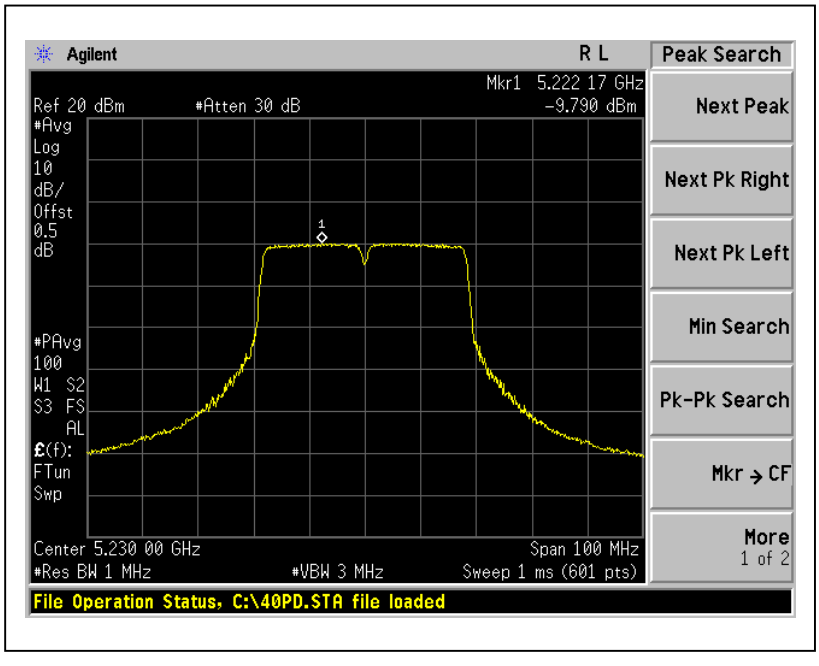
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5190	-9.237	-10.828	-9.963	-5.186	-3	PASS
2	5230	-9.790	-11.304	-10.378	-5.670	-3	PASS

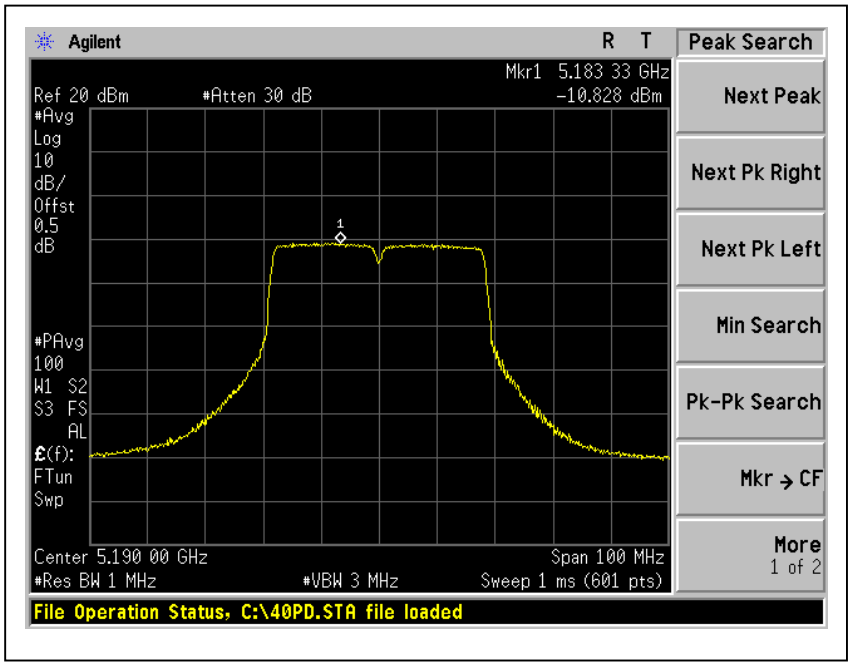
For Chain (0) : CH1



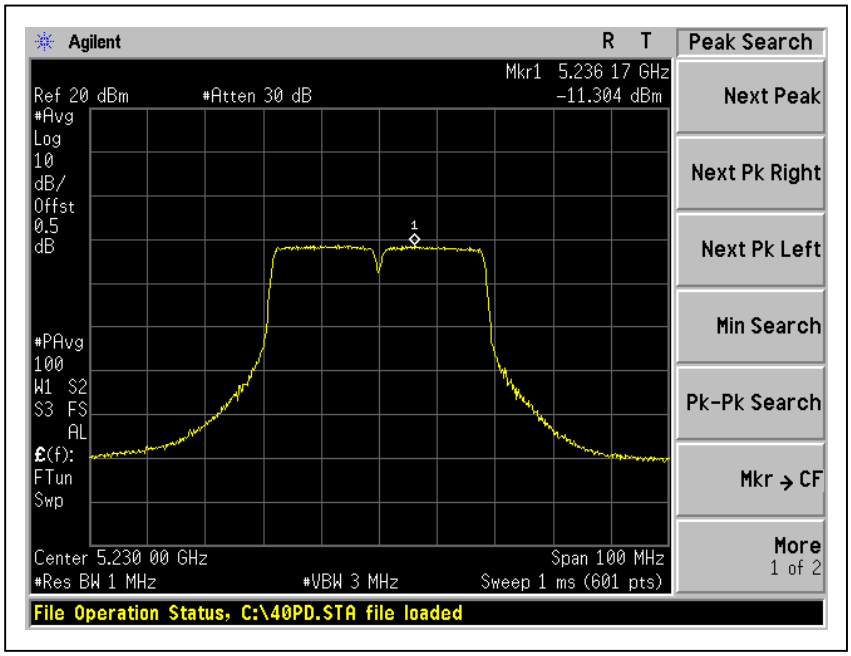
CH2



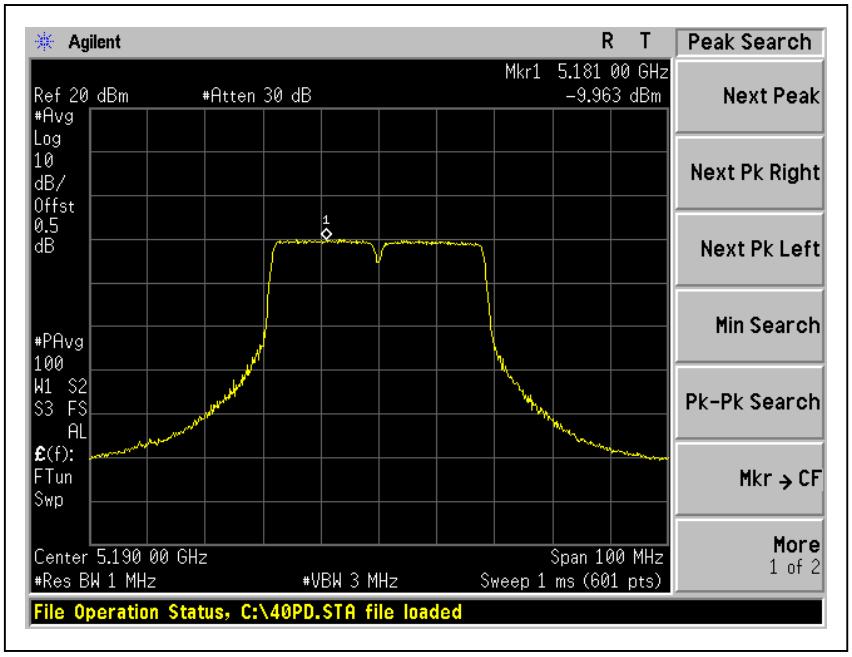
For Chain (1) : CH1



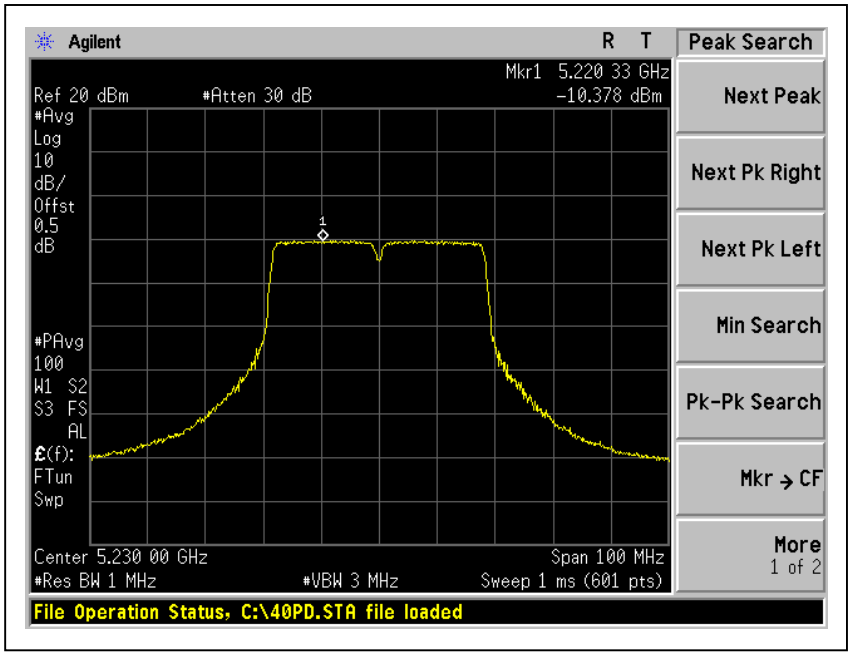
CH2



For Chain (2) : CH1



CH2



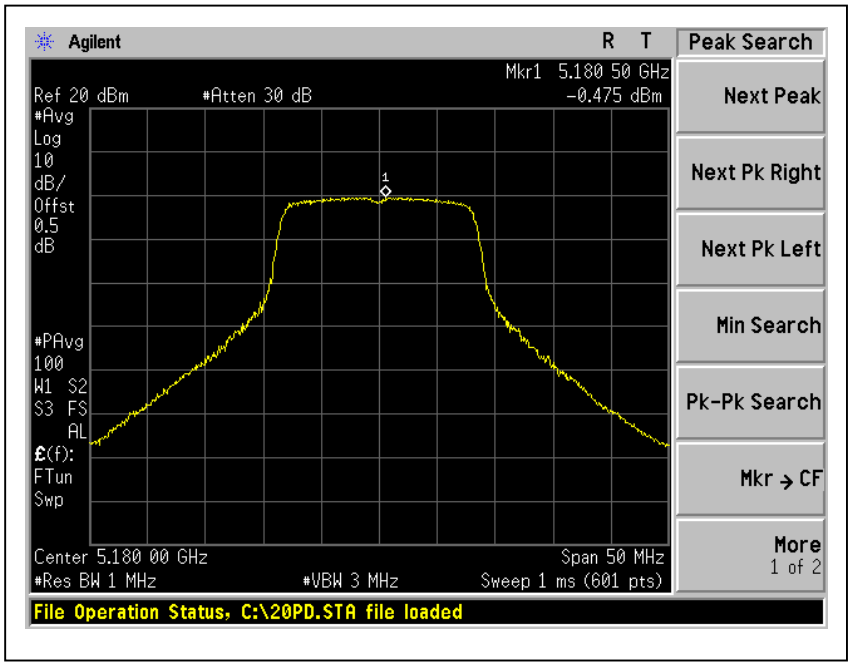
4.5.9 TEST RESULTS-ANTENNA 7

802.11a OFDM modulation

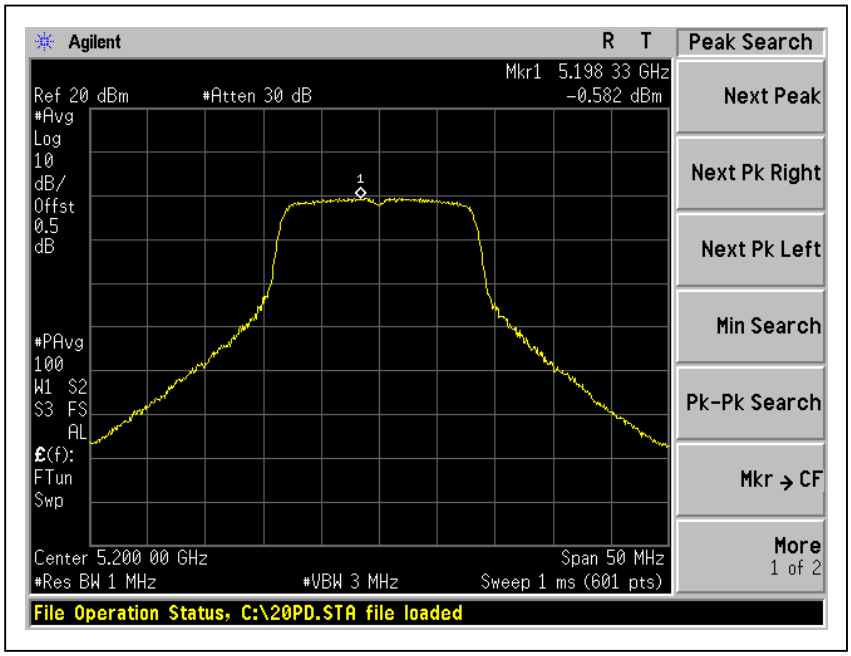
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-0.475	-1.532	-0.902	3.822	4	PASS
2	5200	-0.582	-1.764	-1.347	3.568	4	PASS
4	5240	-0.565	-1.915	-0.903	3.679	4	PASS

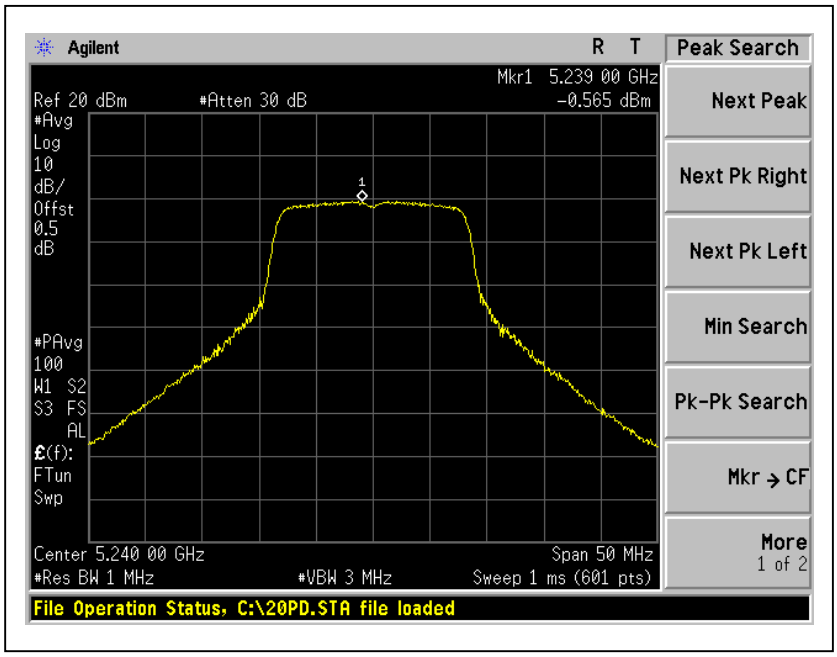
For Chain (0) : CH1



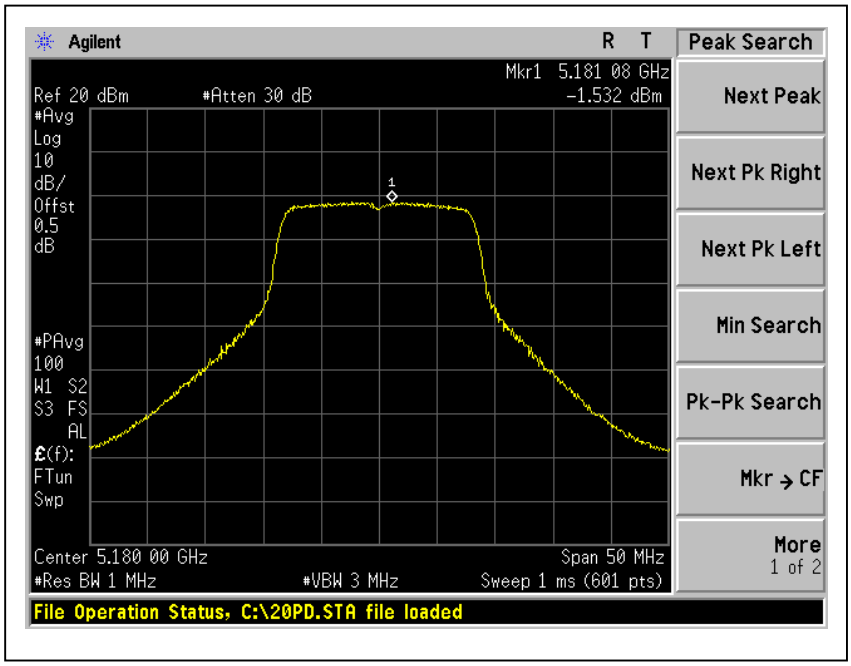
CH2



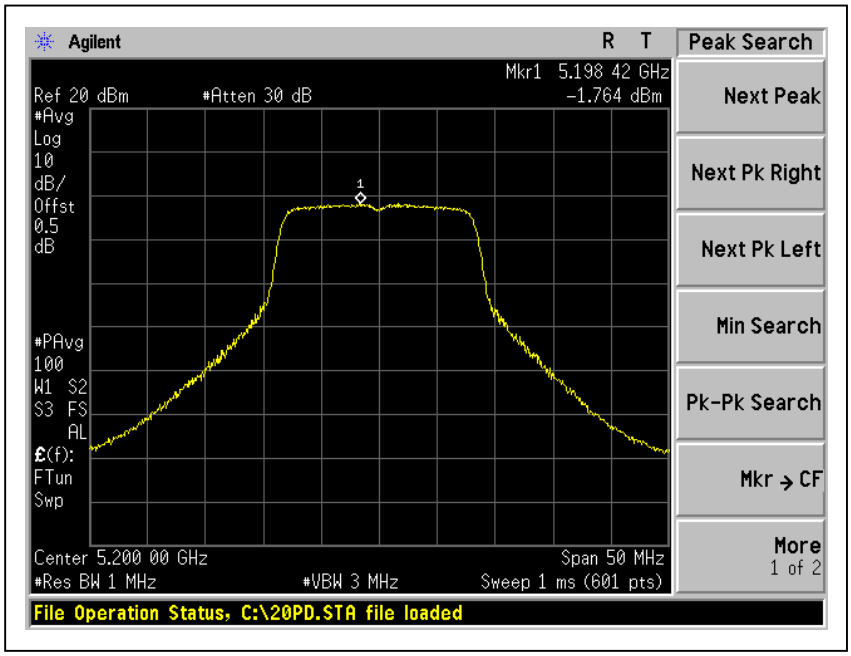
CH4


Agilent
R T
Peak Search
Mkr1 5.239 00 GHz
Ref 20 dBm
#Atten 30 dB
-0.565 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

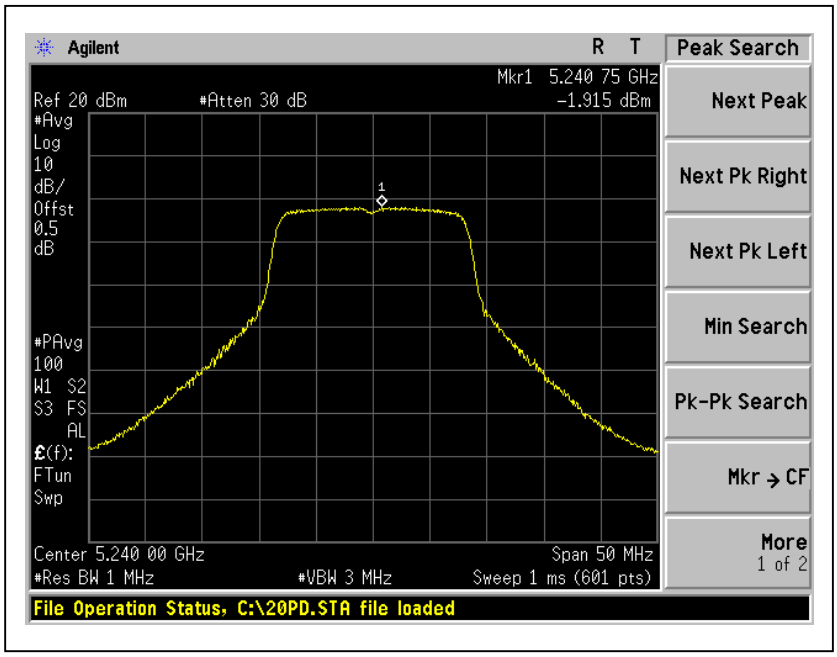
For Chain (1) : CH1



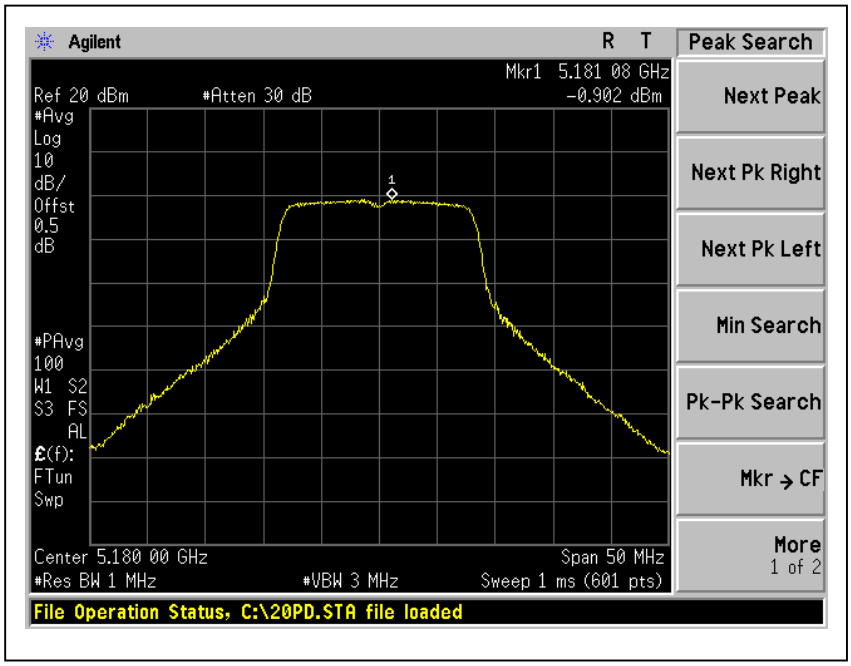
CH2



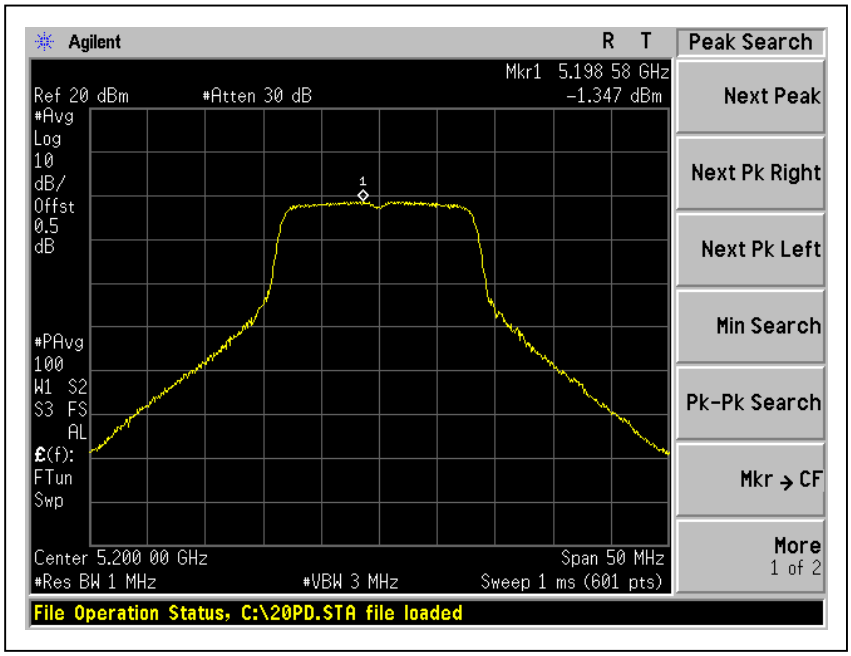
CH4


Agilent
R T
Peak Search
Mkr1 5.240 75 GHz
Ref 20 dBm
#Atten 30 dB
-1.915 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

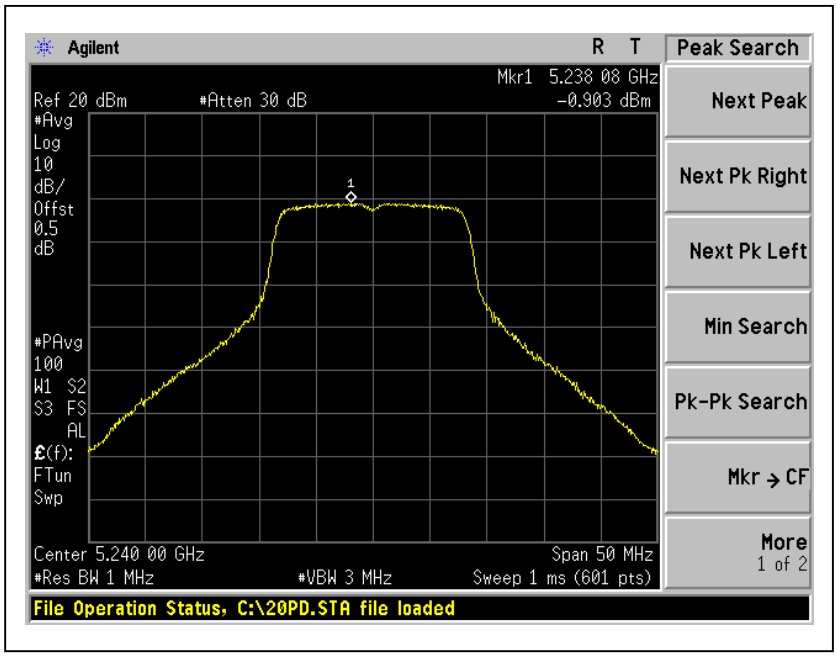
For Chain (2) : CH1



CH2



CH4

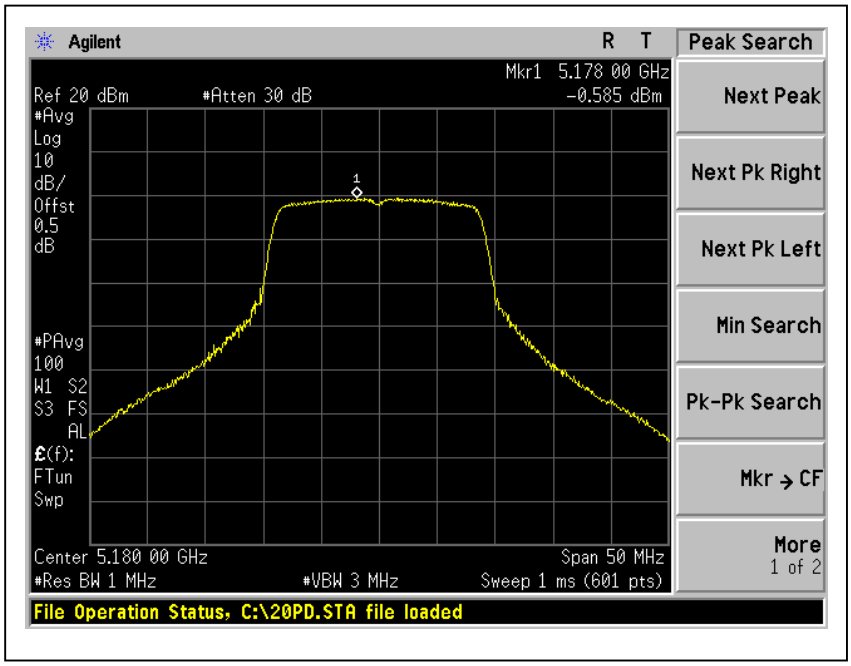

Agilent
R T
Peak Search
Mkr1 5.238 08 GHz
Ref 20 dBm
#Atten 30 dB
-0.903 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

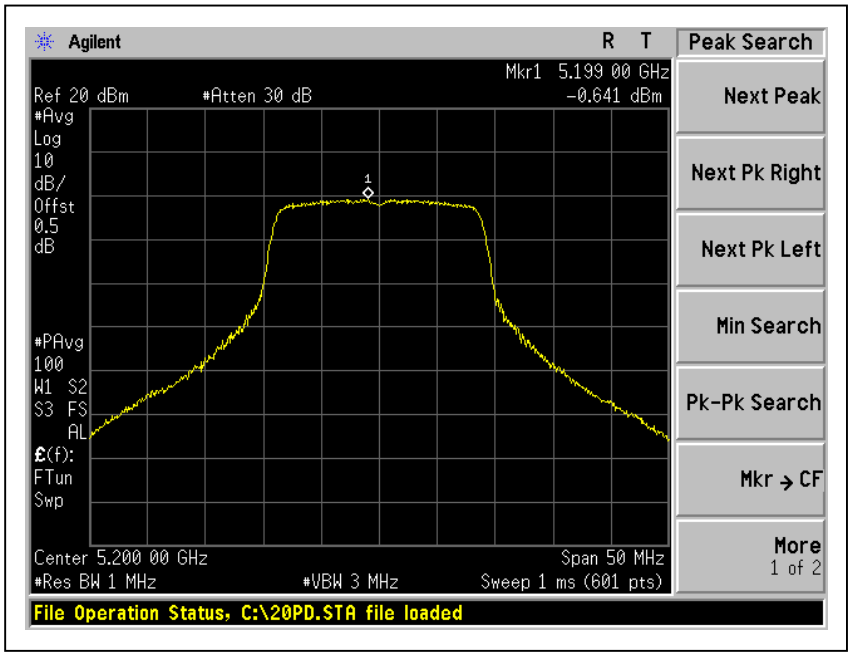
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-0.585	-1.645	-1.227	3.642	4	PASS
2	5200	-0.641	-1.918	-1.207	3.547	4	PASS
4	5240	-0.782	-1.887	-1.174	3.514	4	PASS

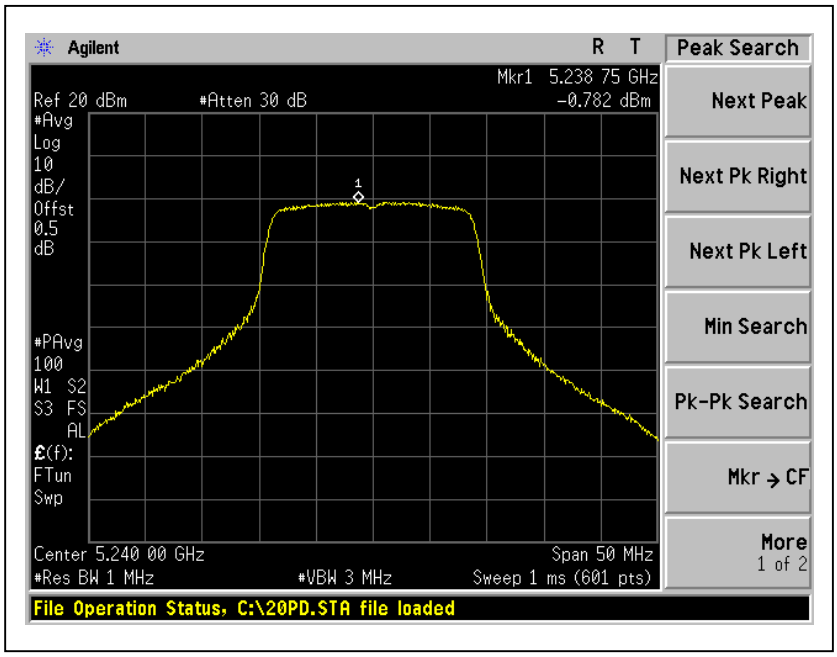
For Chain (0) : CH1



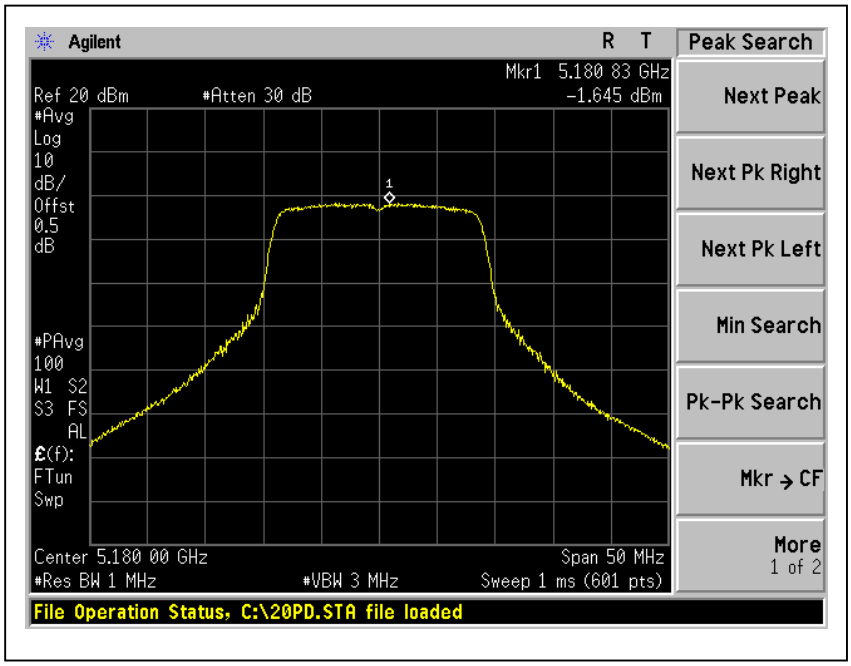
CH2



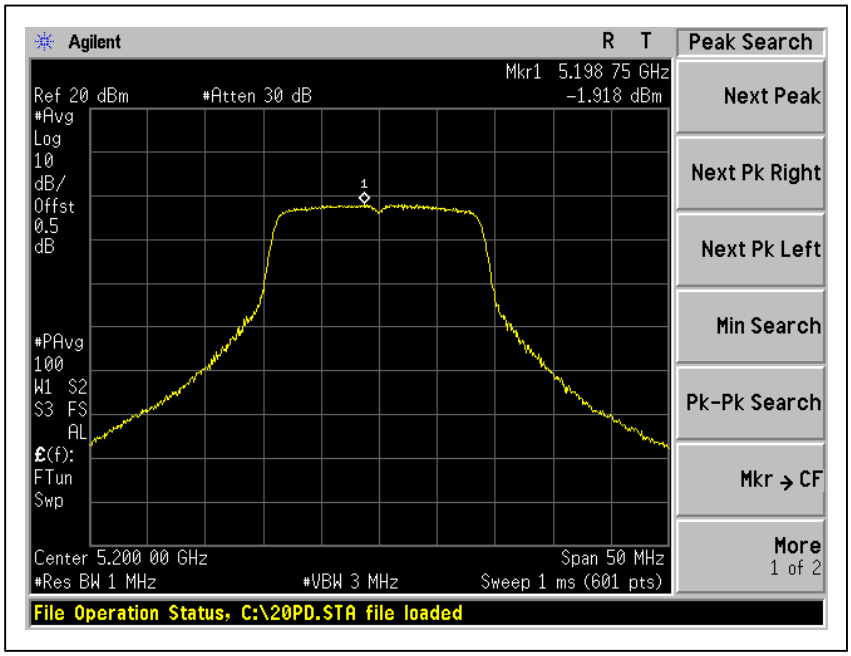
CH4


Agilent
R T
Peak Search
Mkr1 5.238 75 GHz
Ref 20 dBm
#Atten 30 dB
-0.782 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

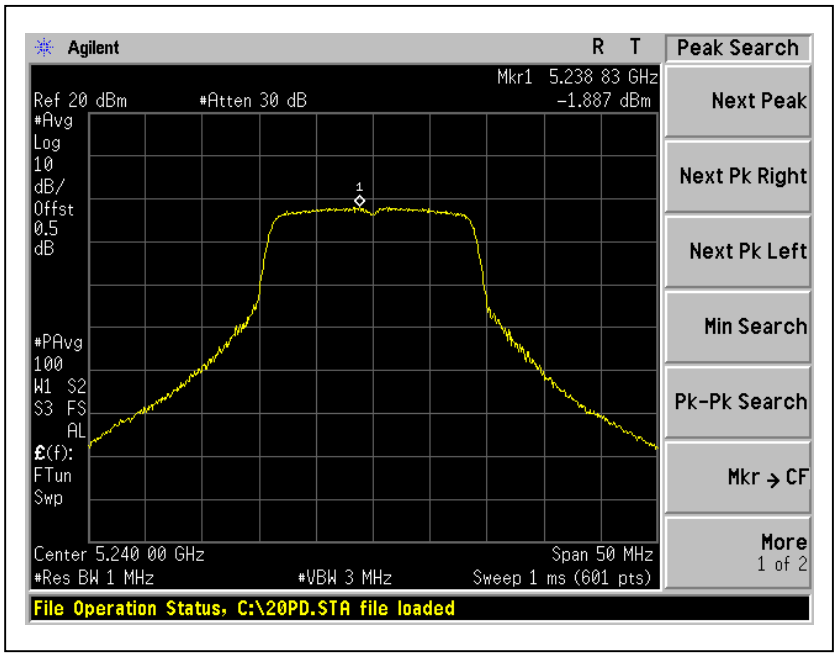
For Chain (1) : CH1



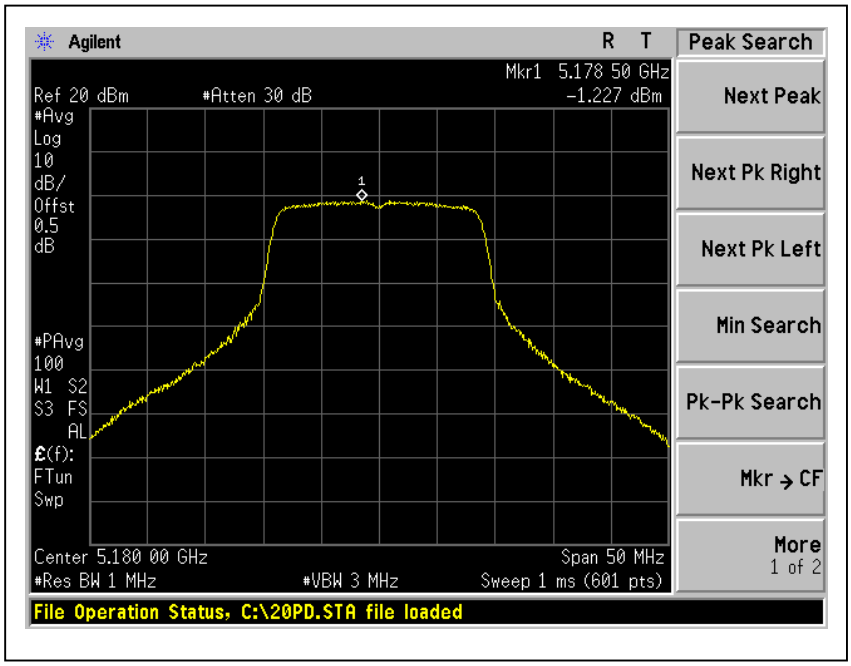
CH2



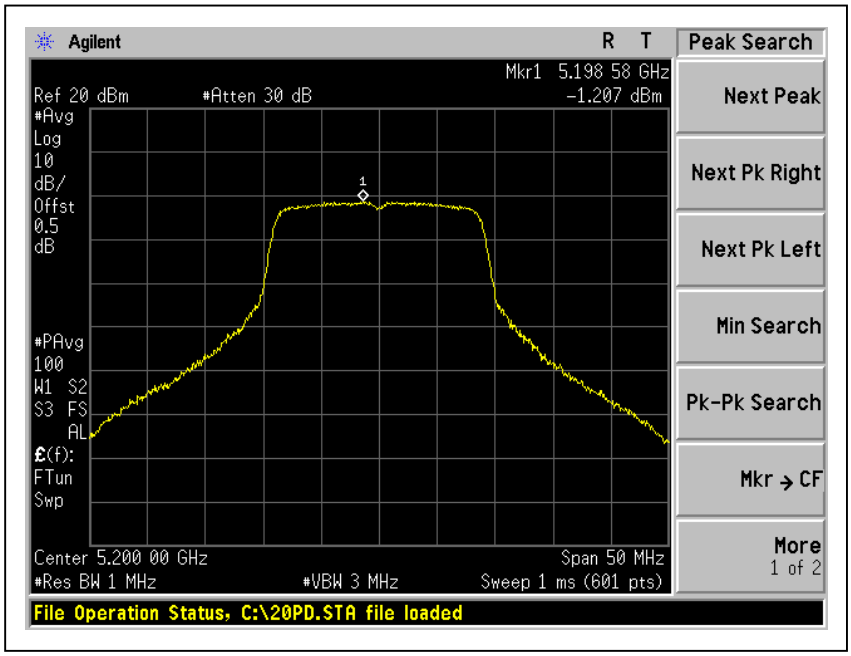
CH4


Agilent
R T
Peak Search
Mkr1 5.238 83 GHz
Ref 20 dBm
#Atten 30 dB
-1.887 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

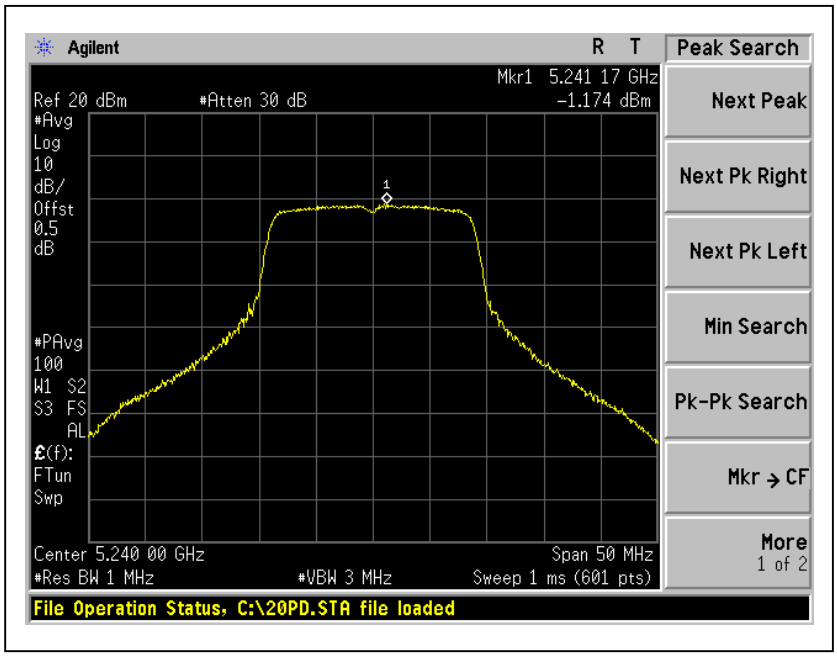
For Chain (2) : CH1



CH2



CH4

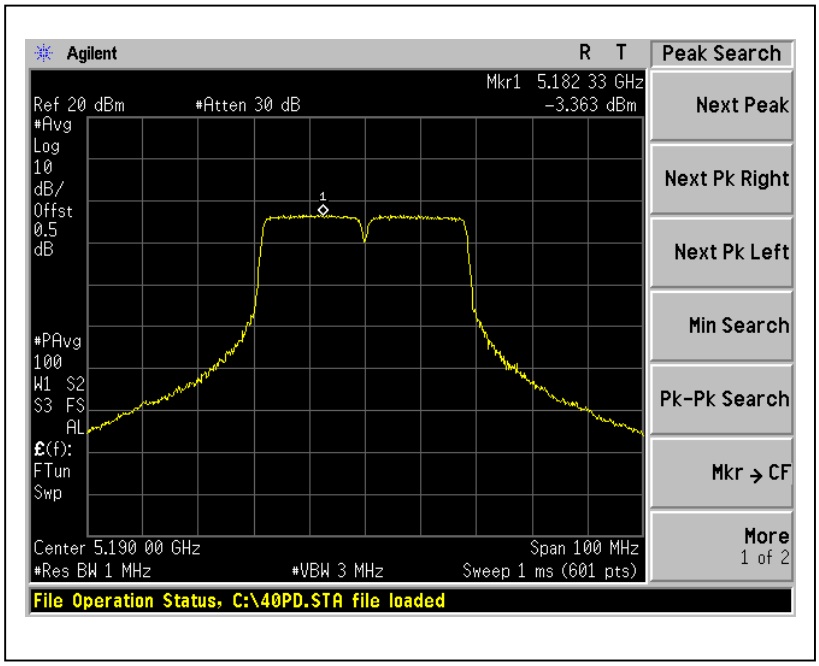

Agilent
R T
Peak Search
Mkr1 5.241 17 GHz
Ref 20 dBm
#Atten 30 dB
-1.174 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

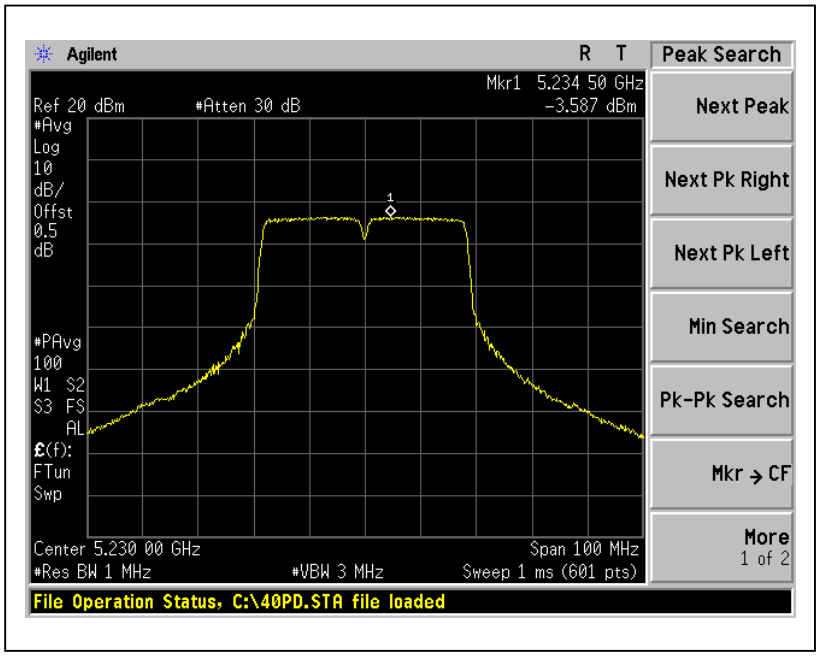
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5190	-3.363	-4.256	-4.719	0.693	4	PASS
2	5230	-3.587	-4.179	-4.156	0.806	4	PASS

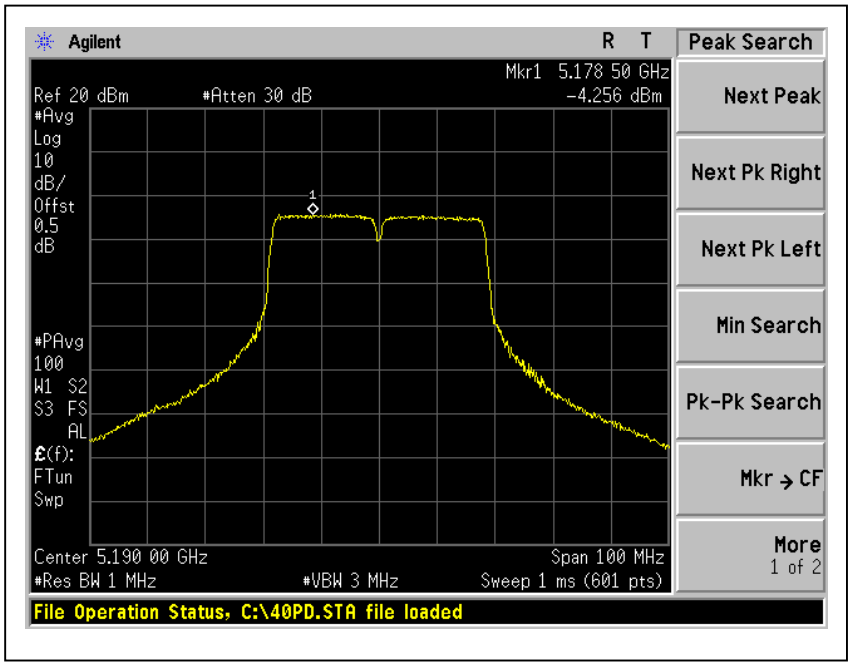
For Chain (0) : CH1



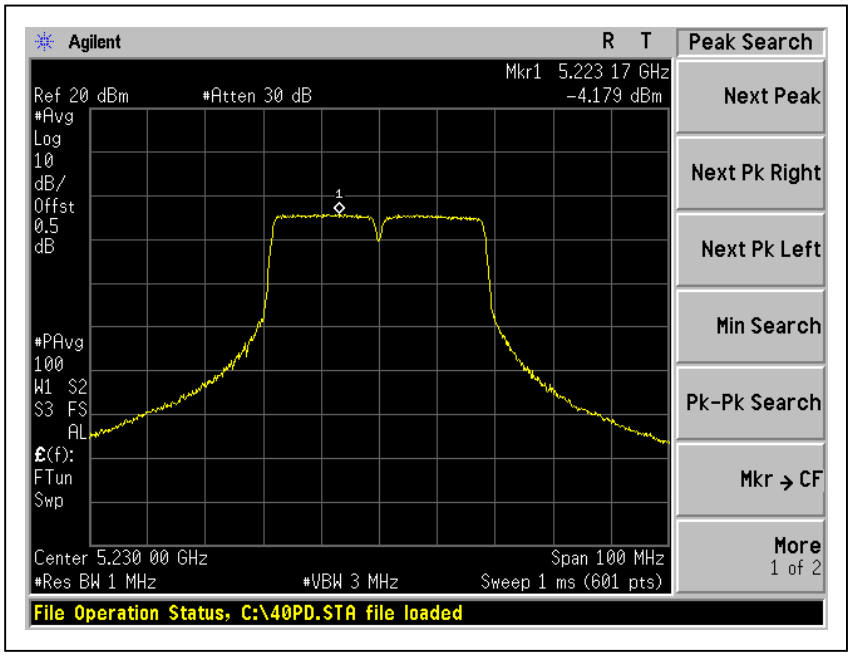
CH2



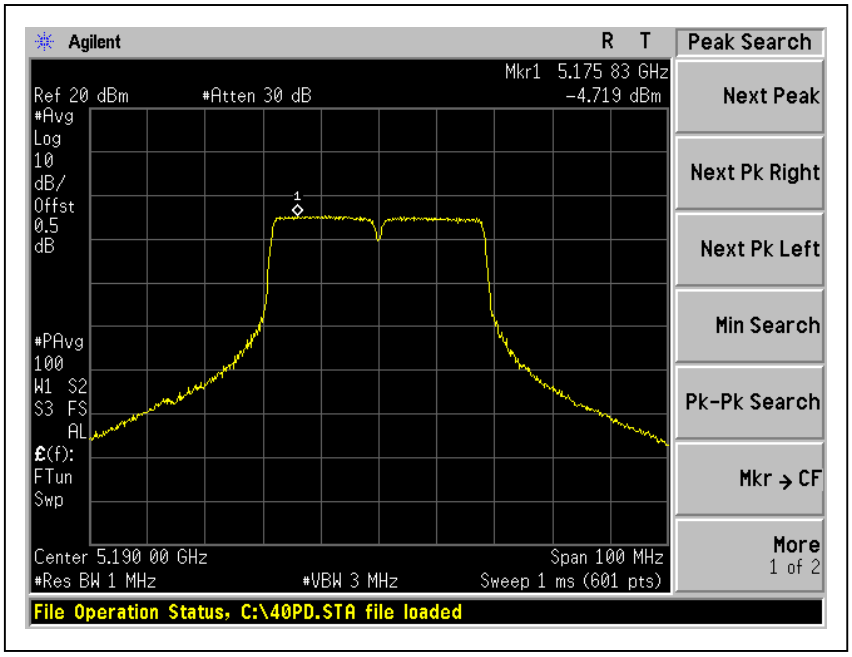
For Chain (1) : CH1



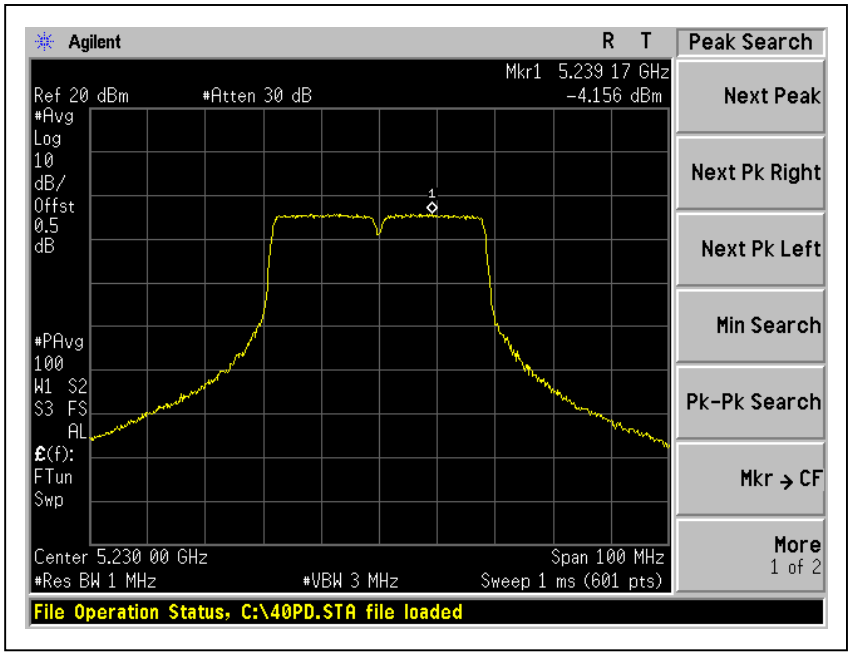
CH2



For Chain (2) : CH1



CH2



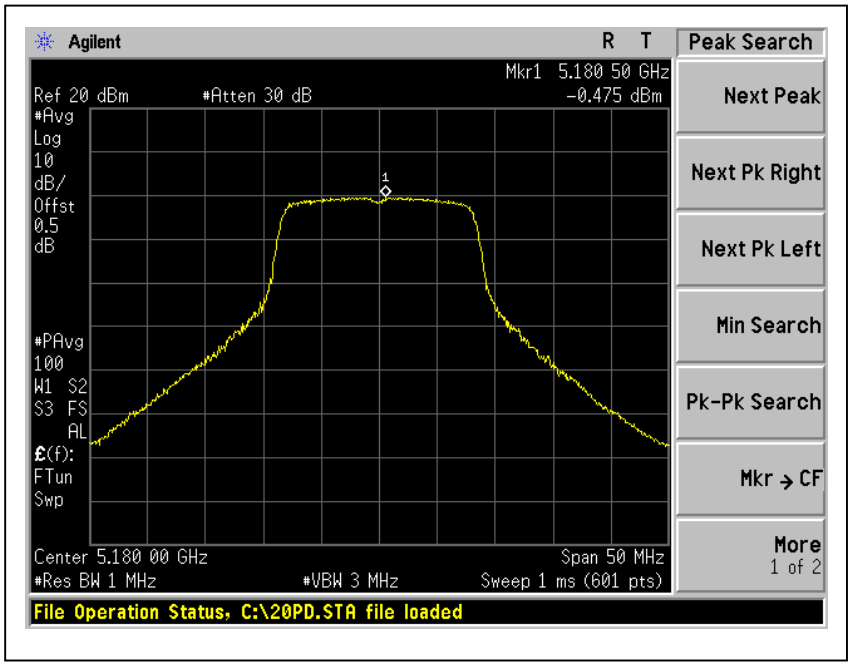
4.5.10 TEST RESULTS-ANTENNA 8

802.11a OFDM modulation

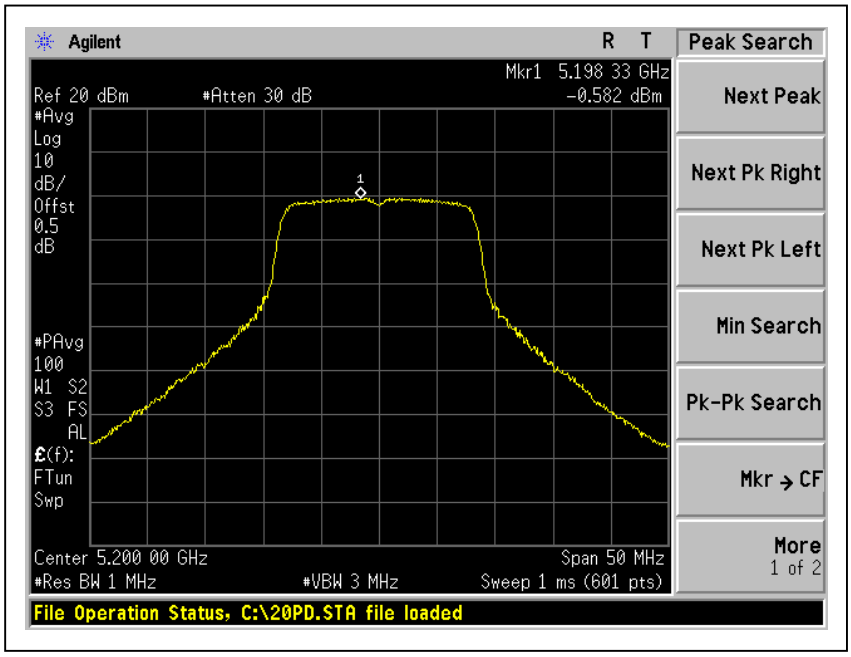
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-0.475	-1.532	-0.902	3.822	4	PASS
2	5200	-0.582	-1.764	-1.347	3.568	4	PASS
4	5240	-0.565	-1.915	-0.903	3.679	4	PASS

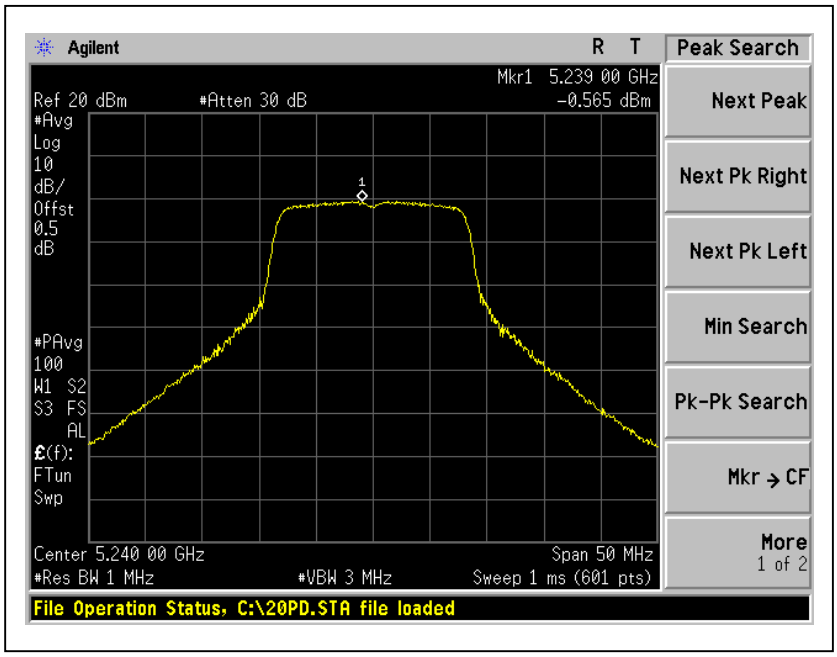
For Chain (0) : CH1



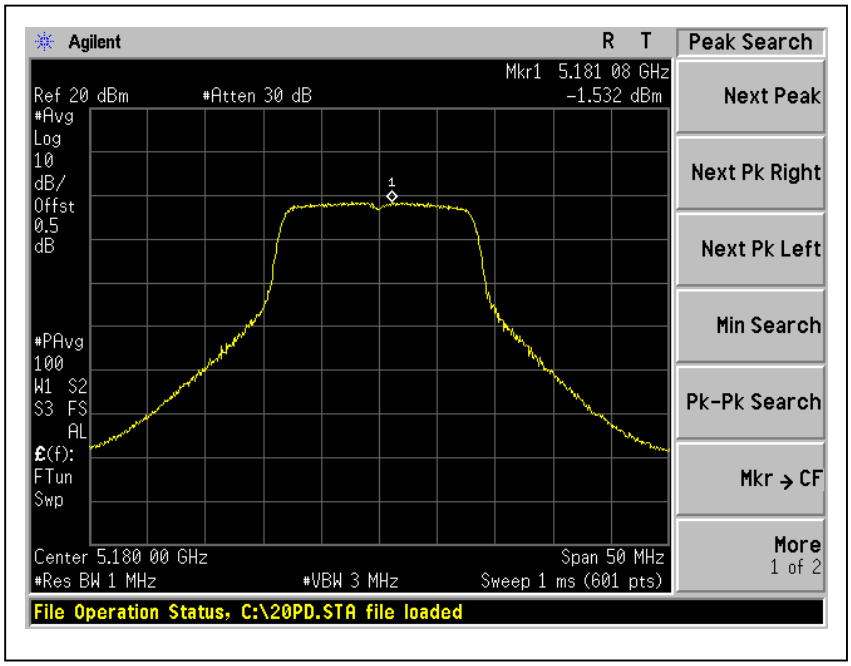
CH2



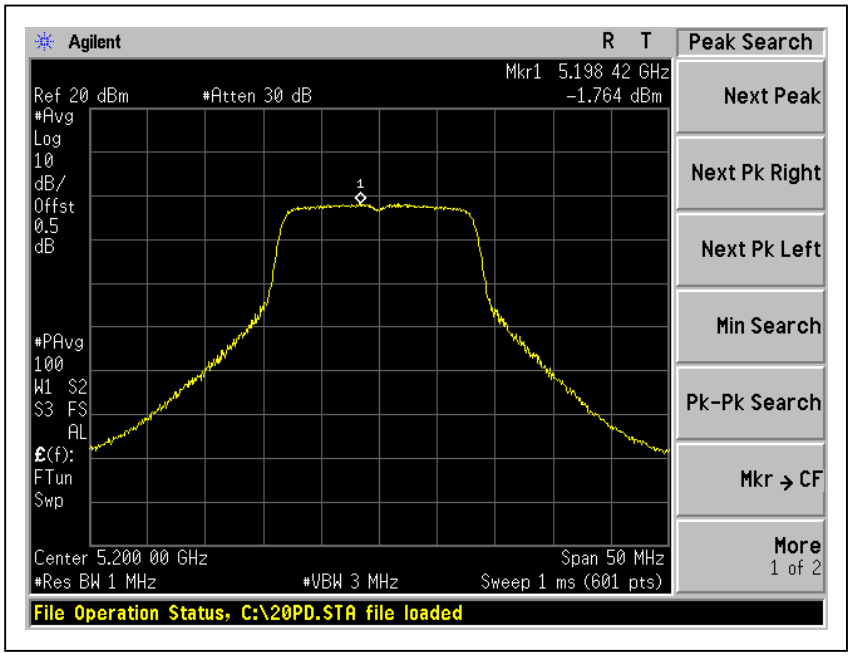
CH4


Agilent
R T
Peak Search
Mkr1 5.239 00 GHz
Ref 20 dBm
#Atten 30 dB
-0.565 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

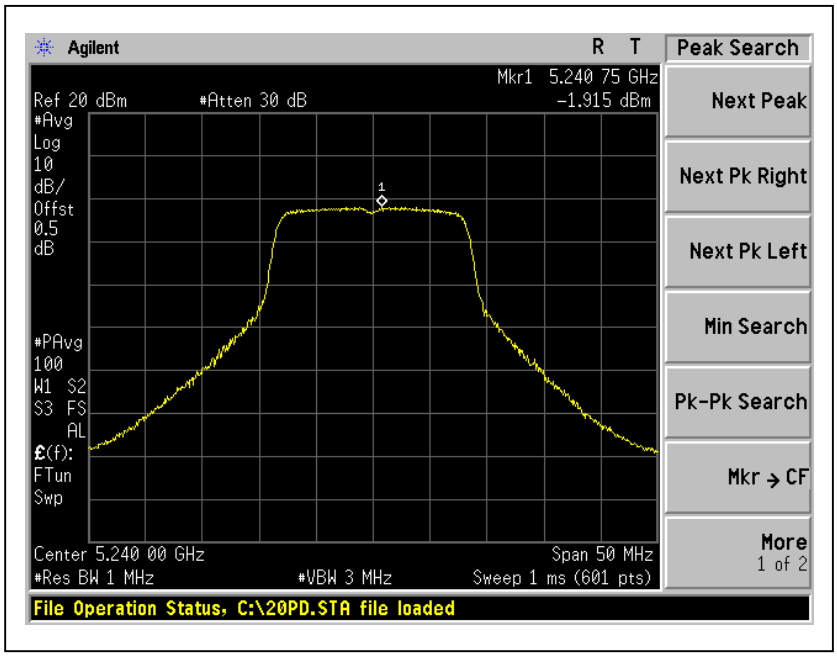
For Chain (1) : CH1



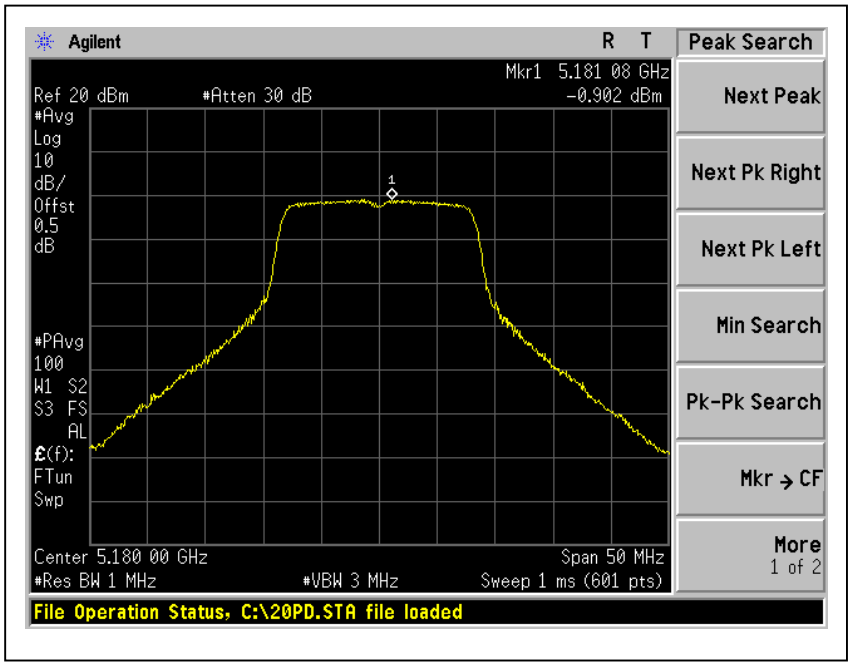
CH2



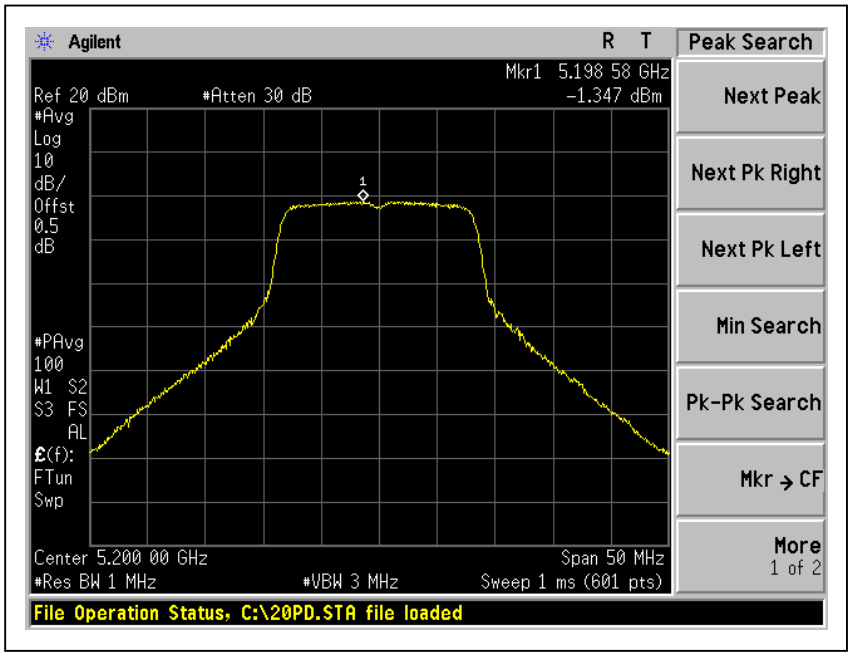
CH4


Agilent
R T
Peak Search
Mkr1 5.240 75 GHz
Ref 20 dBm
#Atten 30 dB
-1.915 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

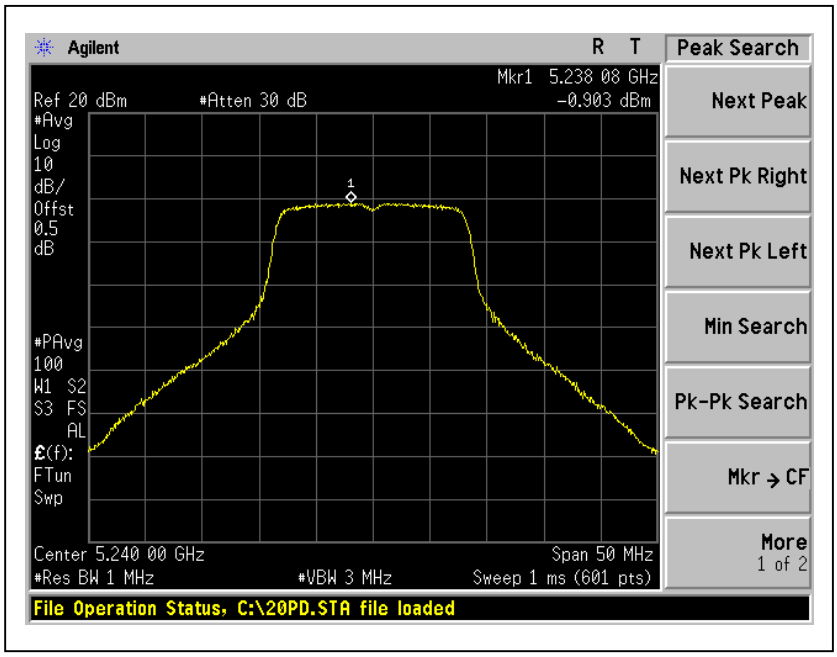
For Chain (2) : CH1



CH2



CH4

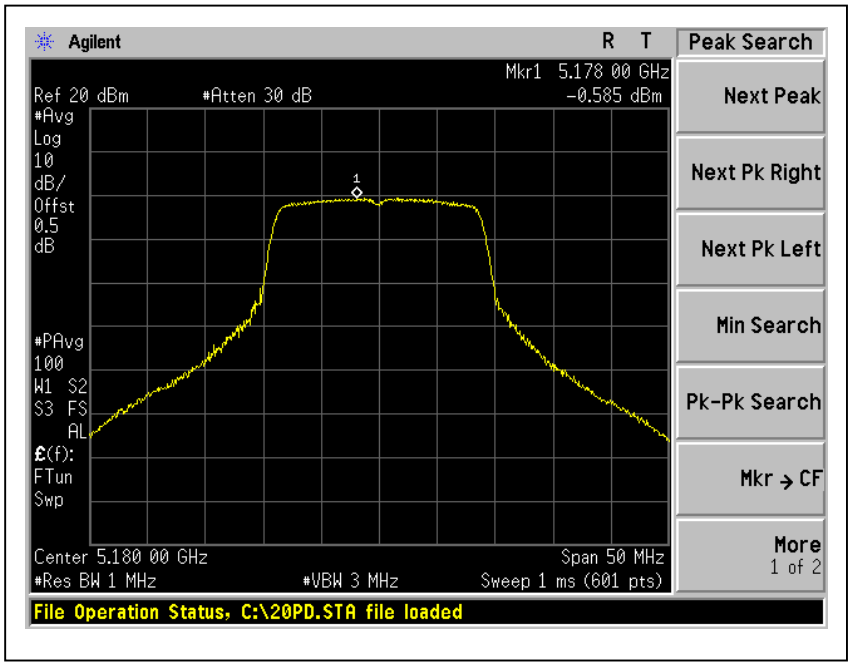

Agilent
R T
Peak Search
Mkr1 5.238 08 GHz
Ref 20 dBm
#Atten 30 dB
-0.903 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

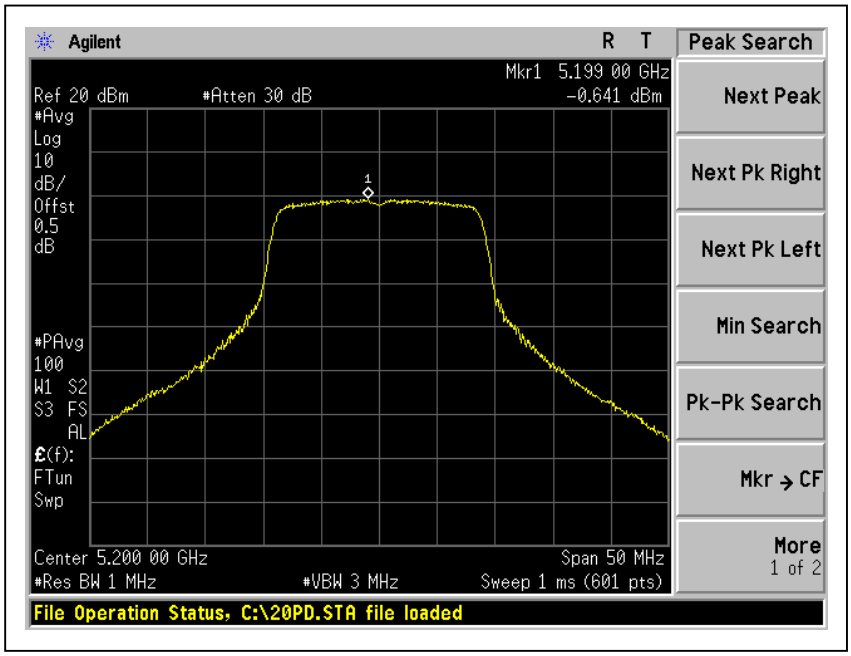
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-0.585	-1.645	-1.227	3.642	4	PASS
2	5200	-0.641	-1.918	-1.207	3.547	4	PASS
4	5240	-0.782	-1.887	-1.174	3.514	4	PASS

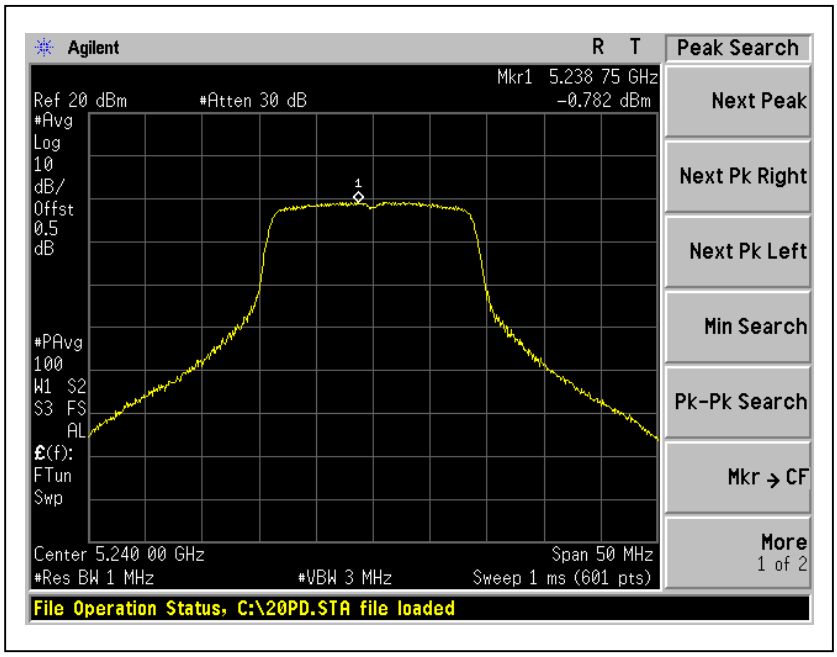
For Chain (0) : CH1



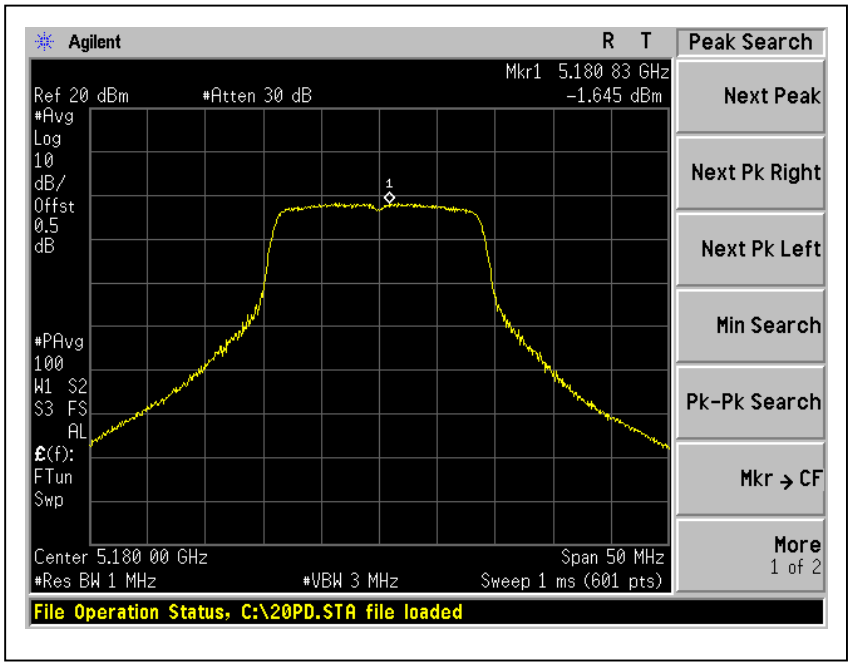
CH2



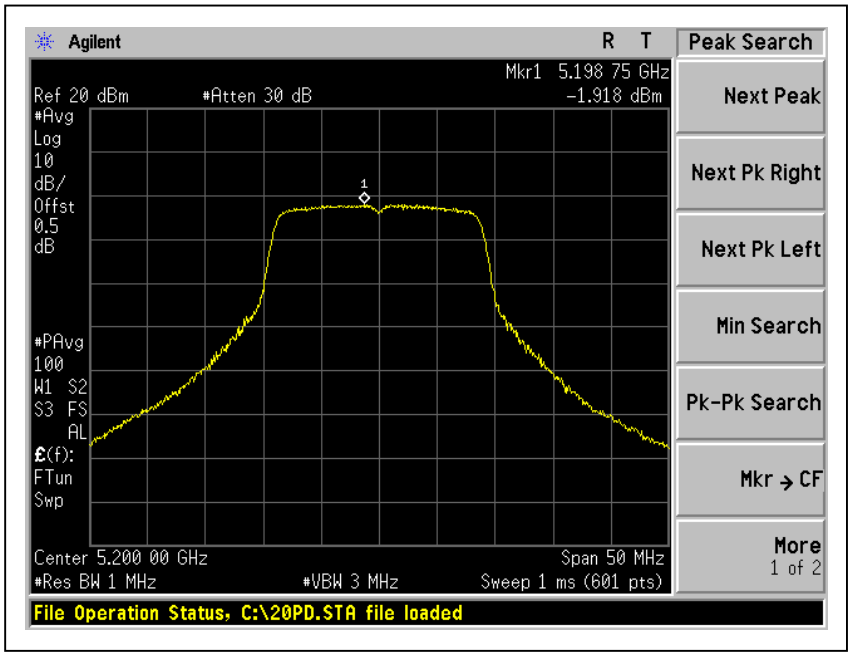
CH4


Agilent
R T
Peak Search
Mkr1 5.238 75 GHz
Ref 20 dBm
#Atten 30 dB
-0.782 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

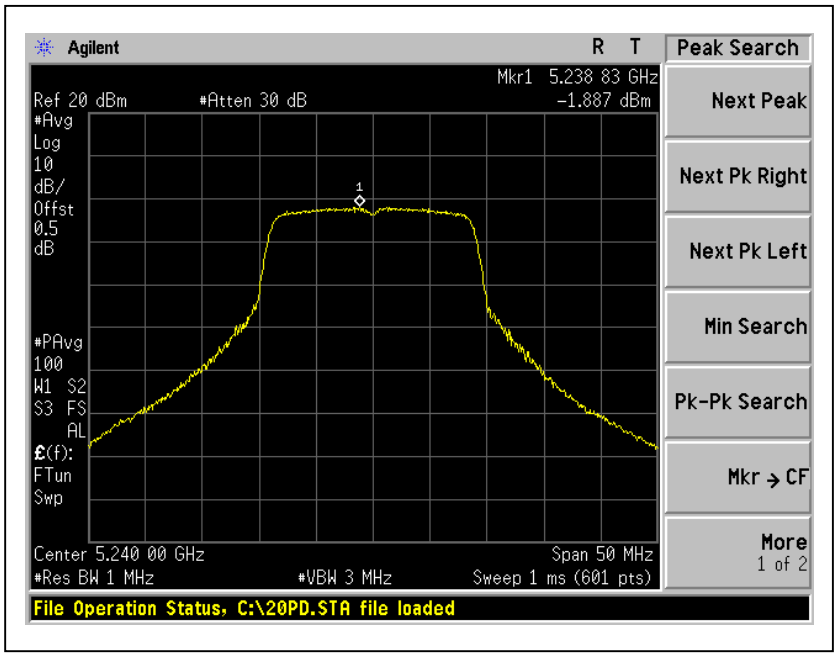
For Chain (1) : CH1



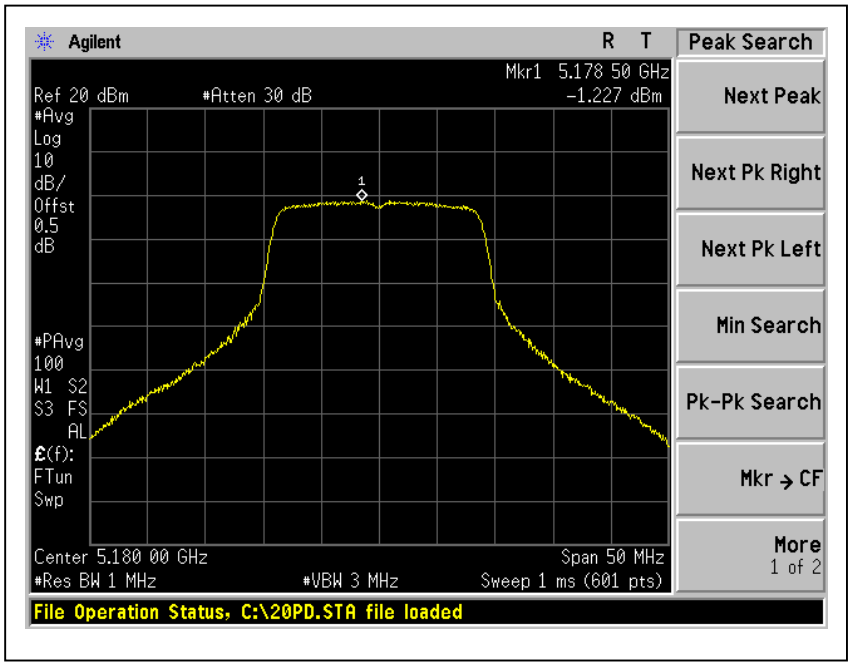
CH2



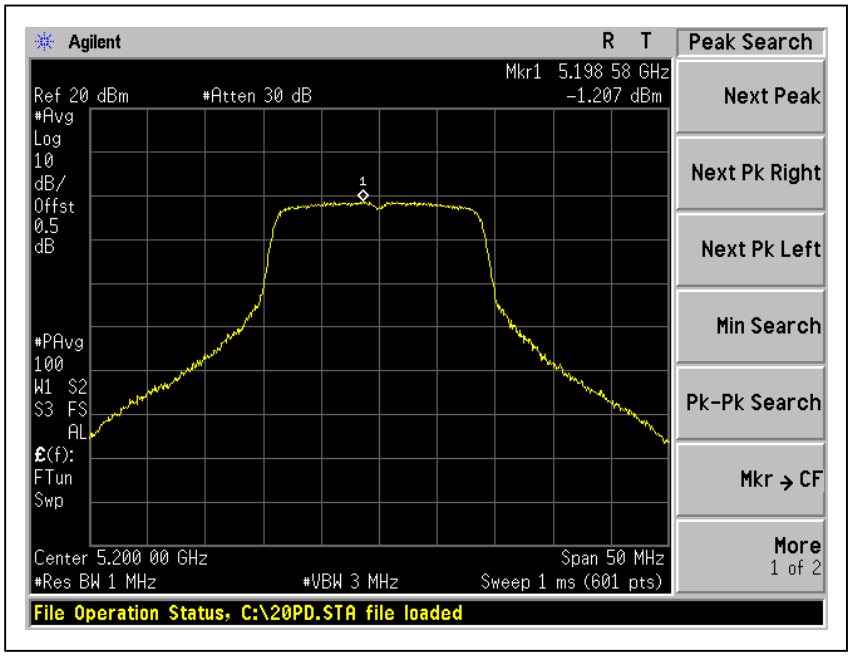
CH4


Agilent
R T
Peak Search
Mkr1 5.238 83 GHz
Ref 20 dBm
#Atten 30 dB
-1.887 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

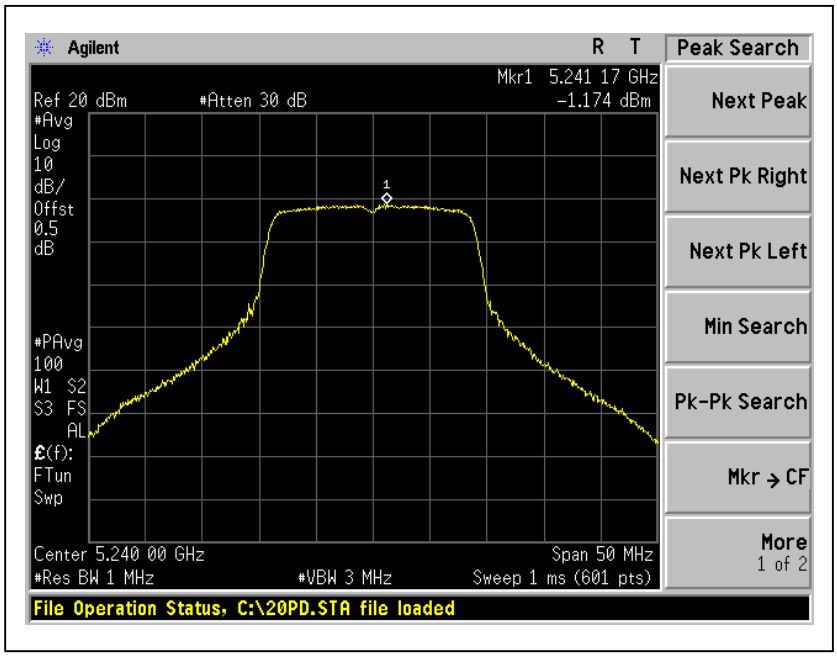
For Chain (2) : CH1



CH2



CH4

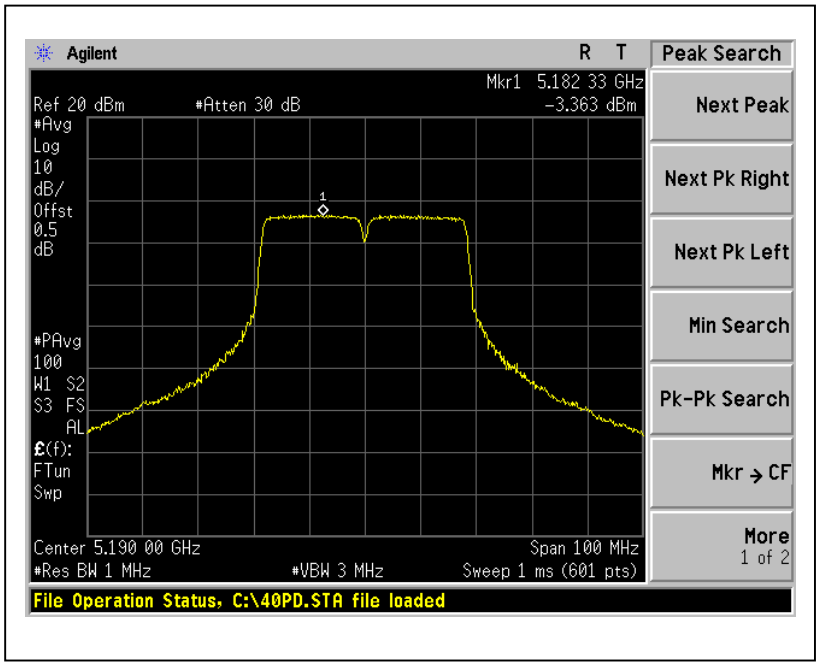

Agilent
R T
Peak Search
Mkr1 5.241 17 GHz
Ref 20 dBm
#Atten 30 dB
-1.174 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

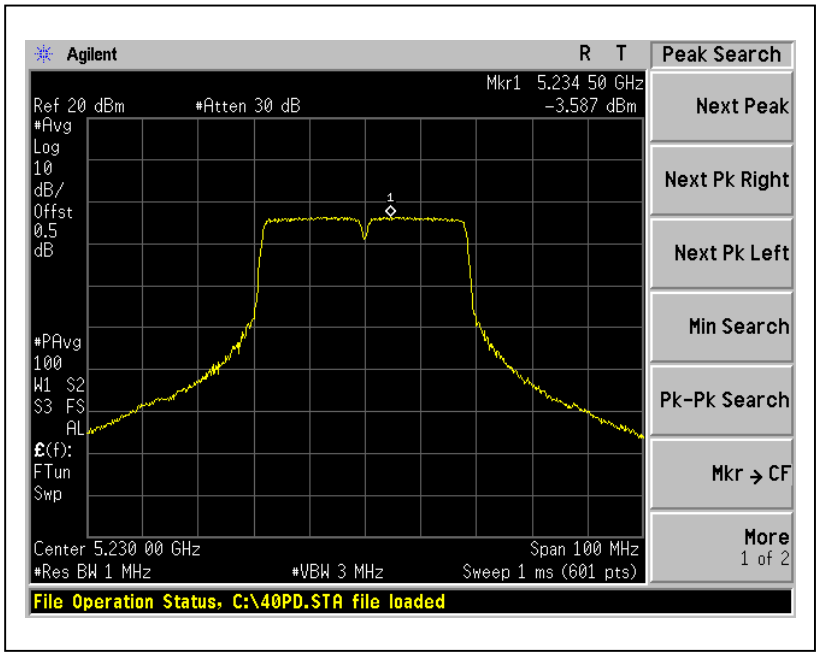
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5190	-3.363	-4.256	-4.719	0.693	4	PASS
2	5230	-3.587	-4.179	-4.156	0.806	4	PASS

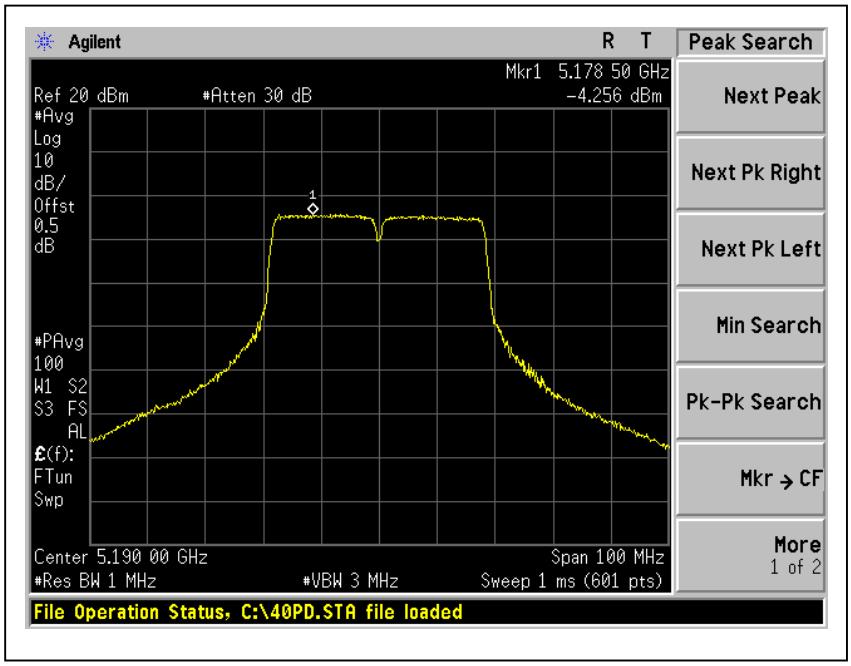
For Chain (0) : CH1



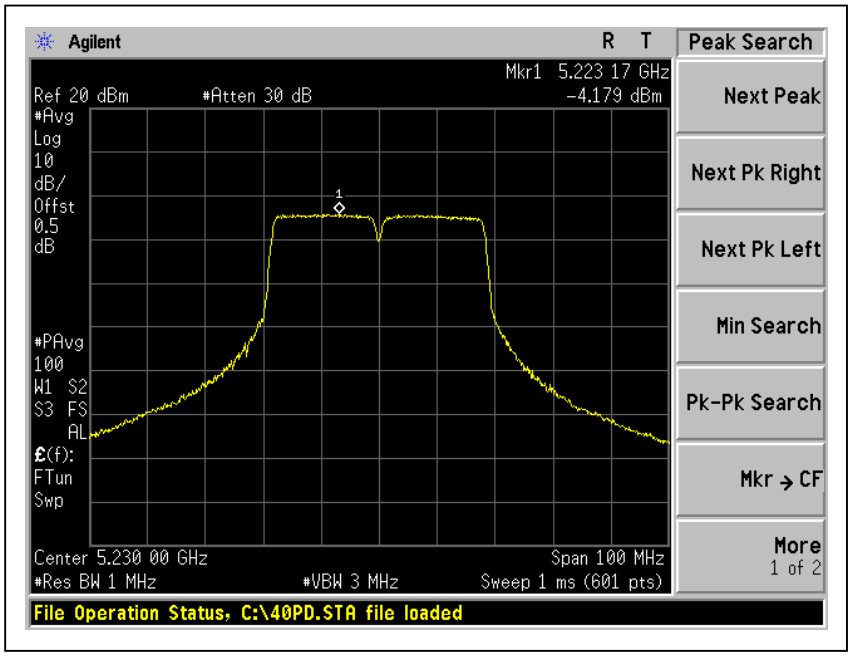
CH2



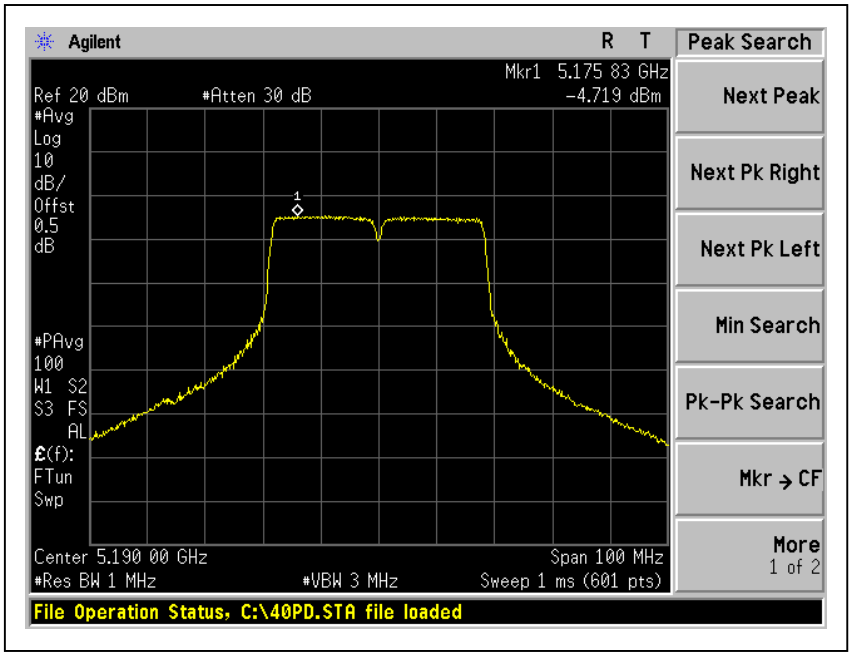
For Chain (1) : CH1



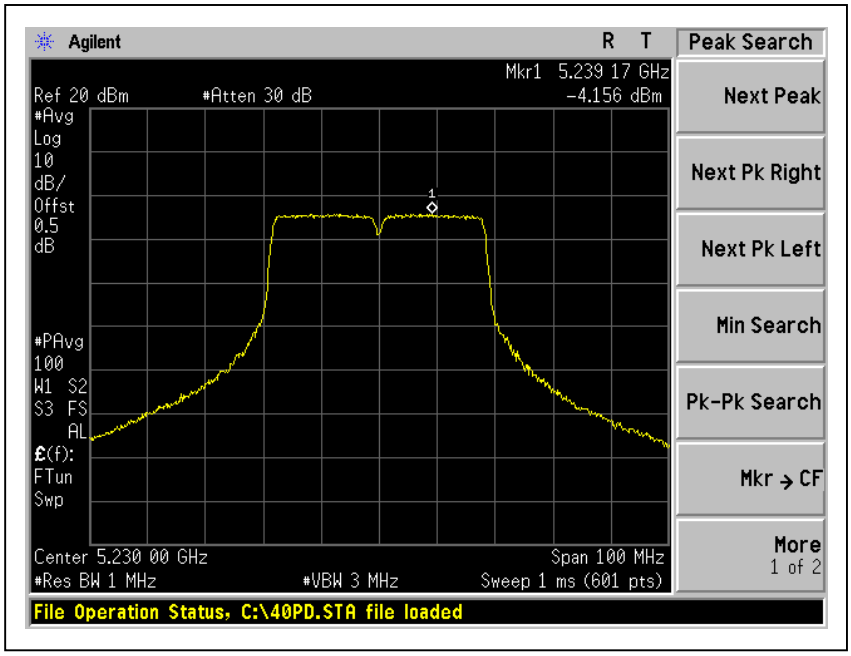
CH2



For Chain (2) : CH1



CH2



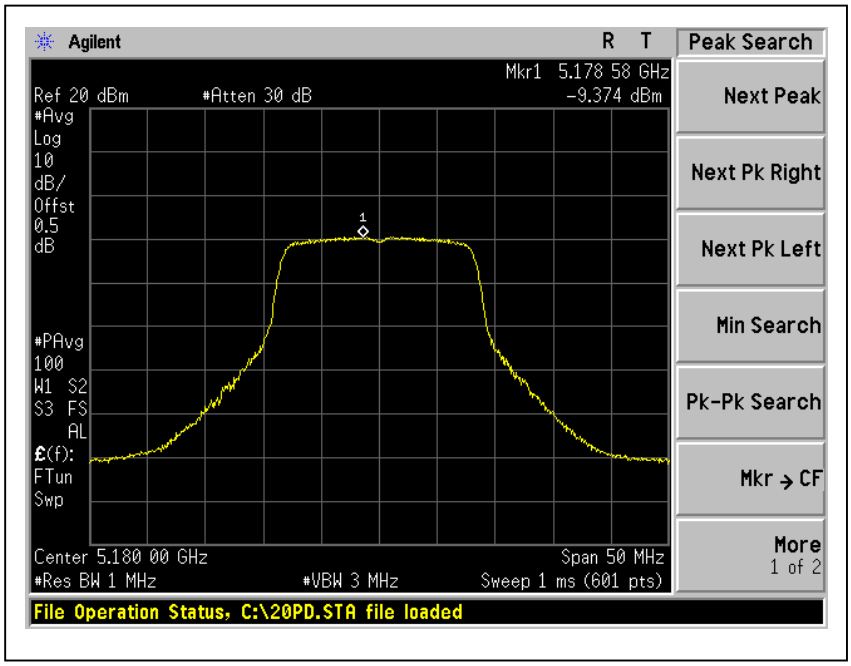
4.5.11 TEST RESULTS-ANTENNA 11

802.11a OFDM modulation

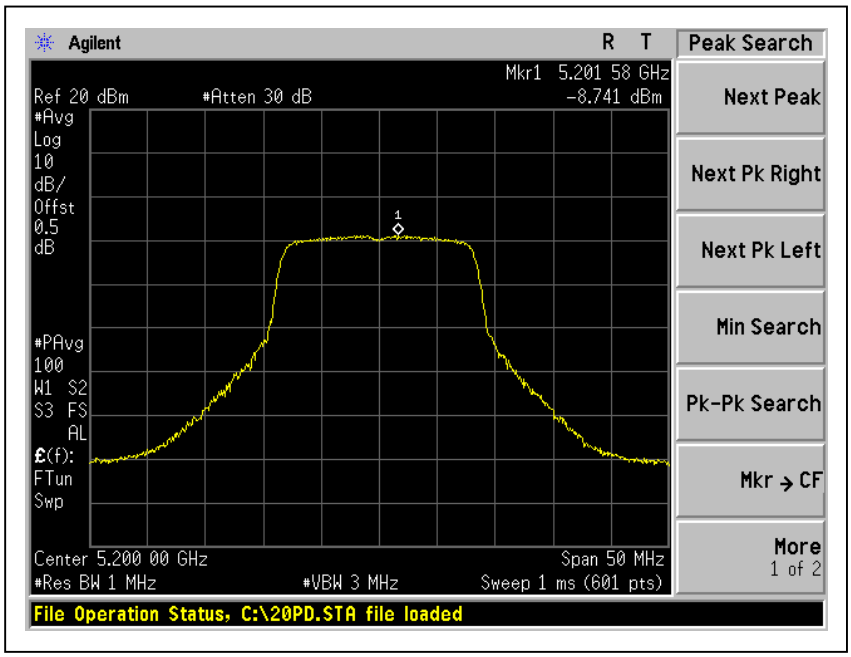
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-9.374	-10.097	-10.226	-5.100	-4.5	PASS
2	5200	-8.741	-10.378	-9.850	-4.815	-4.5	PASS
4	5240	-8.943	-10.190	-10.520	-5.045	-4.5	PASS

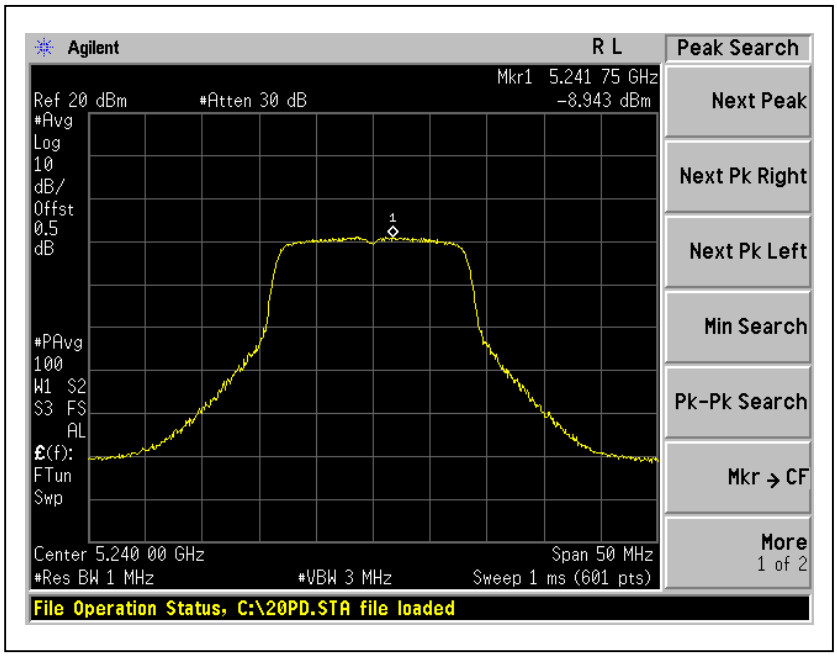
For Chain (0) : CH1



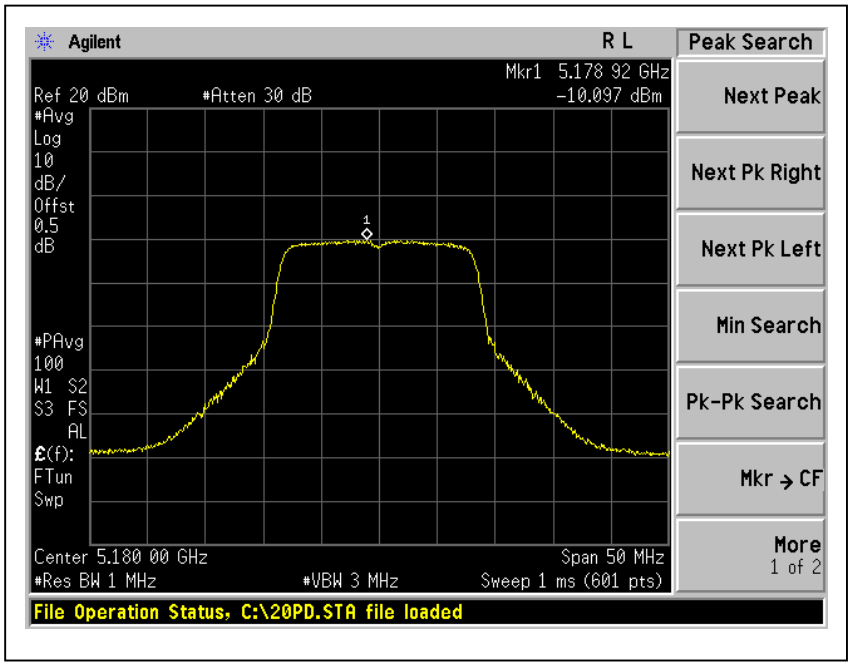
CH2



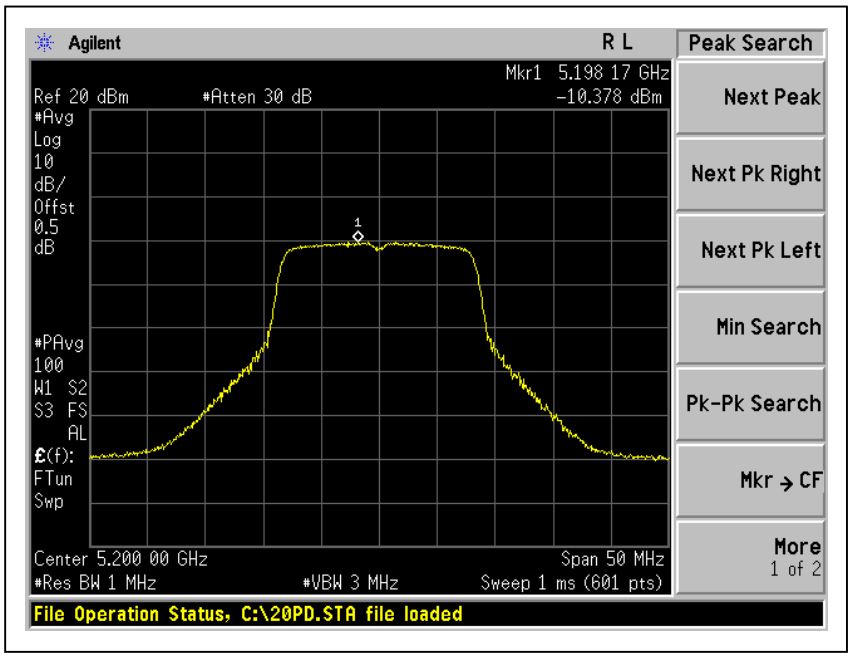
CH4


Agilent
R L
Peak Search
Mkr1 5.241 75 GHz
Ref 20 dBm
#Atten 30 dB
-8.943 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

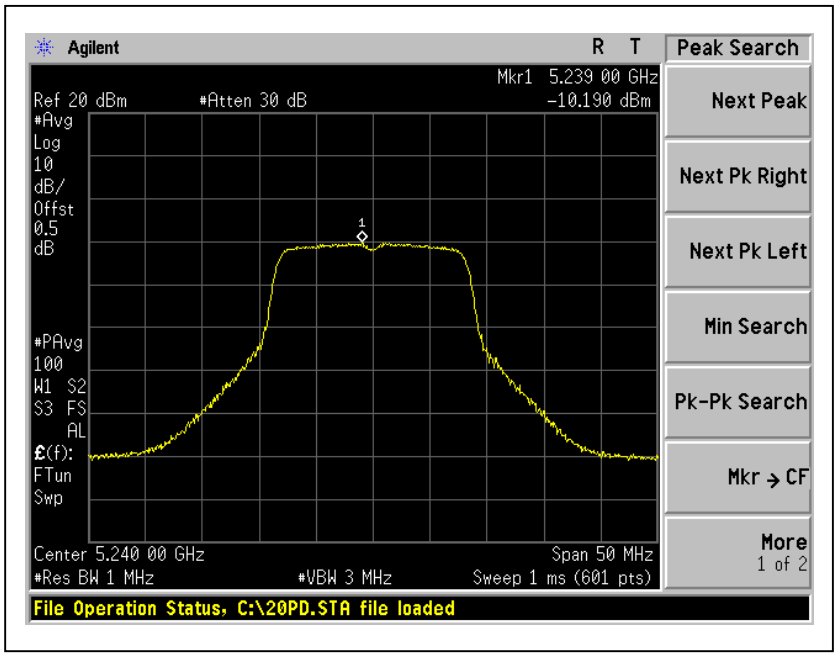
For Chain (1) : CH1



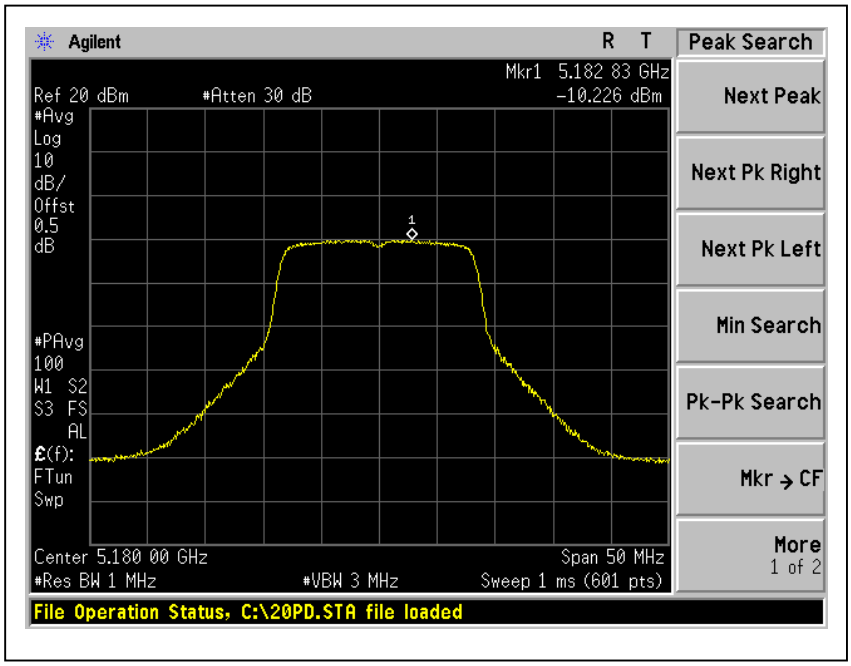
CH2



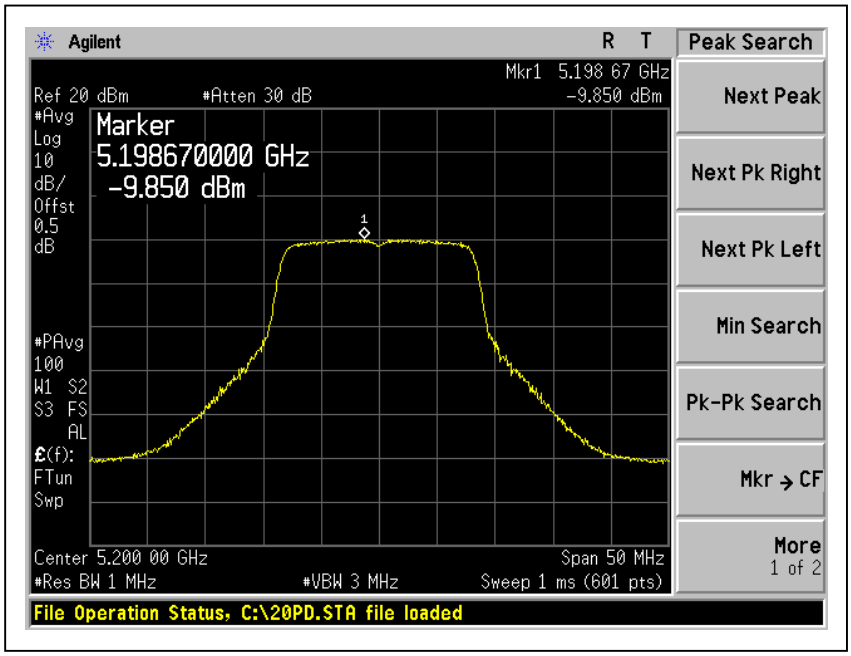
CH4


Agilent
R T
Peak Search
Mkr1 5.239 00 GHz
Ref 20 dBm
#Atten 30 dB
-10.190 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

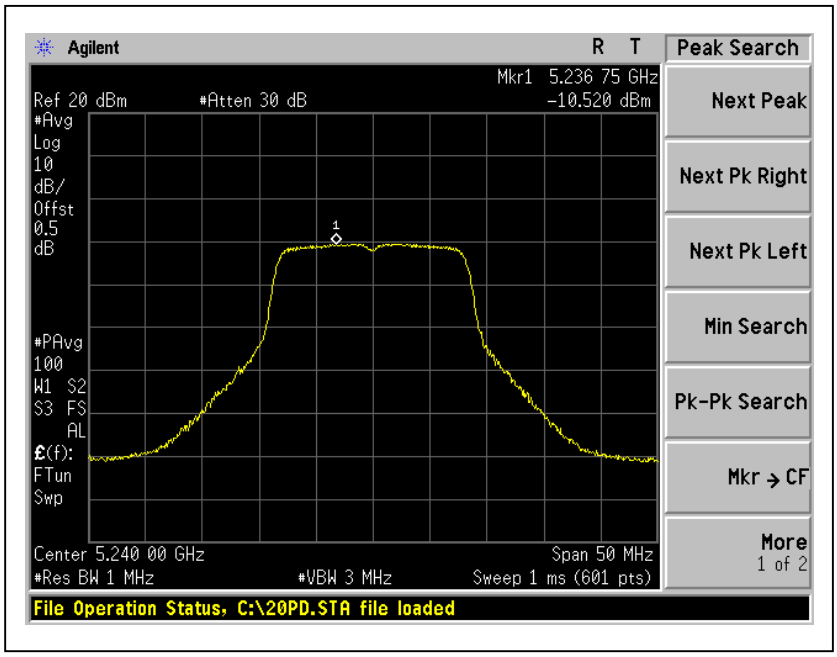
For Chain (2) : CH1



CH2



CH4

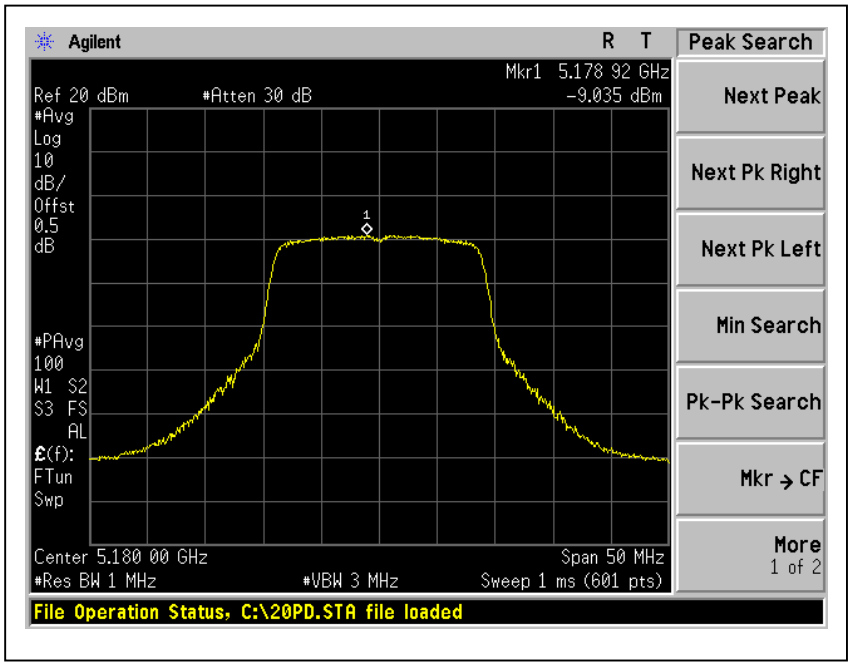

Agilent
R T
Peak Search
Mkr1 5.236 75 GHz
Ref 20 dBm
#Atten 30 dB
-10.520 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (20MHz) OFDM MODULATION:

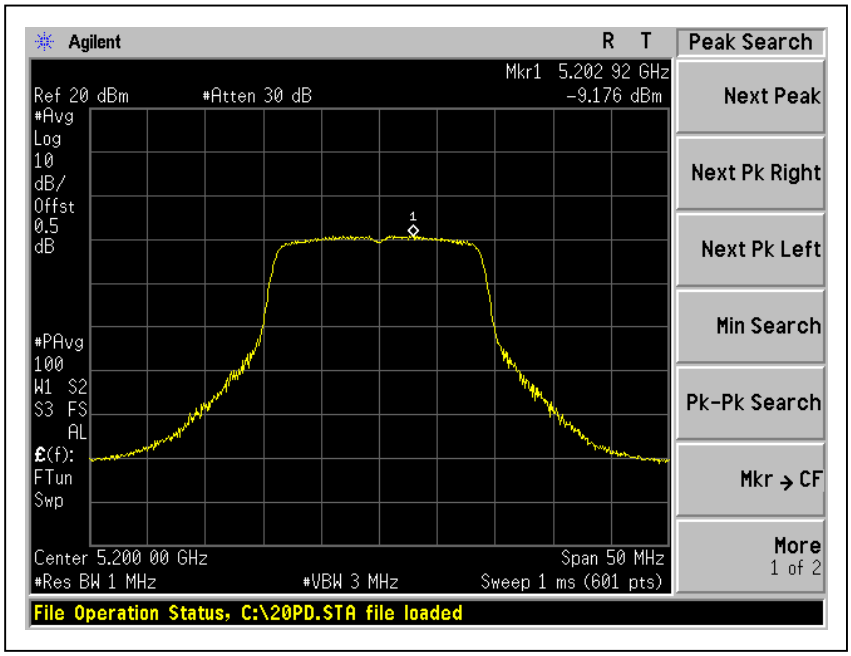
MODULATION TYPE	BPSK	**TRANSFER RATE**	6.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5180	-9.035	-10.726	-9.849	-5.031	-4.5	PASS
2	5200	-9.176	-10.844	-10.231	-5.258	-4.5	PASS
4	5240	-8.710	-10.056	-9.808	-4.698	-4.5	PASS

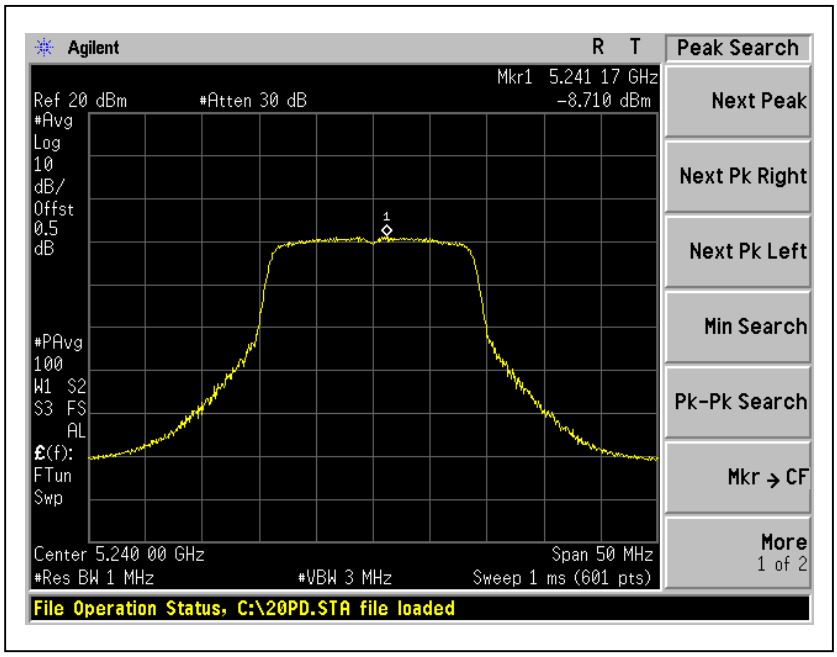
For Chain (0) : CH1



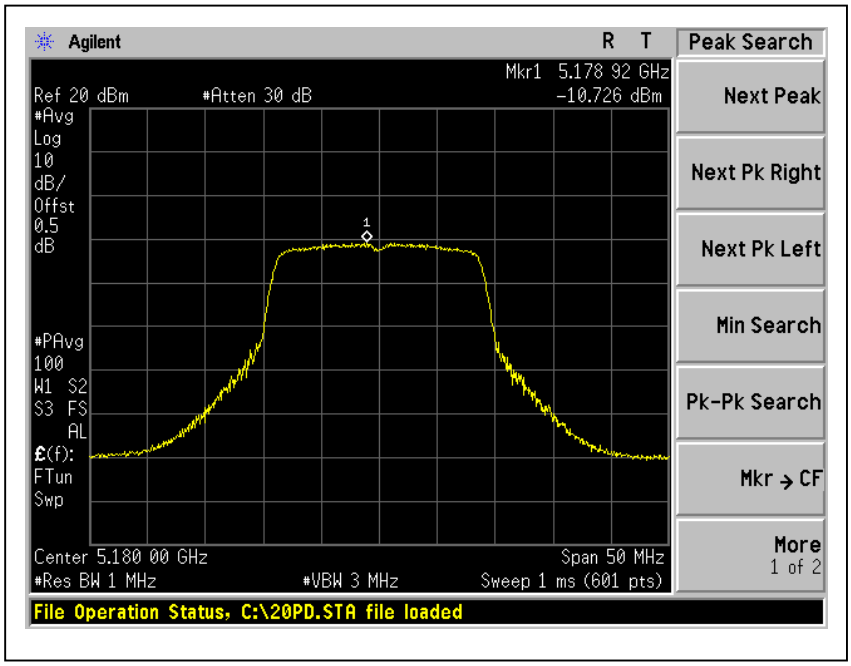
CH2



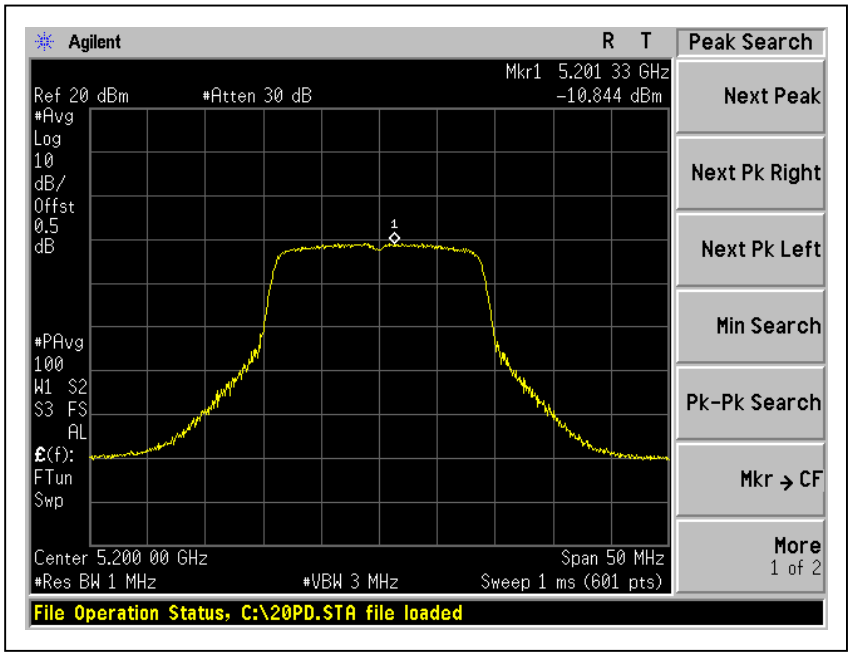
CH4


Agilent
R T
Peak Search
Mkr1 5.241 17 GHz
Ref 20 dBm
#Atten 30 dB
-8.710 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

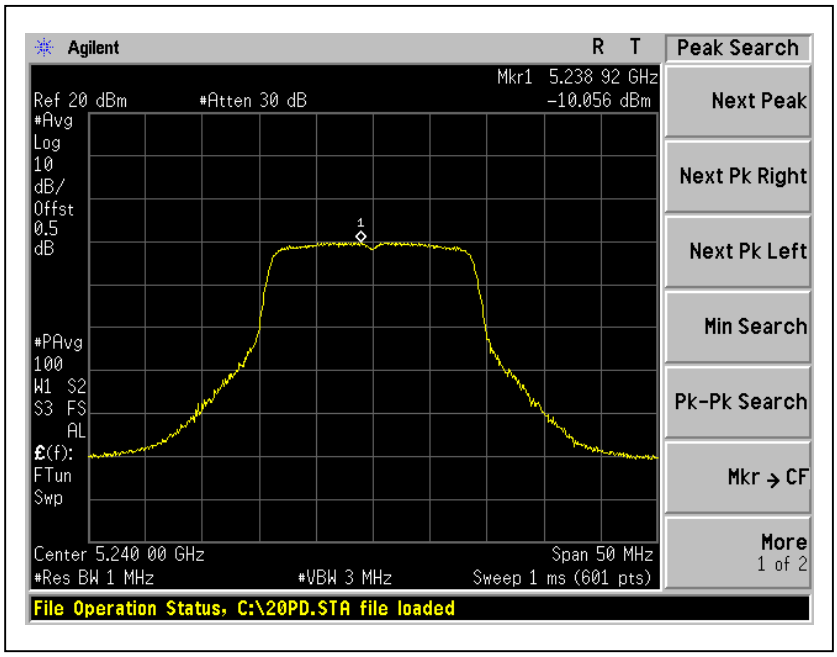
For Chain (1) : CH1



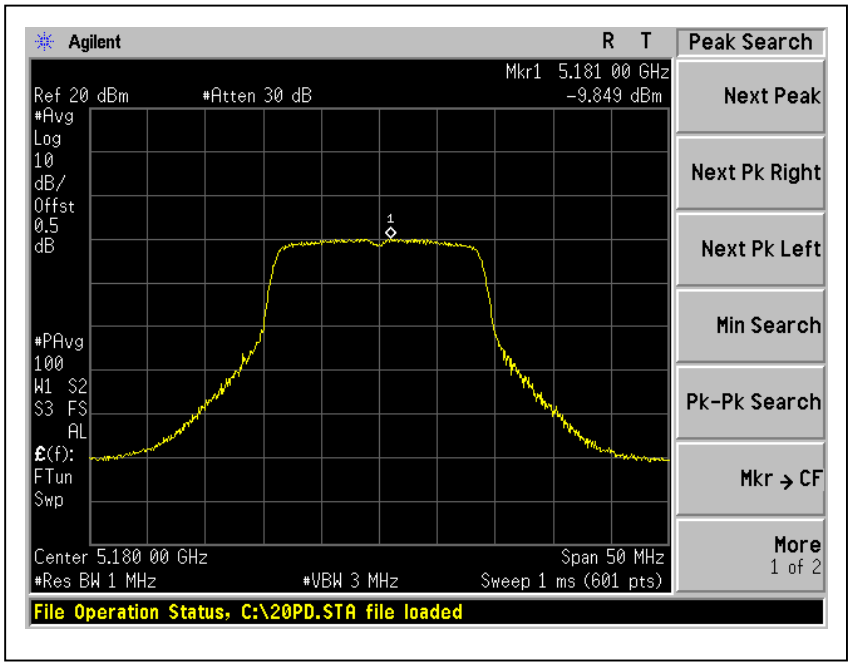
CH2



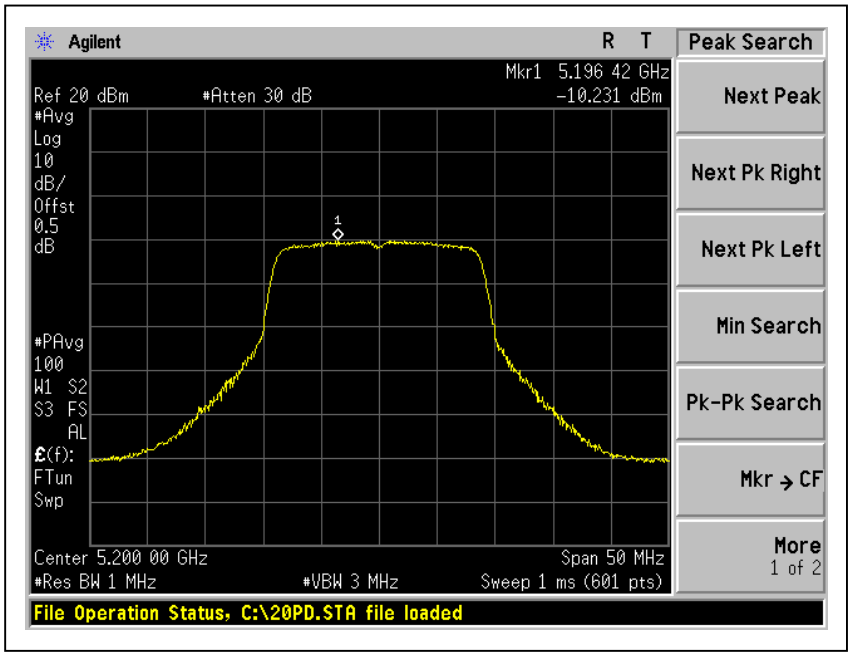
CH4


Agilent
R T
Peak Search
Mkr1 5.238 92 GHz
Ref 20 dBm
#Atten 30 dB
-10.056 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

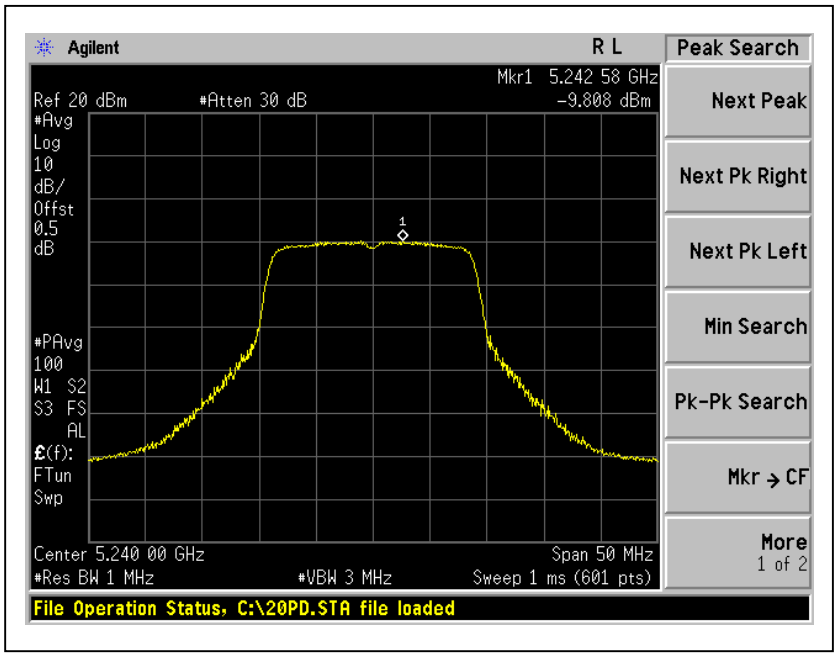
For Chain (2) : CH1



CH2



CH4

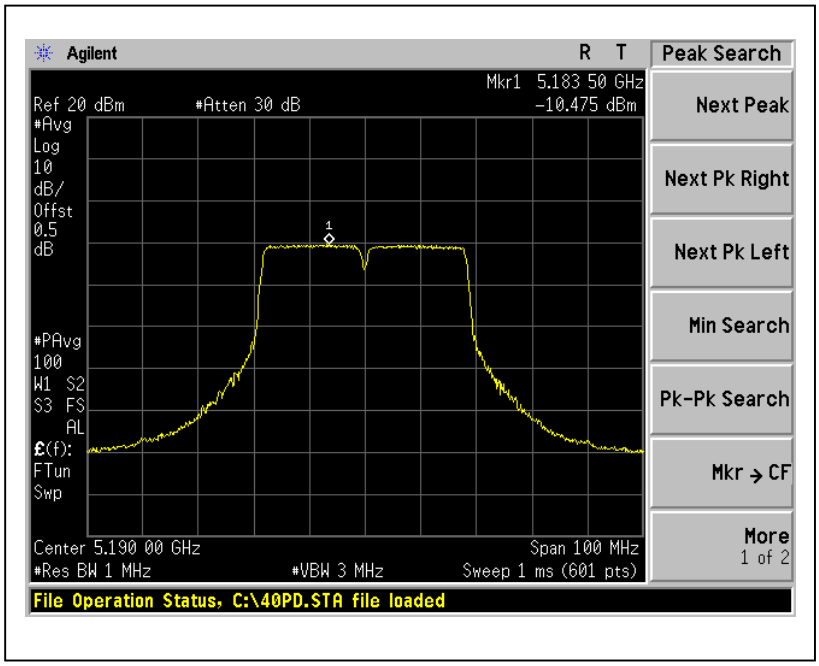

Agilent
R L
Peak Search
Mkr1 5.242 58 GHz
Ref 20 dBm
#Atten 30 dB
-9.808 dBm
Next Peak
#Avg
Log
10
dB/
Offst
0.5
dB
Next Pk Right
Next Pk Left
Min Search
#PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

DRAFT 802.11n (40MHz) OFDM MODULATION:

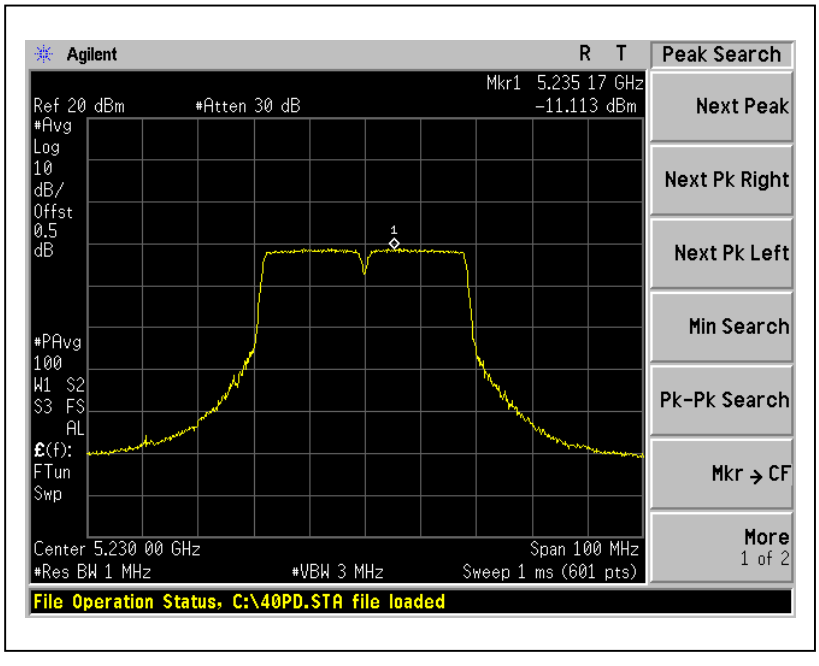
MODULATION TYPE	BPSK	**TRANSFER RATE**	13.5Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)			TOTAL OUTPUT POWER DENSITY (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
		Chain (0)	Chain(1)	Chain(2)			
1	5190	-10.475	-12.239	-11.462	-6.556	-4.5	PASS
2	5230	-11.113	-12.755	-11.772	-7.077	-4.5	PASS

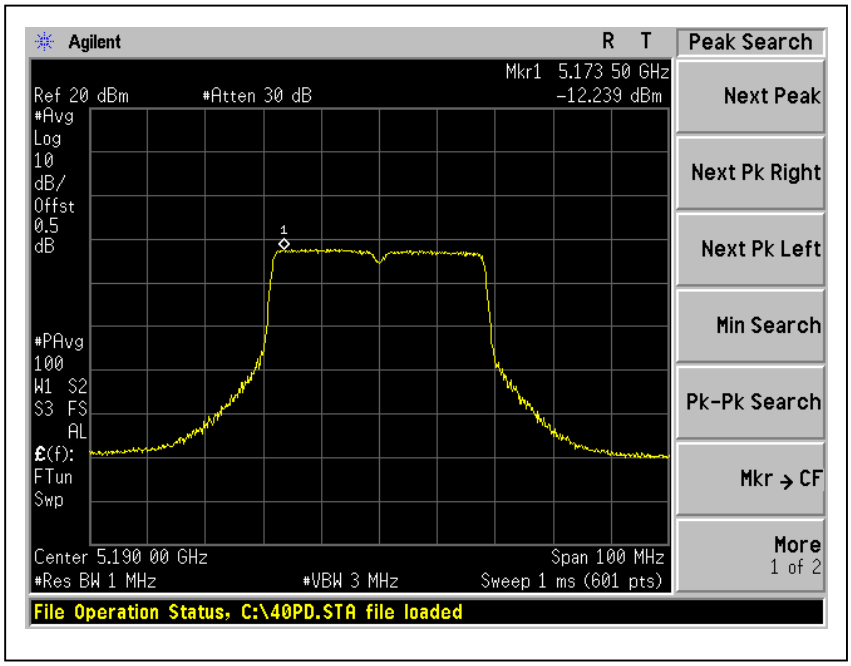
For Chain (0) : CH1



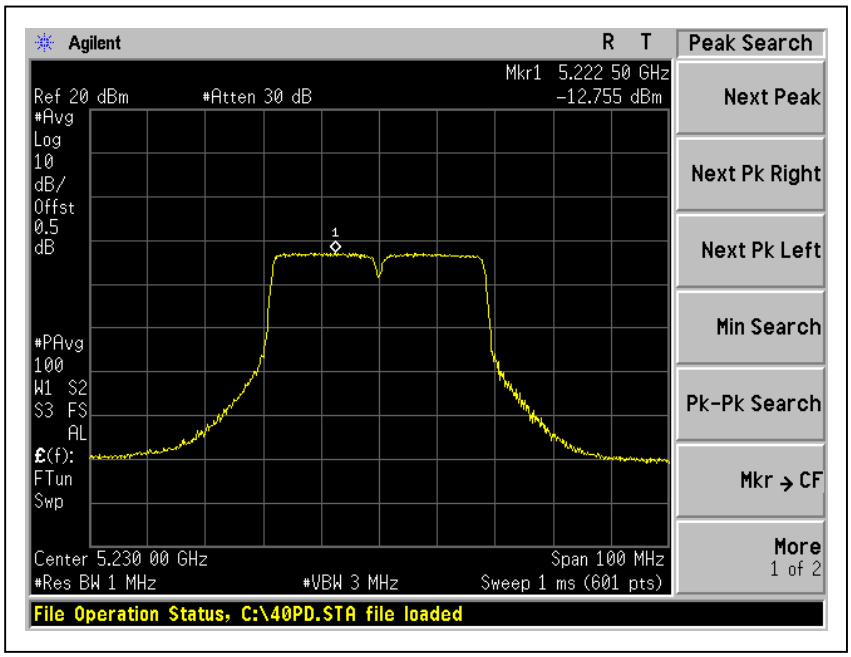
CH2



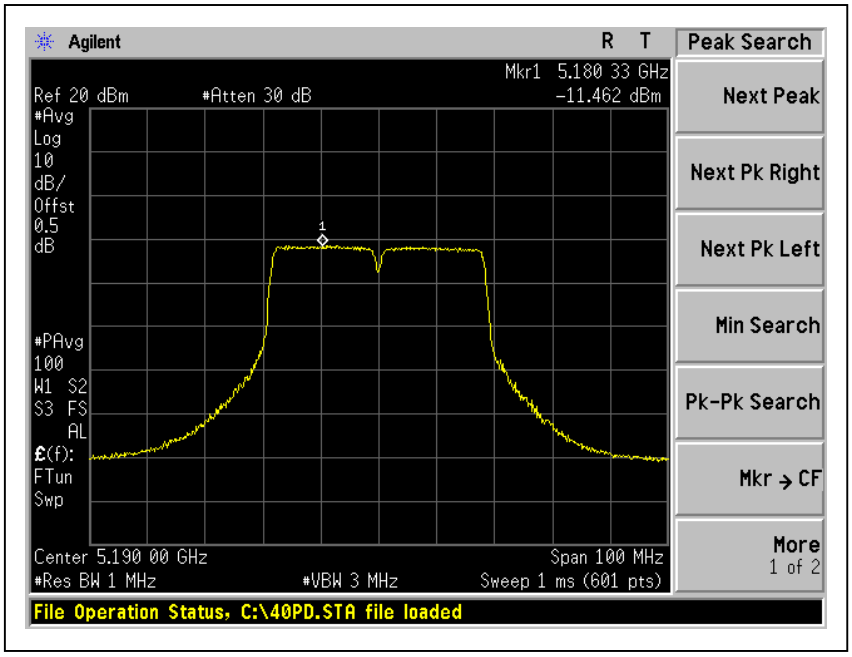
For Chain (1) : CH1



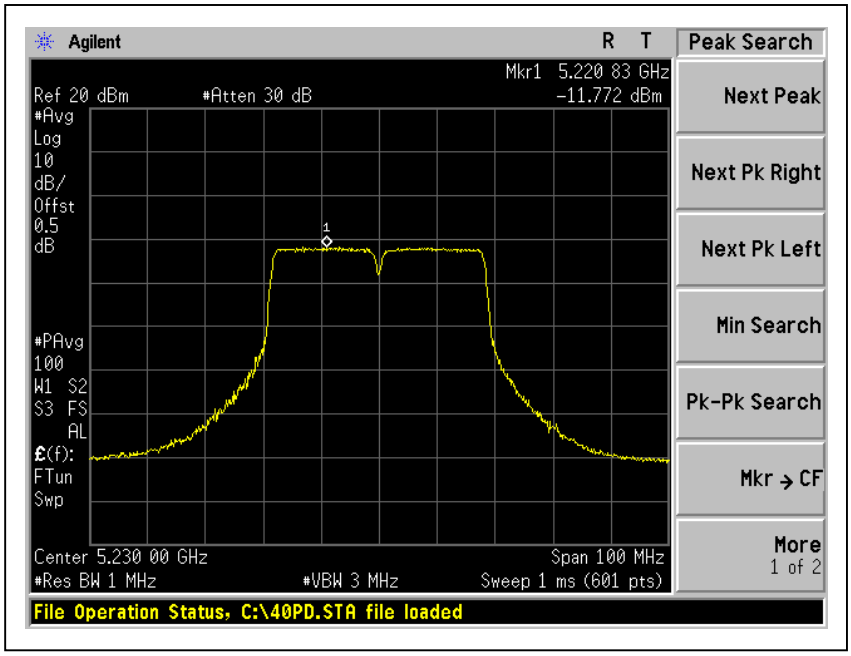
CH2



For Chain (2) : CH1



CH2



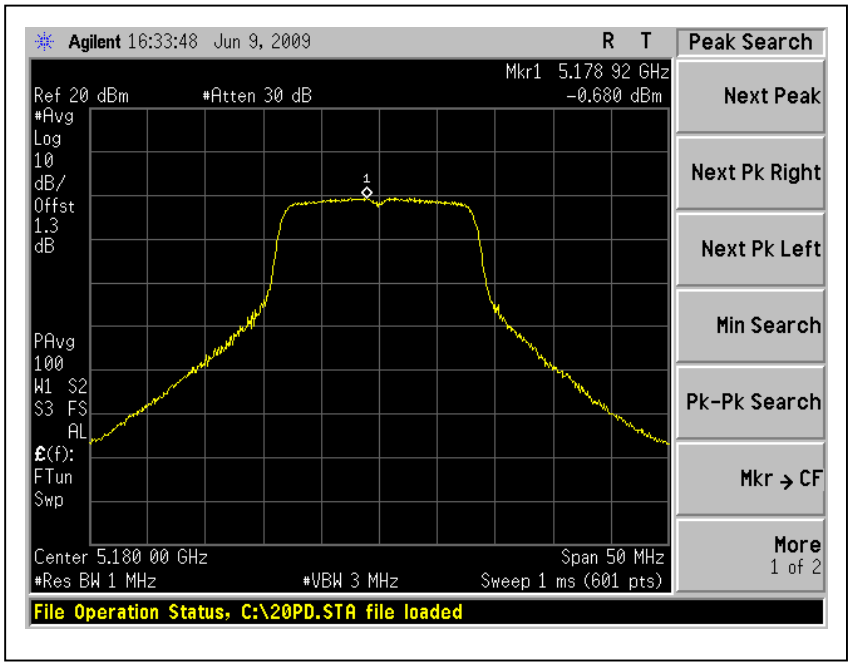
4.5.12 TEST RESULTS-ANTENNA 12

802.11a OFDM modulation

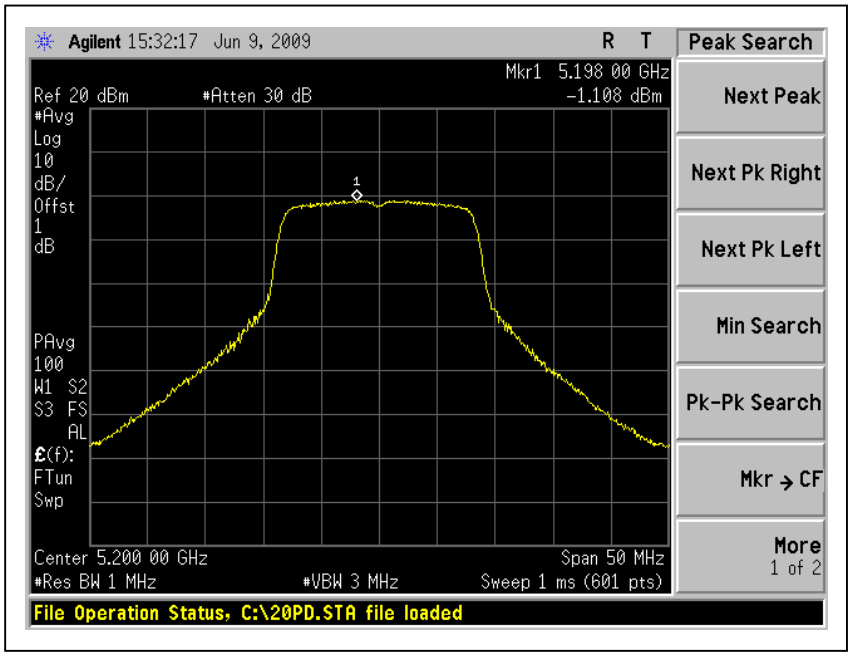
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg.C, 63%RH, 965hPa
TESTED BY	Wen Yu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	-0.68	4	PASS
2	5200	-1.108	4	PASS
4	5240	-0.926	4	PASS

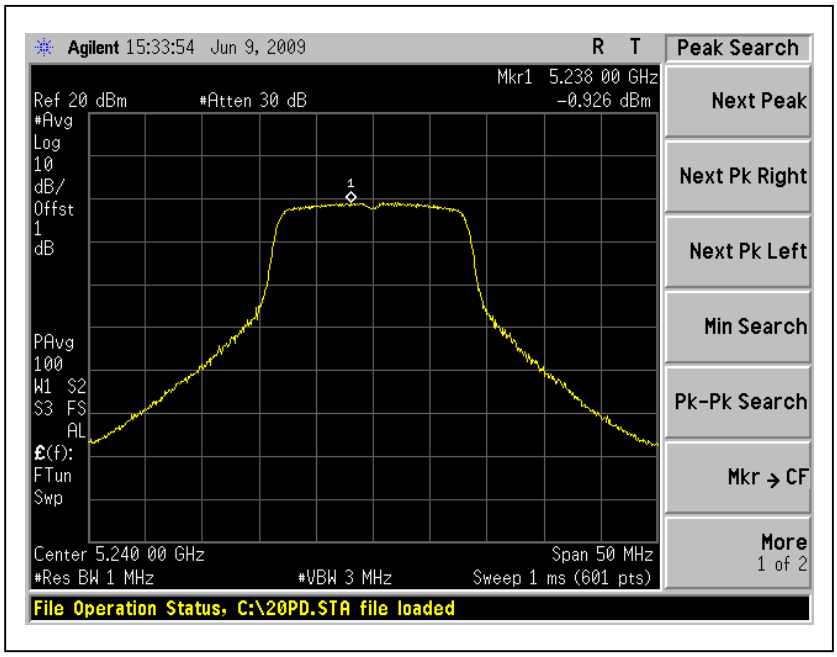
CH1


Agilent 16:33:48 Jun 9, 2009
R T
Peak Search
Mkr1 5.178 92 GHz
Ref 20 dBm
#Atten 30 dB
-0.680 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1.3
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.180 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

CH2


Agilent 15:32:17 Jun 9, 2009
R T
Peak Search
Mkr1 5.198 00 GHz
Ref 20 dBm
#Atten 30 dB
-1.108 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
Center 5.200 00 GHz
Span 50 MHz
More
1 of 2
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

CH4


Agilent 15:33:54 Jun 9, 2009
R T
Peak Search
Mkr1 5.238 00 GHz
Ref 20 dBm
#Atten 30 dB
-0.926 dBm
Next Peak
#Avg
Log
10
dB/
Offst
1
dB
Next Pk Right
Next Pk Left
Min Search
PAvg
100
W1 S2
S3 FS
AL
£(f):
FTun
Swp
Pk-Pk Search
Mkr → CF
More
1 of 2
Center 5.240 00 GHz
Span 50 MHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 1 ms (601 pts)
File Operation Status, C:\20PD.STA file loaded

4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within +/- 0.02% of the operating frequency over a temperature variation of –30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

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

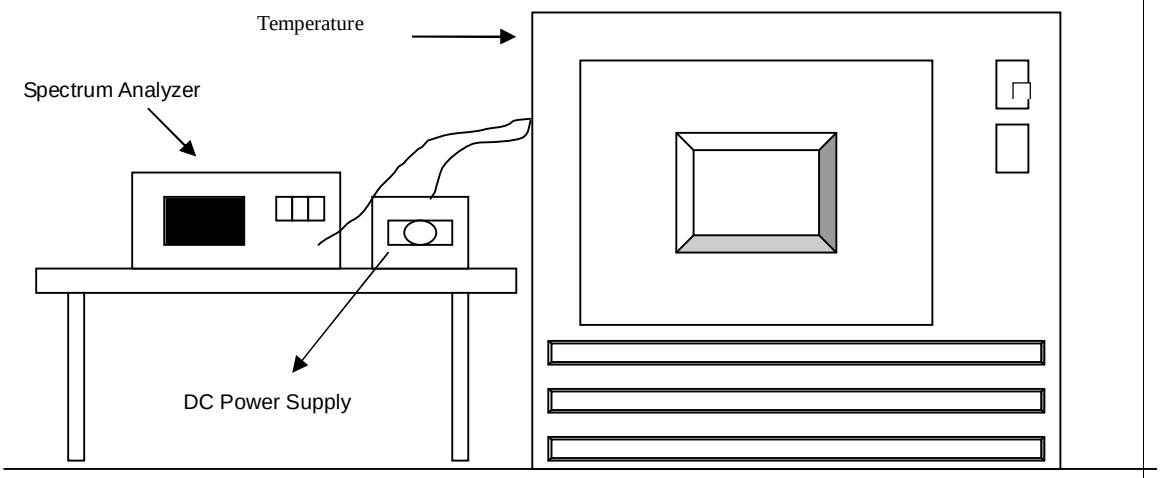
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.6.7 TEST RESULTS

Operating frequency: 5320MHz				Limit : ± 0.02%			
Temp. (℃)	Power supply (VAC)	2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	126.5	5319.9744	0.000481	5319.9756	0.000459	5319.9763	0.000445
	110	5319.9746	0.000477	5319.9758	0.000455	5319.9763	0.000445
	93.5	5319.9748	0.000474	5319.9757	0.000457	5319.9766	0.000440
40	126.5	5319.9768	0.000436	5319.9779	0.000415	5319.9788	0.000398
	110	5319.9766	0.000440	5319.9777	0.000419	5319.9785	0.000404
	93.5	5319.9768	0.000436	5319.9782	0.000410	5319.9789	0.000397
30	126.5	5319.9943	0.000107	5319.9938	0.000117	5319.9941	0.000111
	110	5319.9944	0.000105	5319.9942	0.000109	5319.9945	0.000103
	93.5	5319.9943	0.000107	5319.9938	0.000117	5319.9941	0.000111
20	126.5	5319.9766	0.000440	5319.9777	0.000419	5319.9888	0.000211
	110	5319.9768	0.000436	5319.9778	0.000417	5319.9885	0.000216
	93.5	5319.9766	0.000440	5319.9775	0.000423	5319.9881	0.000224
10	126.5	5319.9753	0.000464	5319.9846	0.000289	5319.9849	0.000284
	110	5319.9754	0.000462	5319.9846	0.000289	5319.9851	0.000280
	93.5	5319.9853	0.000276	5319.9849	0.000284	5319.9848	0.000286
0	126.5	5319.9988	0.000023	5319.9981	0.000036	5319.9984	0.000030
	110	5319.9788	0.000398	5319.9766	0.000440	5319.9753	0.000464
	93.5	5319.9768	0.000436	5319.9777	0.000419	5319.9775	0.000423
-10	126.5	5319.9896	0.000195	5319.9892	0.000203	5319.9895	0.000197
	110	5319.9896	0.000195	5319.9882	0.000222	5319.9897	0.000194
	93.5	5319.9896	0.000195	5319.9891	0.000205	5319.9894	0.000199
-20	126.5	5319.9836	0.000308	5319.9842	0.000297	5319.9848	0.000286
	110	5319.9832	0.000316	5319.9845	0.000291	5319.9850	0.000282
	93.5	5319.9838	0.000305	5319.9844	0.000293	5319.9852	0.000278
-30	126.5	5319.9976	0.000045	5319.9983	0.000032	5319.9987	0.000024
	110	5319.9977	0.000043	5319.9983	0.000032	5319.9980	0.000038
	93.5	5319.9975	0.000047	5319.9978	0.000041	5319.9982	0.000034

4.7 CONDUCTED OUT-BAND EMISSION MEASUREMENT

4.7.1 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSP40	100037	Aug. 09, 2008	Aug. 08, 2009

NOTE:

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

4.7.2 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set RBW of spectrum analyzer to 1MHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.7.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

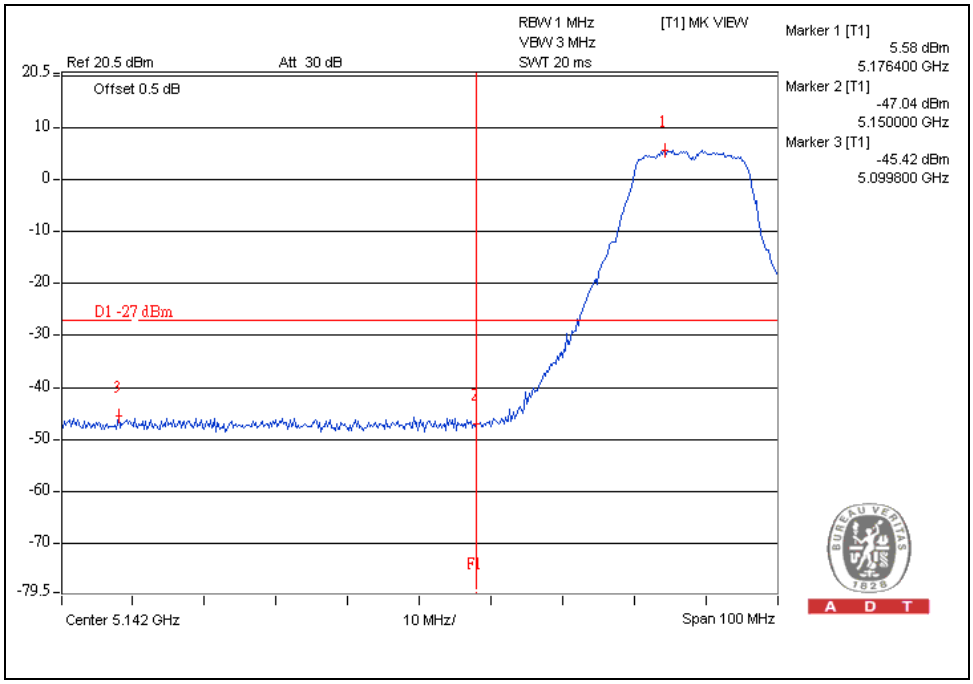
4.7.4 TEST RESULTS-ANTENNA 4

For 5.15 to 5.25GHz band:

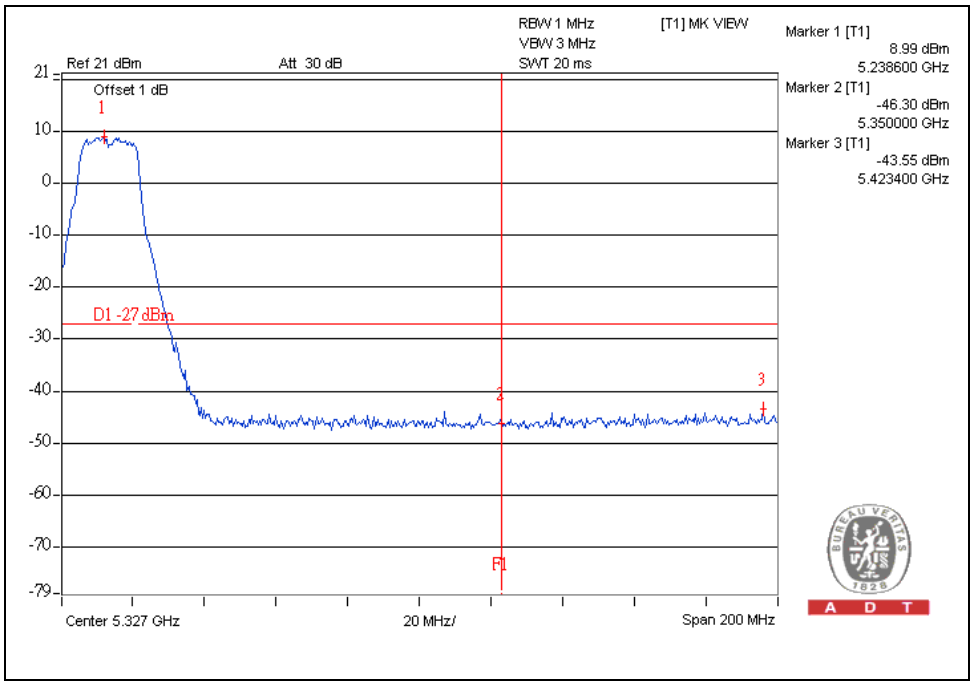
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

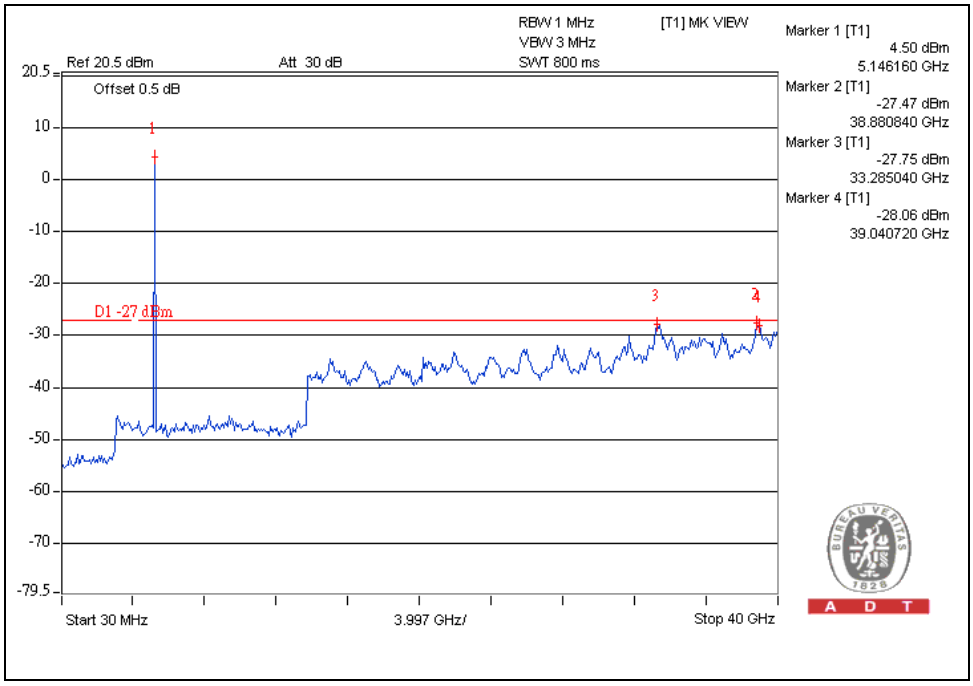
CH 1



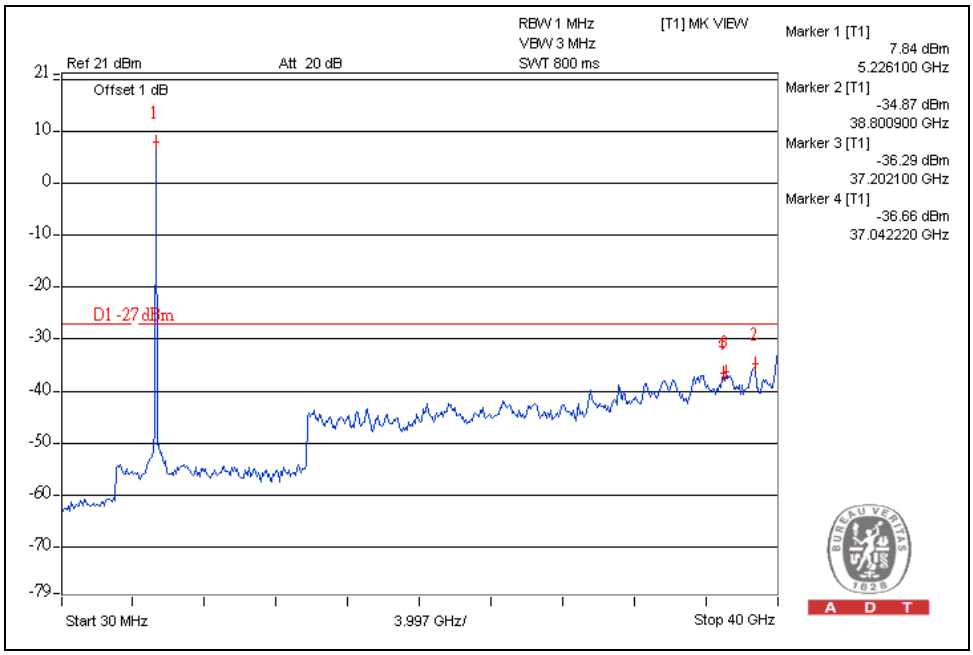
CH 4



CH 1

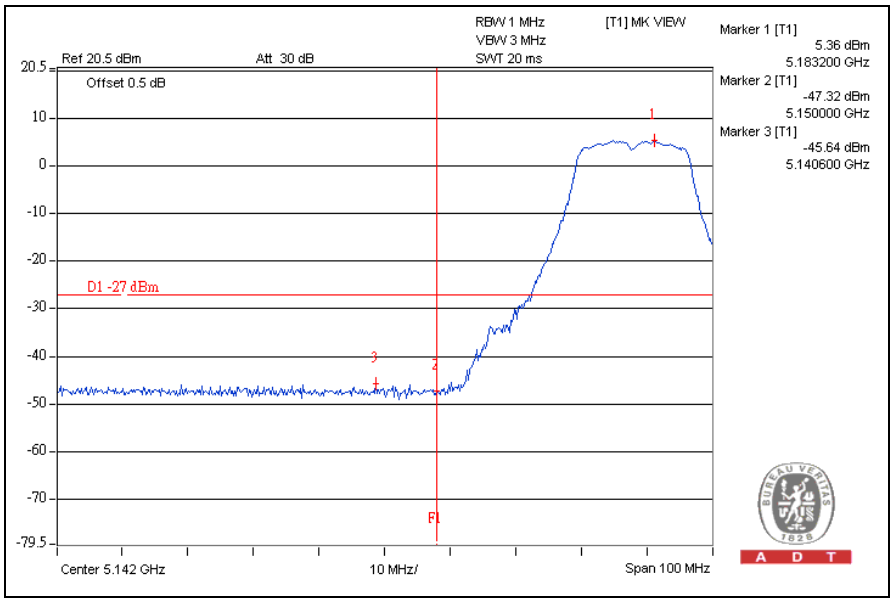

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
4.50 dBm
5.146160 GHz
Marker 2 [T1]
-27.47 dBm
38.880840 GHz
Marker 3 [T1]
-27.75 dBm
33.285040 GHz
Marker 4 [T1]
-28.06 dBm
39.040720 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH 4

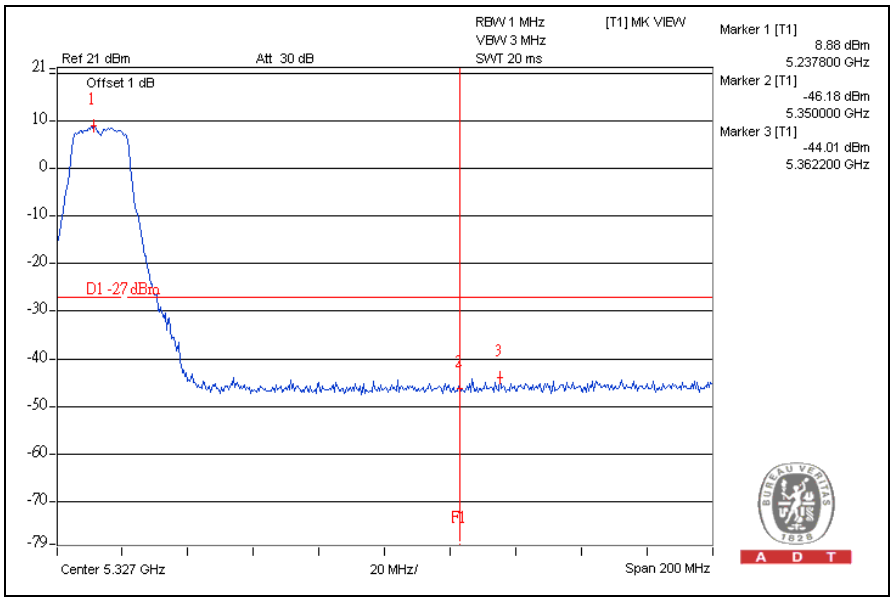

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.84 dBm
5.226100 GHz
Marker 2 [T1]
-34.87 dBm
38.800900 GHz
Marker 3 [T1]
-36.29 dBm
37.202100 GHz
Marker 4 [T1]
-36.66 dBm
37.042220 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (20MHz) OFDM MODULATION:

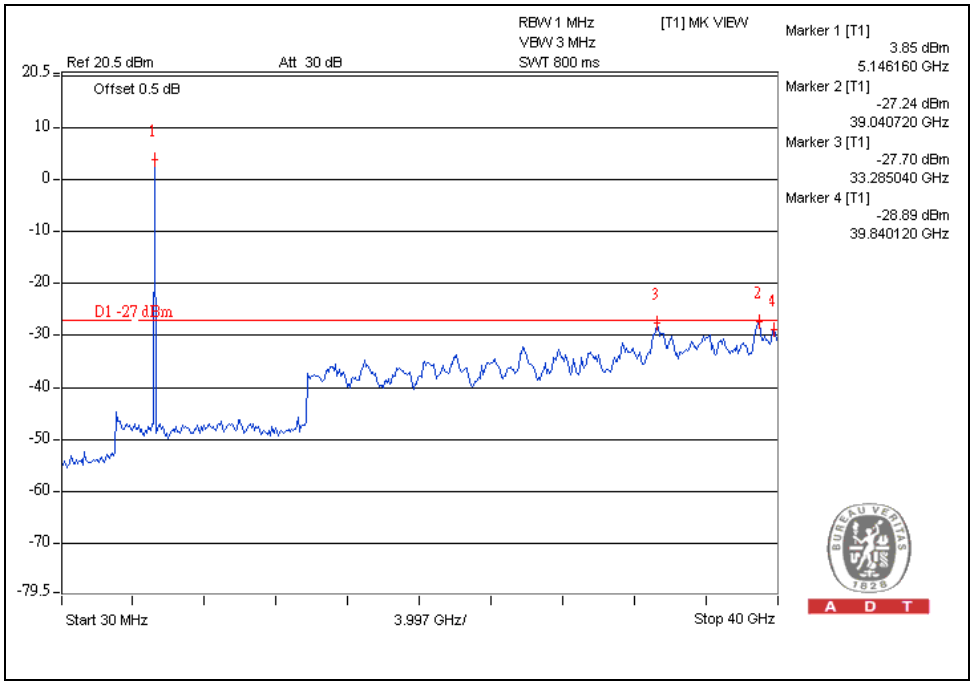
CH1



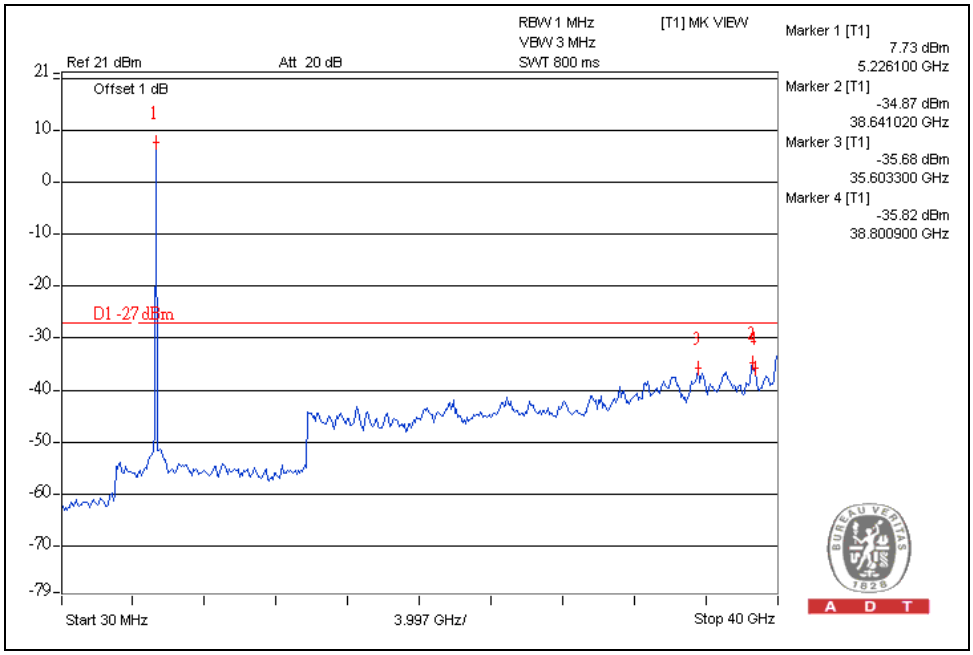
CH4



CH1

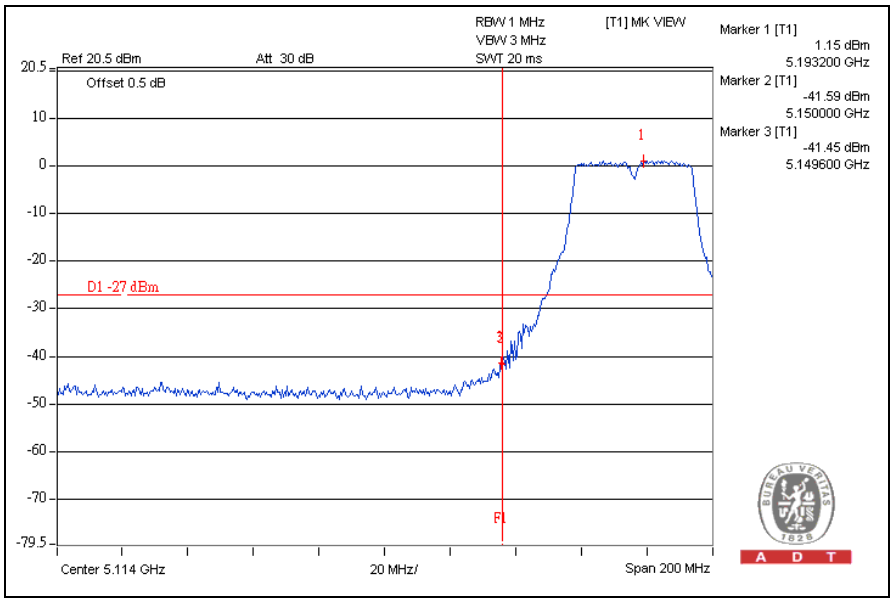

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
3.85 dBm
5.146160 GHz
Marker 2 [T1]
-27.24 dBm
39.040720 GHz
Marker 3 [T1]
-27.70 dBm
33.285040 GHz
Marker 4 [T1]
-28.89 dBm
39.840120 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH4

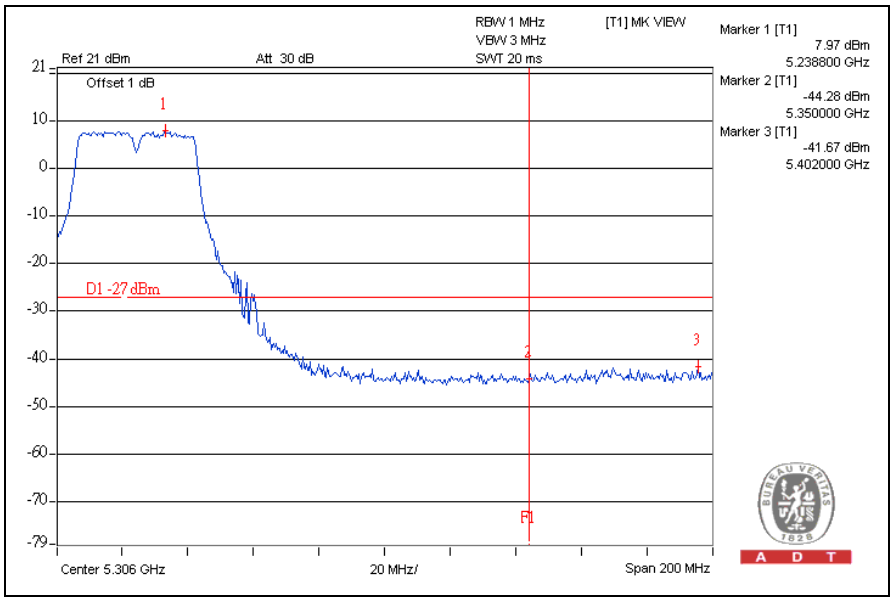

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.73 dBm
5.226100 GHz
Marker 2 [T1]
-34.87 dBm
38.641020 GHz
Marker 3 [T1]
-35.68 dBm
35.603300 GHz
Marker 4 [T1]
-35.82 dBm
38.800900 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (40MHz) OFDM MODULATION:

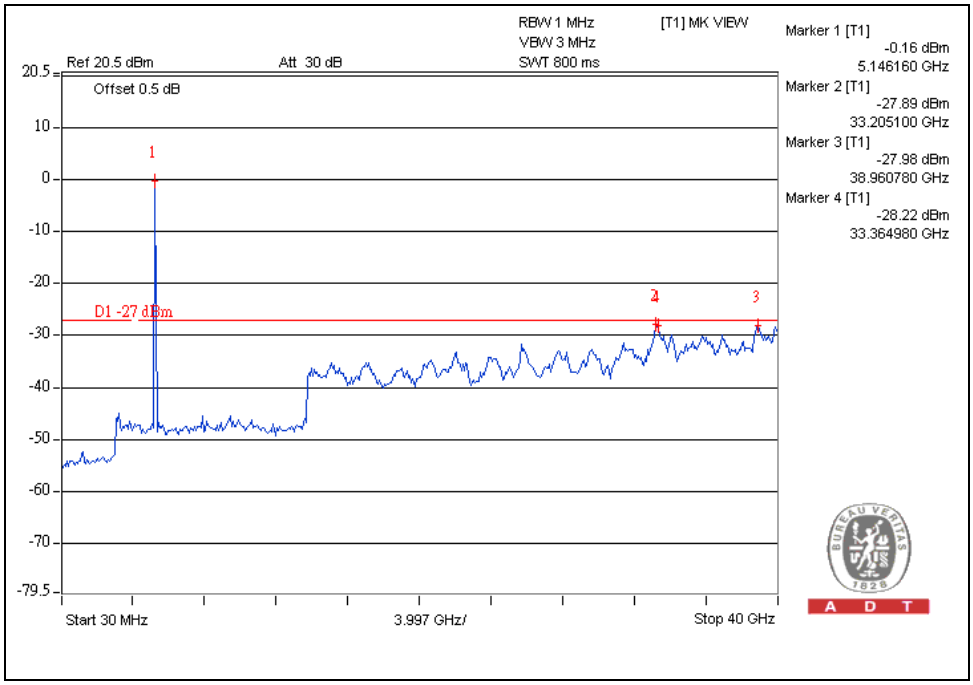
CH1



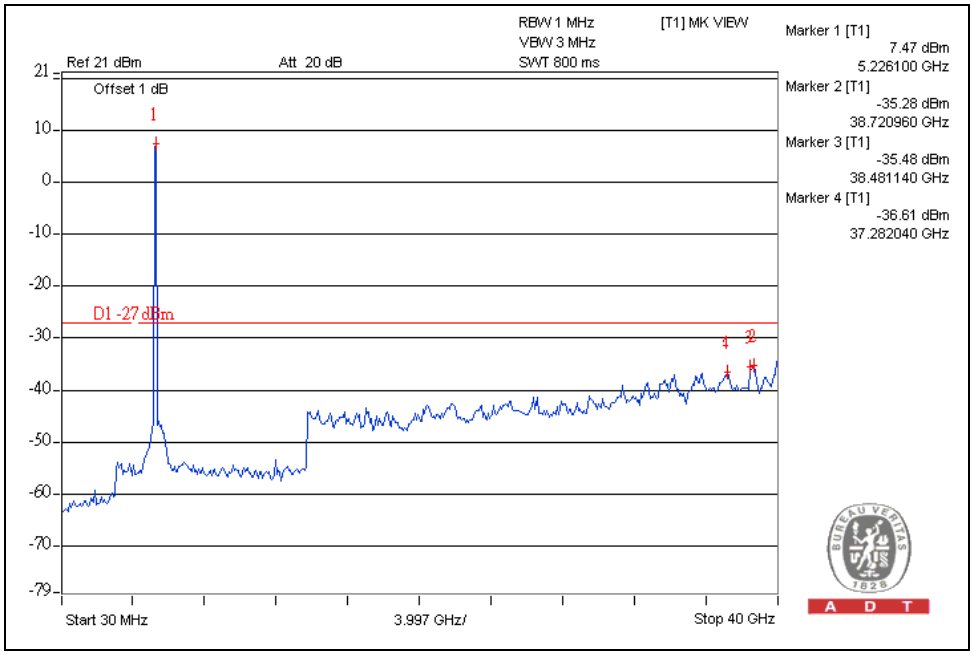
CH2



CH1


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
-0.16 dBm
5.146160 GHz
Marker 2 [T1]
-27.89 dBm
33.205100 GHz
Marker 3 [T1]
-27.98 dBm
38.960780 GHz
Marker 4 [T1]
-28.22 dBm
33.364980 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH2

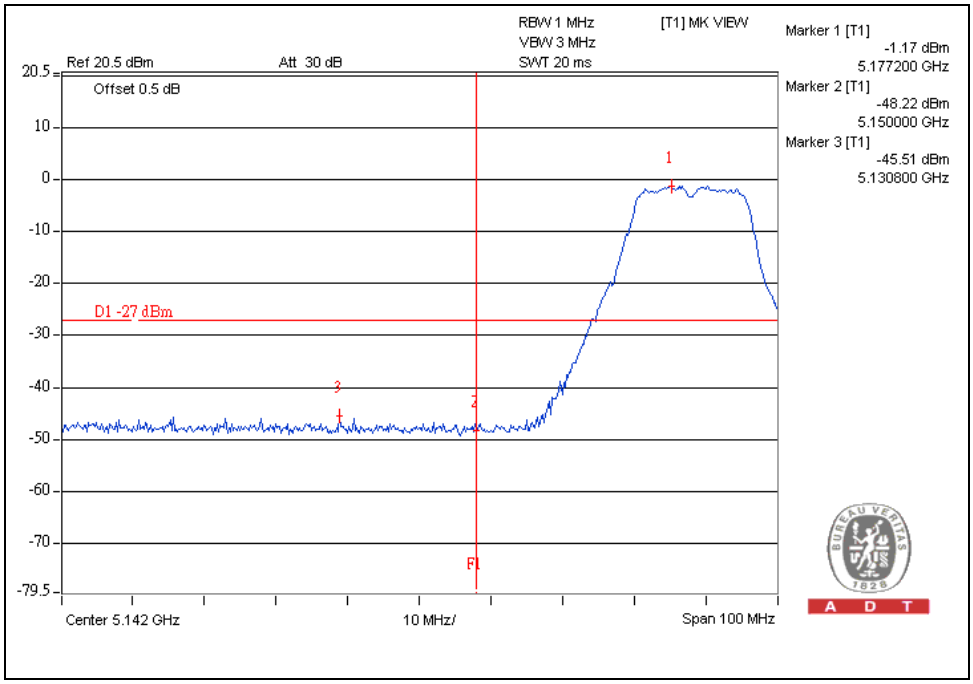

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.47 dBm
5.226100 GHz
Marker 2 [T1]
-35.28 dBm
38.720960 GHz
Marker 3 [T1]
-35.48 dBm
38.481140 GHz
Marker 4 [T1]
-36.61 dBm
37.282040 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

4.7.5 TEST RESULTS-ANTENNA 5

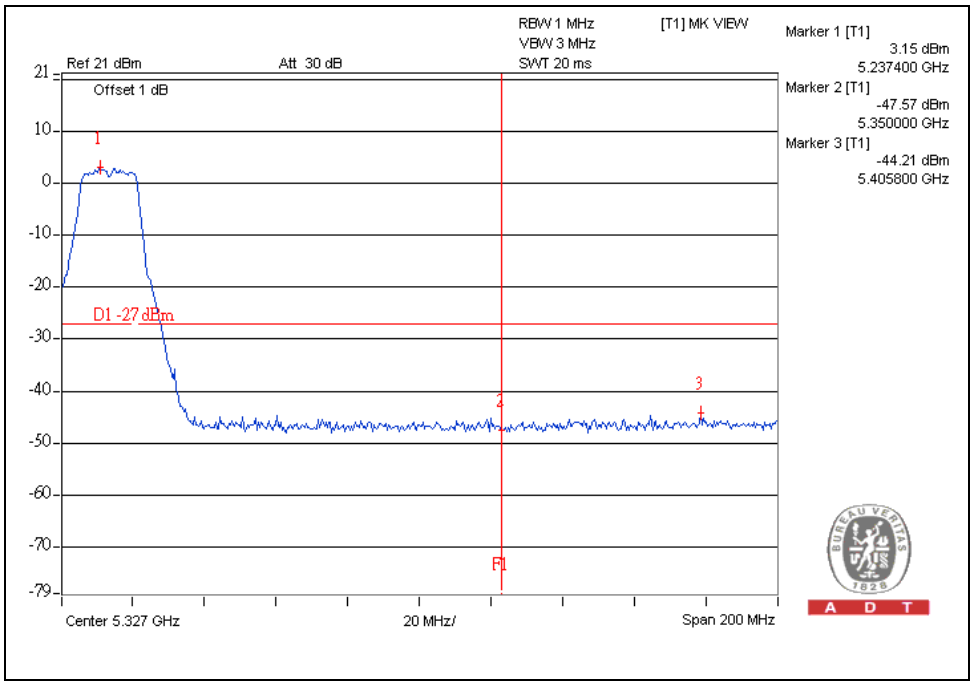
For 5.15 to 5.25GHz band:
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

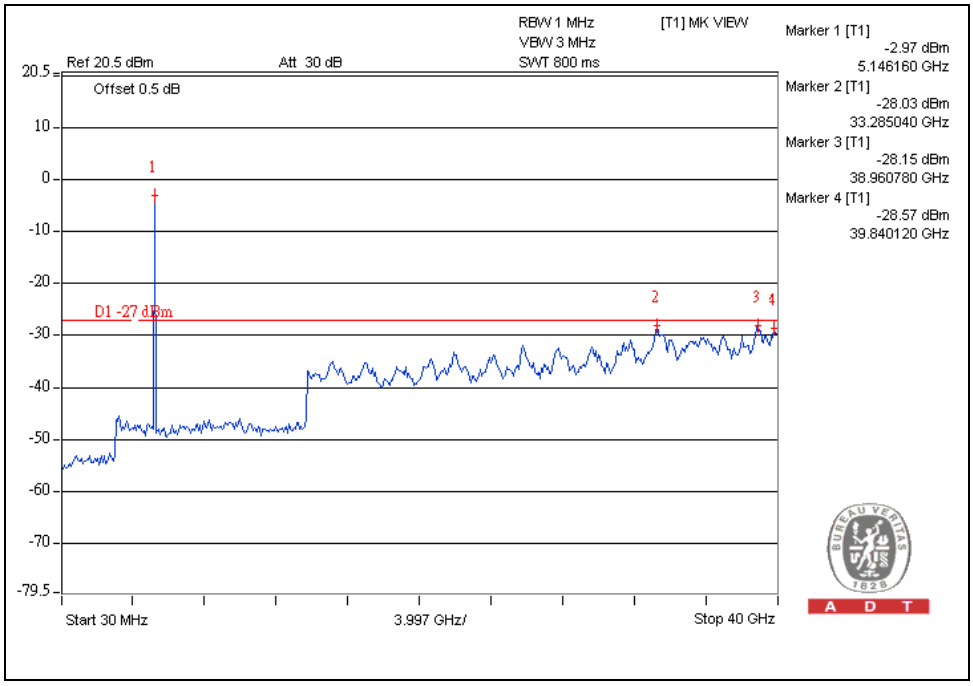
CH 1



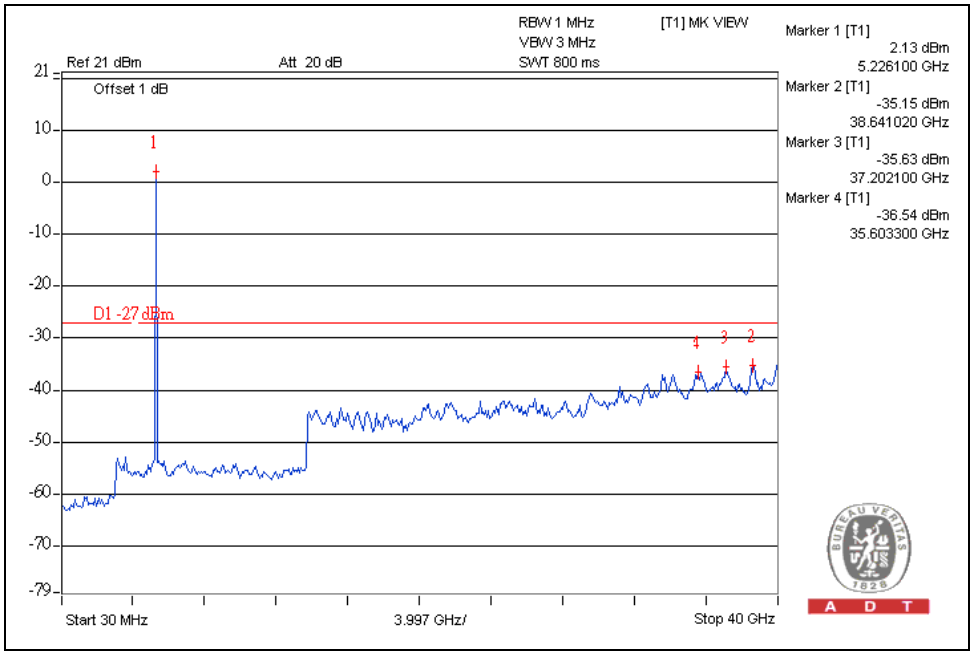
CH 4



CH 1

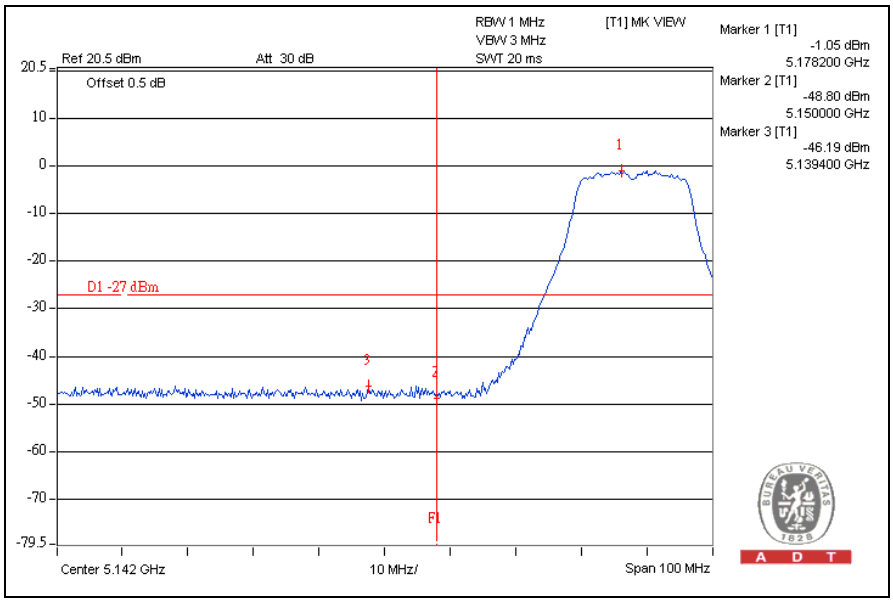

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
-2.97 dBm
5.146160 GHz
Marker 2 [T1]
-28.03 dBm
33.285040 GHz
Marker 3 [T1]
-28.15 dBm
38.960780 GHz
Marker 4 [T1]
-28.57 dBm
39.840120 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH 4

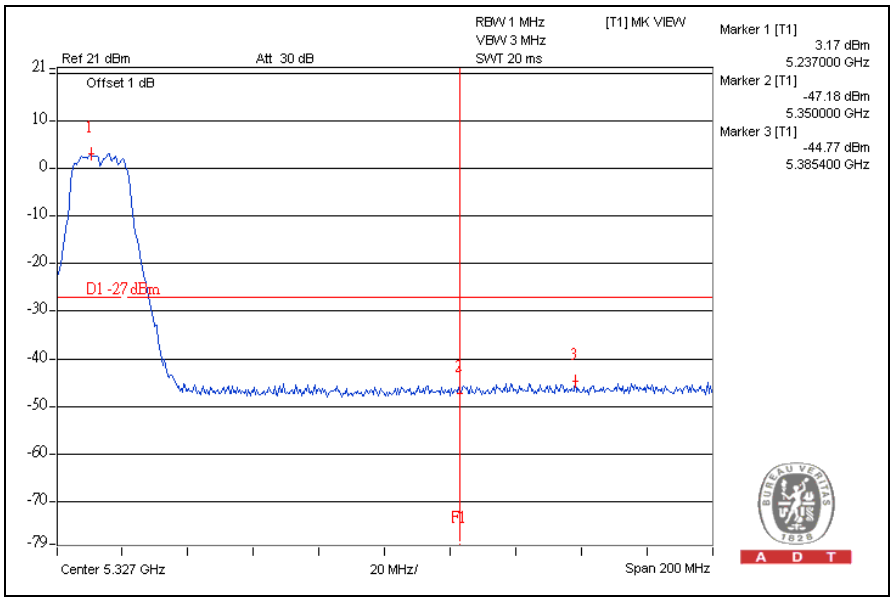

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
2.13 dBm
5.226100 GHz
Marker 2 [T1]
-35.15 dBm
38.641020 GHz
Marker 3 [T1]
-35.63 dBm
37.202100 GHz
Marker 4 [T1]
-36.54 dBm
35.603300 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (20MHz) OFDM MODULATION:

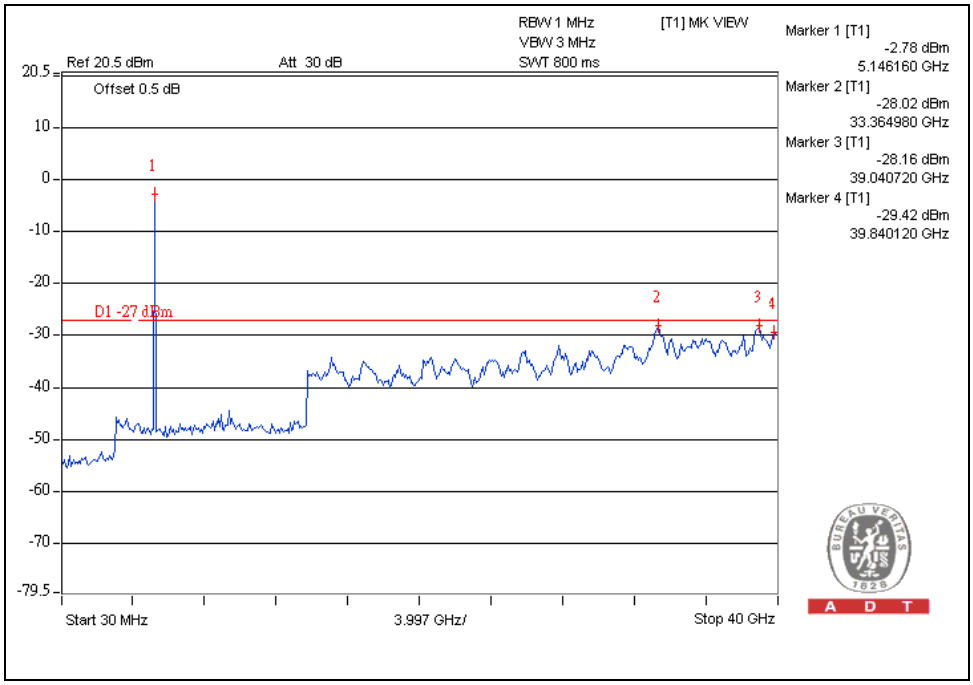
CH1



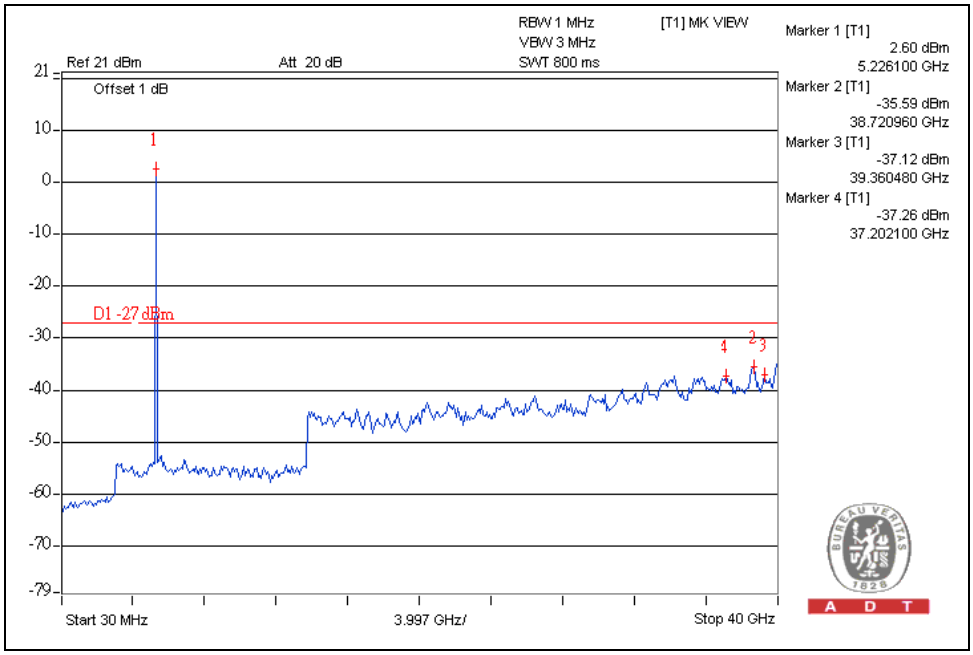
CH4



CH1

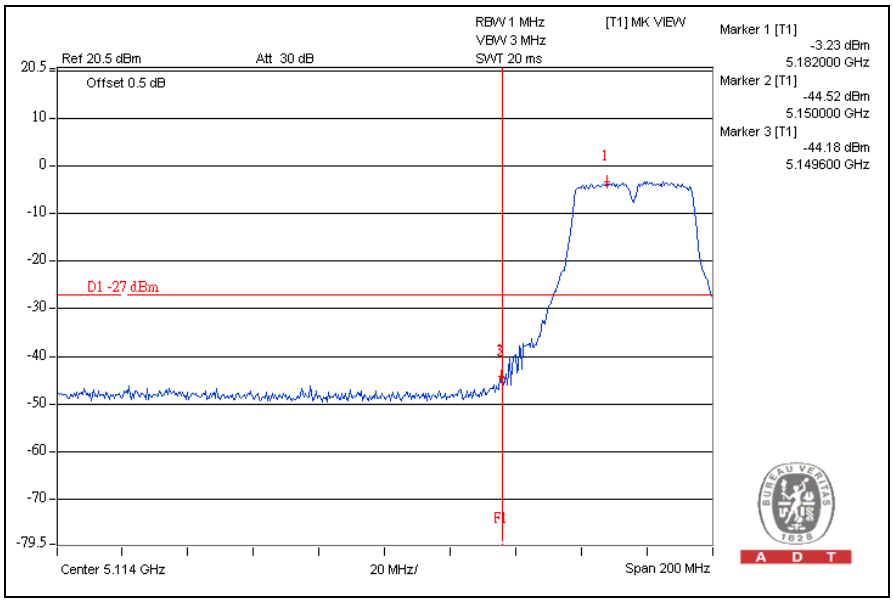

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
-2.78 dBm
5.146160 GHz
Marker 2 [T1]
-28.02 dBm
33.364980 GHz
Marker 3 [T1]
-28.16 dBm
39.040720 GHz
Marker 4 [T1]
-29.42 dBm
39.840120 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH4

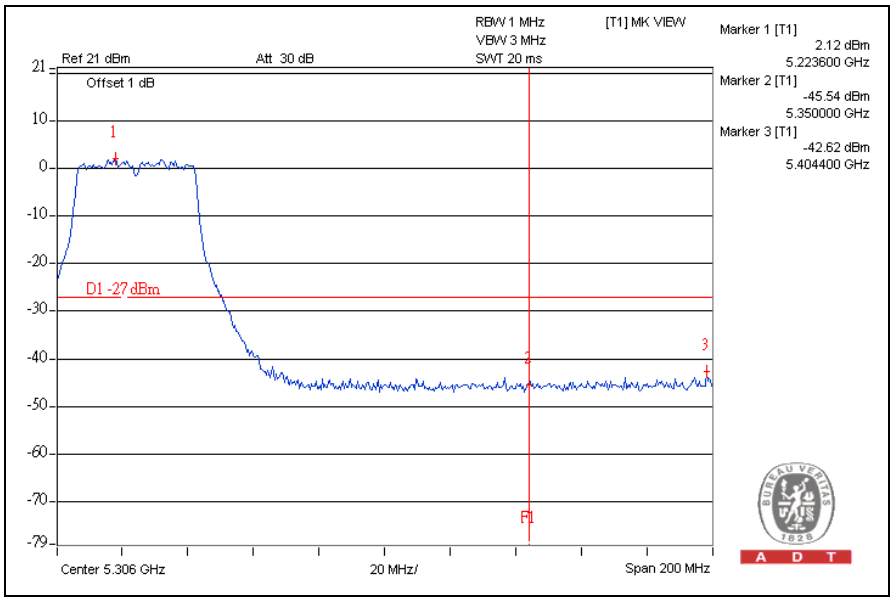

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
2.60 dBm
5.226100 GHz
Marker 2 [T1]
-35.59 dBm
38.720960 GHz
Marker 3 [T1]
-37.12 dBm
39.360480 GHz
Marker 4 [T1]
-37.26 dBm
37.202100 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (40MHz) OFDM MODULATION:

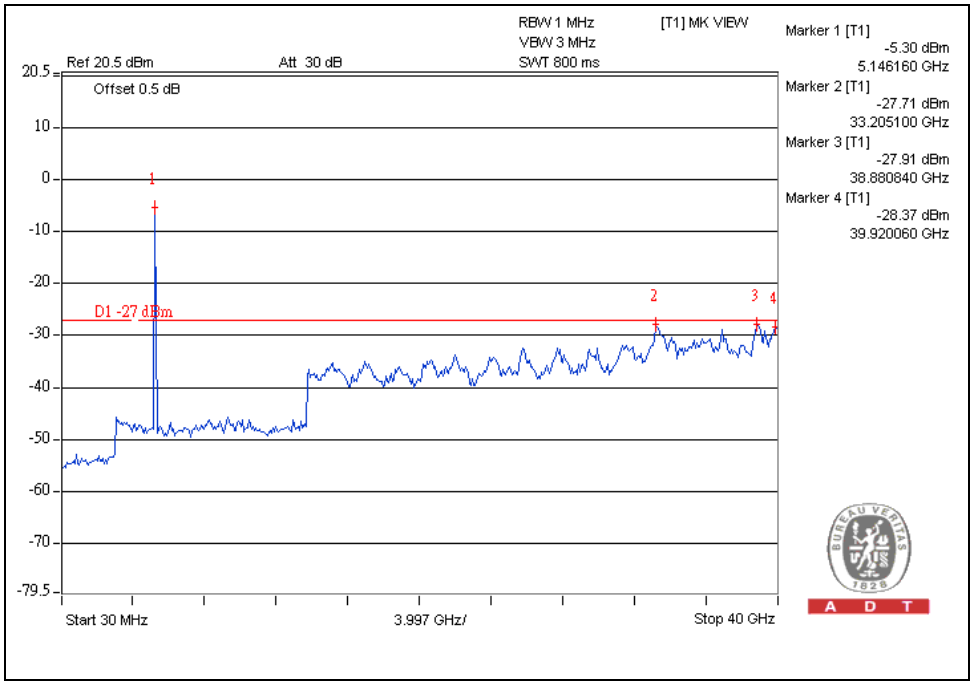
CH1



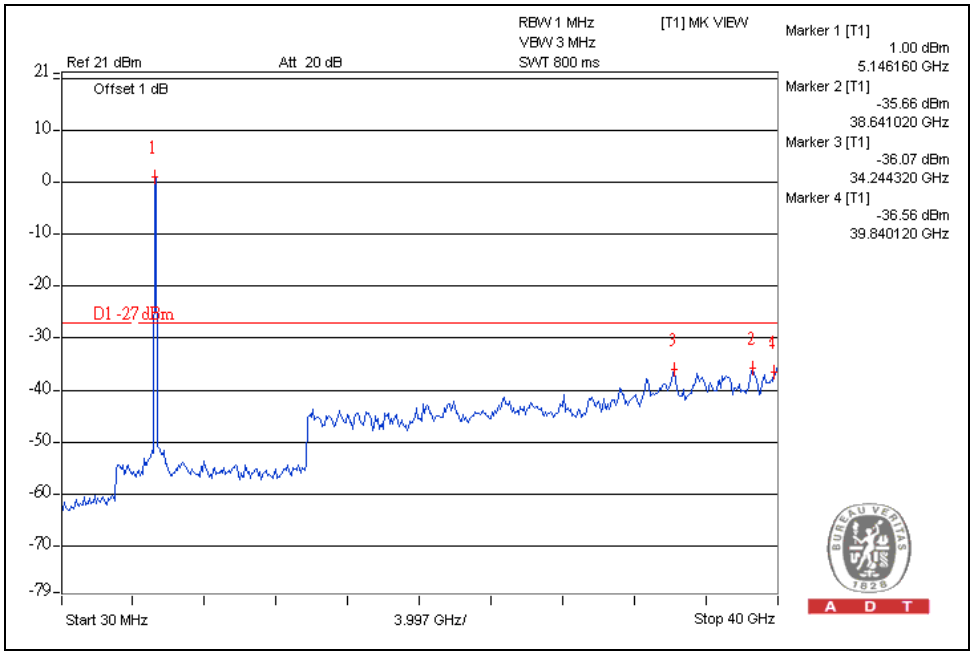
CH2



CH1


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
-5.30 dBm
5.146160 GHz
Marker 2 [T1]
-27.71 dBm
33.205100 GHz
Marker 3 [T1]
-27.91 dBm
38.880840 GHz
Marker 4 [T1]
-28.37 dBm
39.920060 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH2

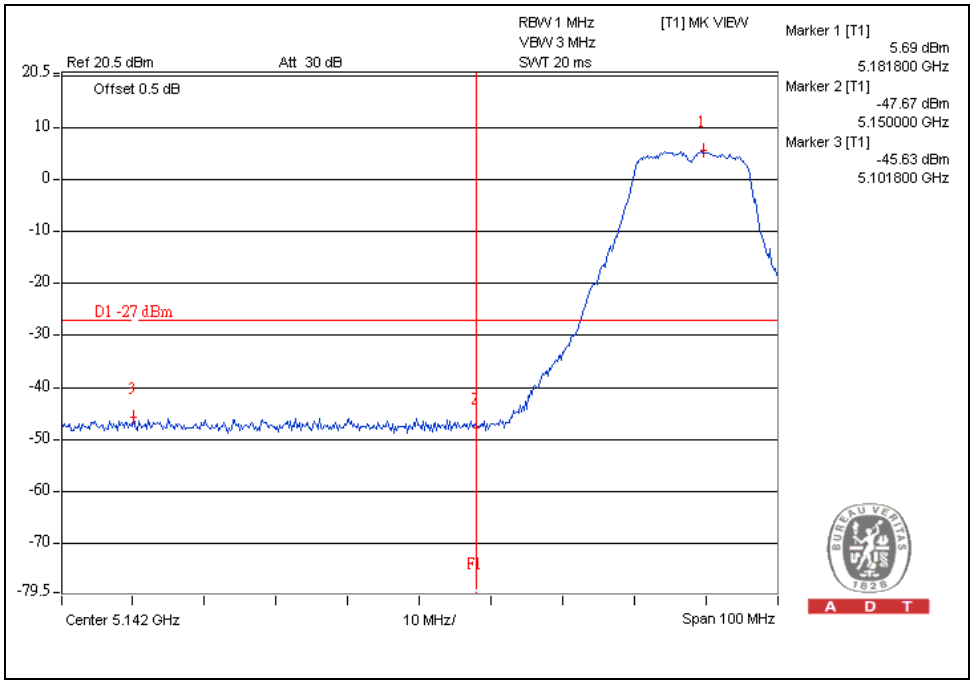

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
1.00 dBm
5.146160 GHz
Marker 2 [T1]
-35.66 dBm
38.641020 GHz
Marker 3 [T1]
-36.07 dBm
34.244320 GHz
Marker 4 [T1]
-36.56 dBm
39.840120 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

4.7.6 TEST RESULTS-ANTENNA 7

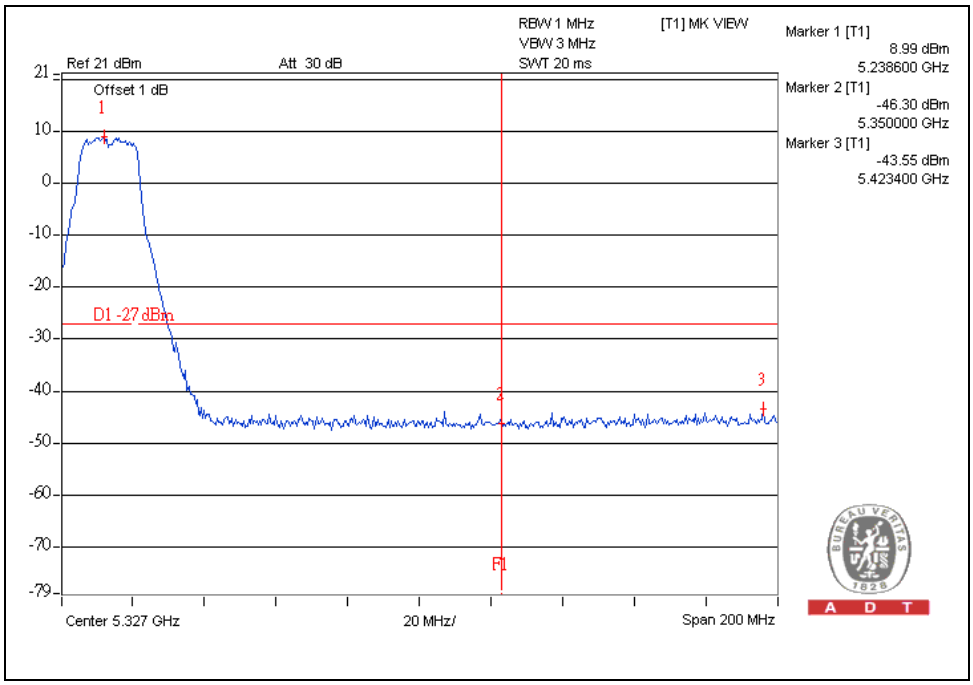
For 5.15 to 5.25GHz band:
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

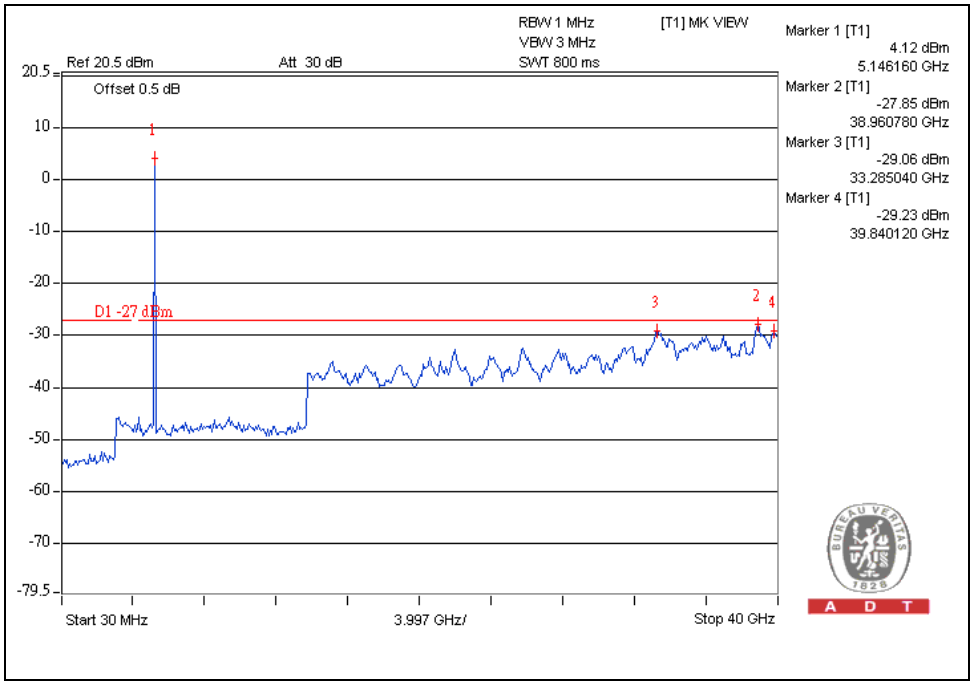
CH 1



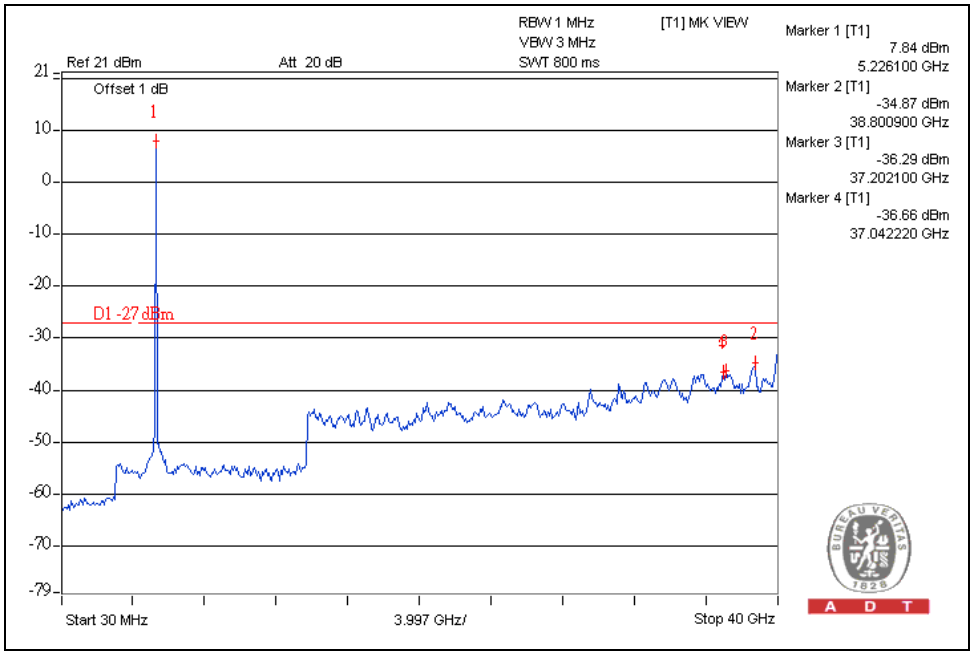
CH 4



CH 1

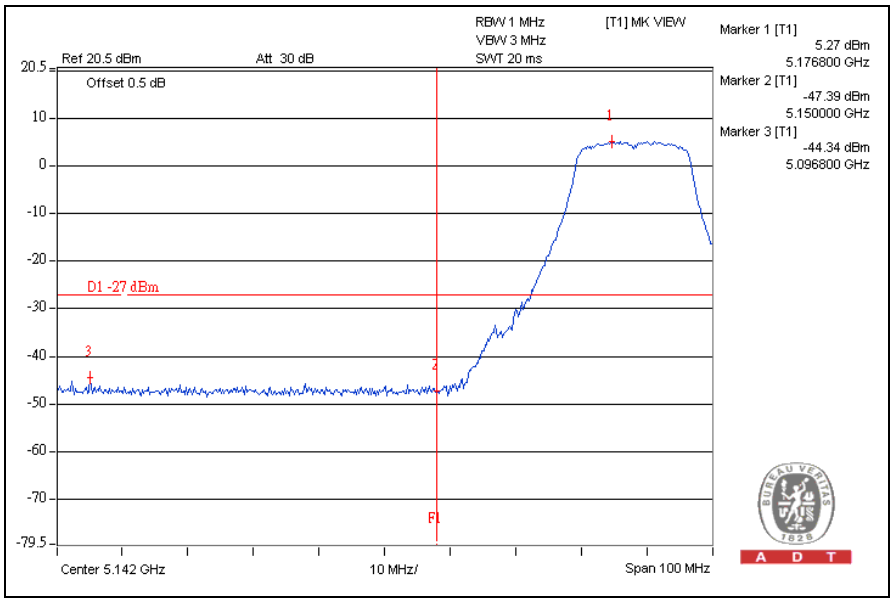

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
4.12 dBm
5.146160 GHz
Marker 2 [T1]
-27.85 dBm
38.960780 GHz
Marker 3 [T1]
-29.06 dBm
33.285040 GHz
Marker 4 [T1]
-29.23 dBm
39.840120 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH 4

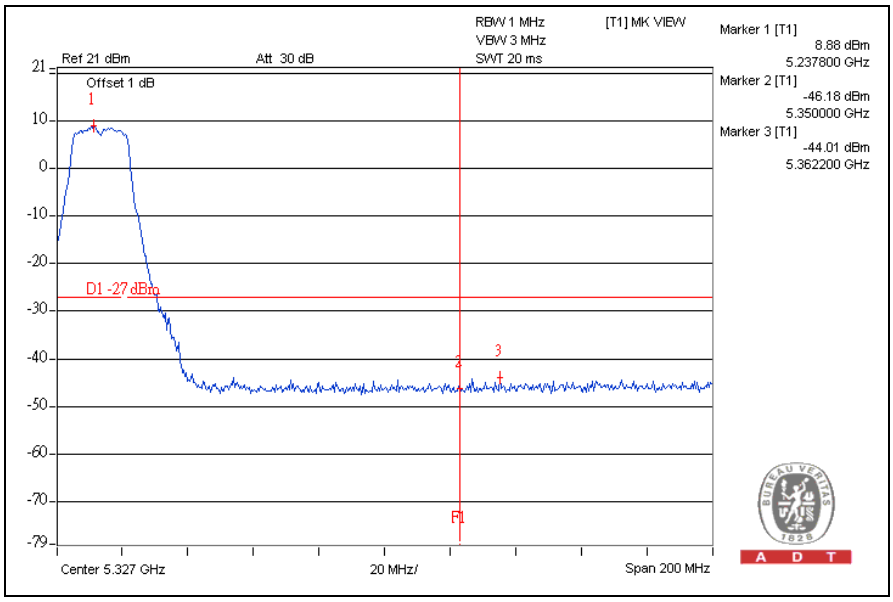

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.84 dBm
5.226100 GHz
Marker 2 [T1]
-34.87 dBm
38.800900 GHz
Marker 3 [T1]
-36.29 dBm
37.202100 GHz
Marker 4 [T1]
-36.66 dBm
37.042220 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (20MHz) OFDM MODULATION:

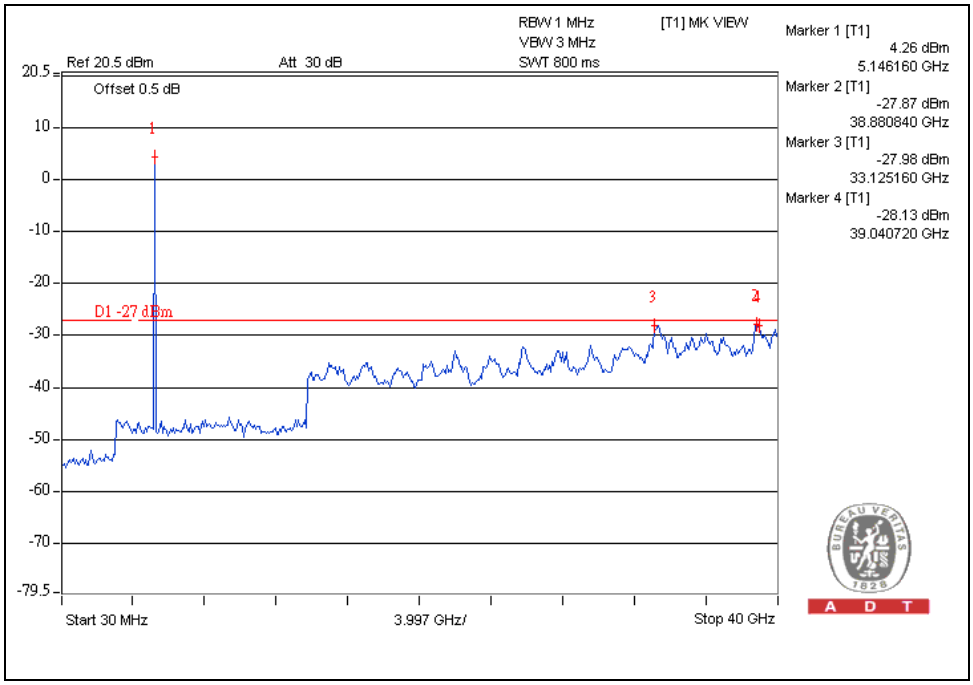
CH1



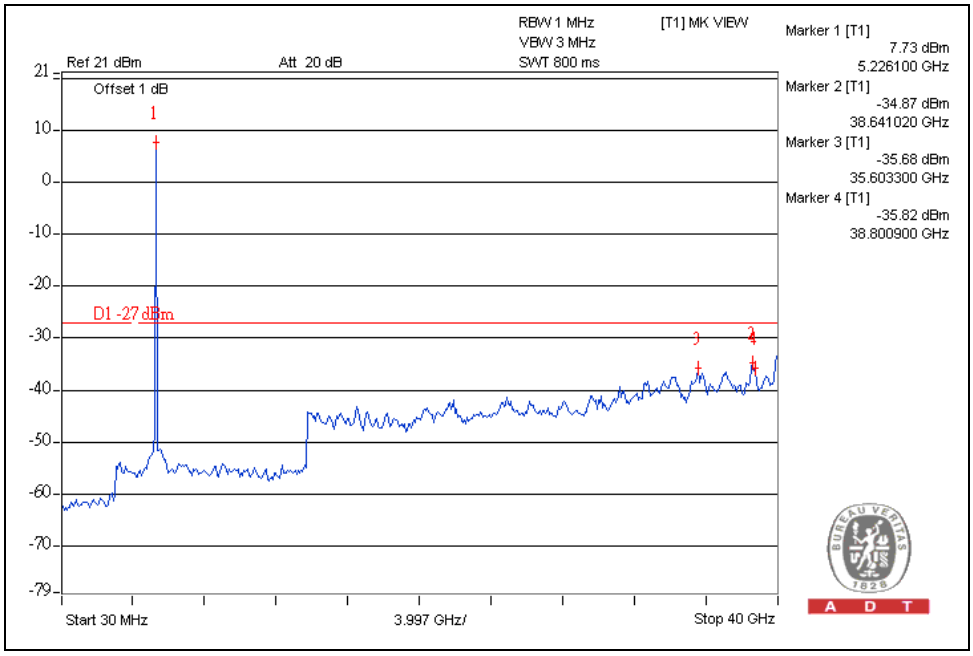
CH4



CH1

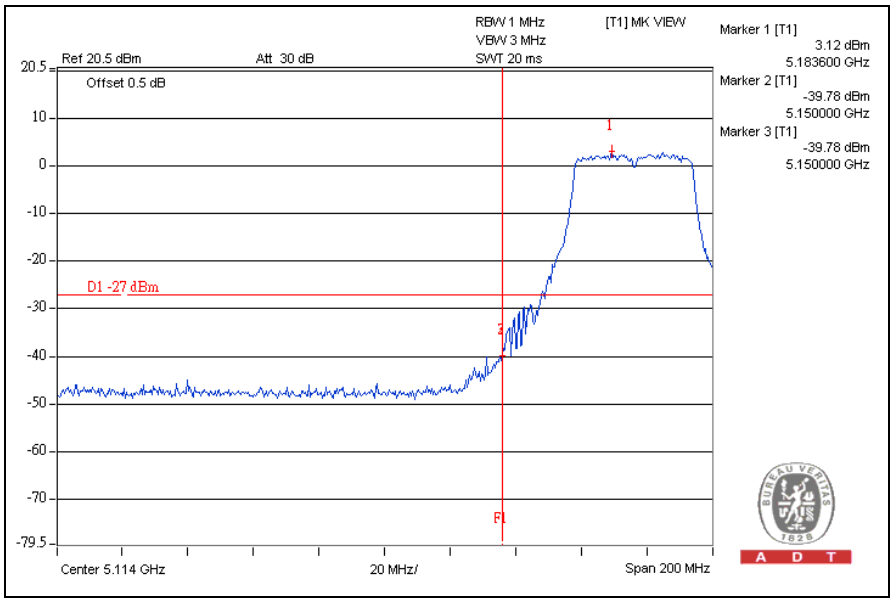

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
4.26 dBm
5.146160 GHz
Marker 2 [T1]
-27.87 dBm
38.880840 GHz
Marker 3 [T1]
-27.98 dBm
33.125160 GHz
Marker 4 [T1]
-28.13 dBm
39.040720 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH4

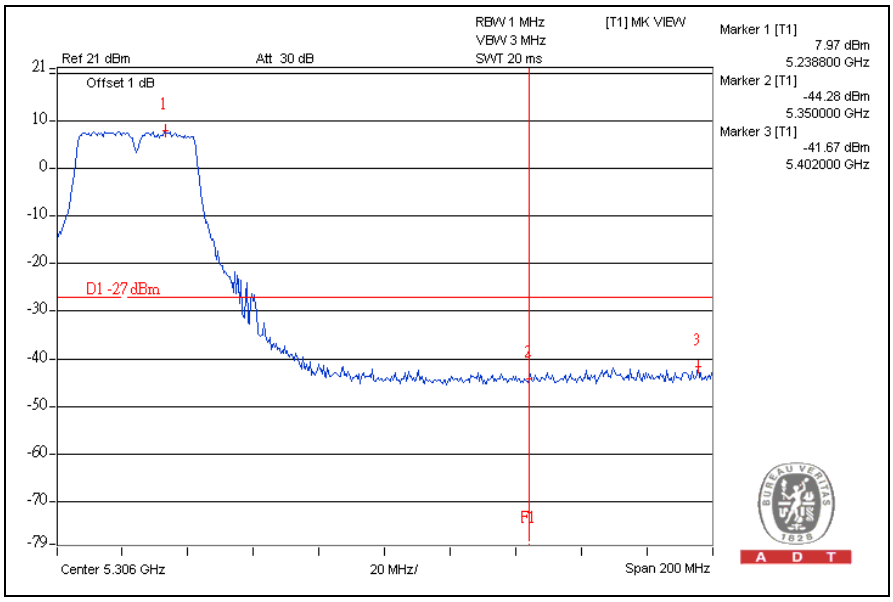

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.73 dBm
5.226100 GHz
Marker 2 [T1]
-34.87 dBm
38.641020 GHz
Marker 3 [T1]
-35.68 dBm
35.603300 GHz
Marker 4 [T1]
-35.82 dBm
38.800900 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (40MHz) OFDM MODULATION:

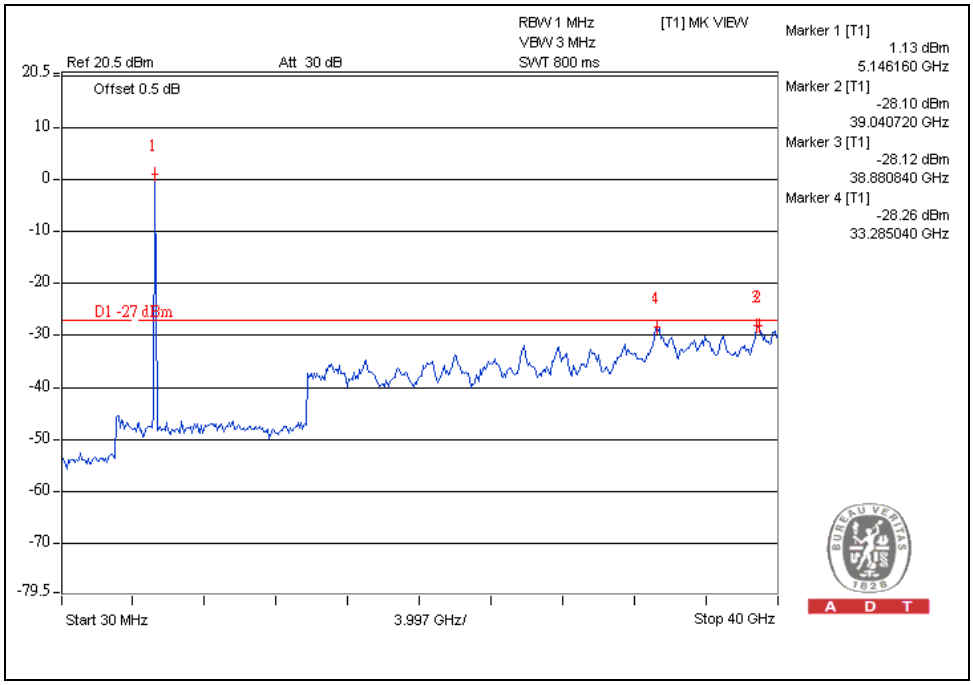
CH1



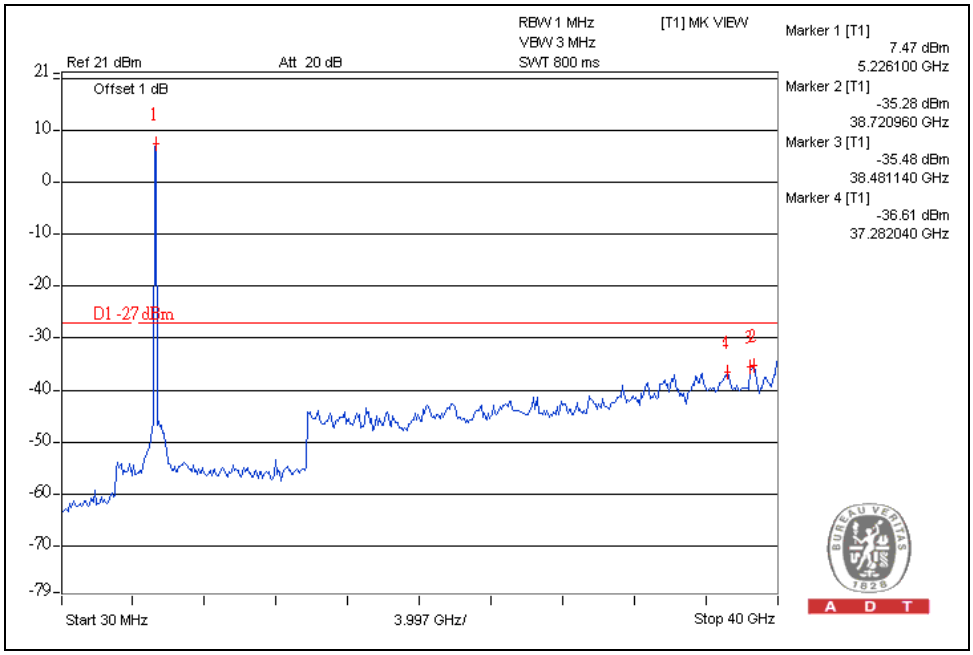
CH2



CH1


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
1.13 dBm
5.146160 GHz
Marker 2 [T1]
-28.10 dBm
39.040720 GHz
Marker 3 [T1]
-28.12 dBm
38.880840 GHz
Marker 4 [T1]
-28.26 dBm
33.285040 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH2


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.47 dBm
5.226100 GHz
Marker 2 [T1]
-35.28 dBm
38.720960 GHz
Marker 3 [T1]
-35.48 dBm
38.481140 GHz
Marker 4 [T1]
-36.61 dBm
37.282040 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz

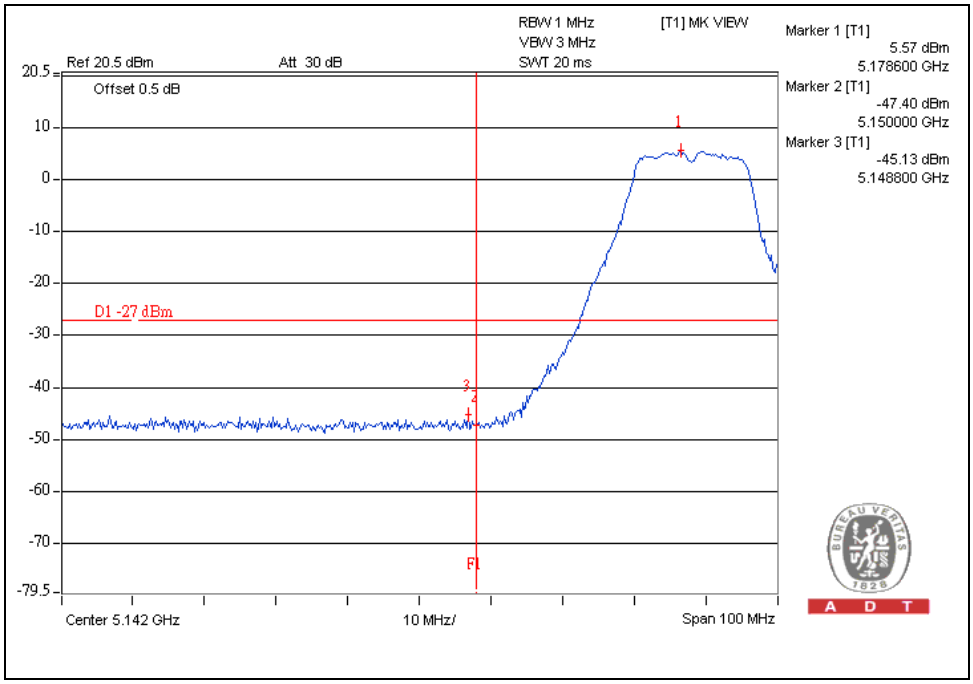
4.7.7 TEST RESULTS-ANTENNA 8

For 5.15 to 5.25GHz band:

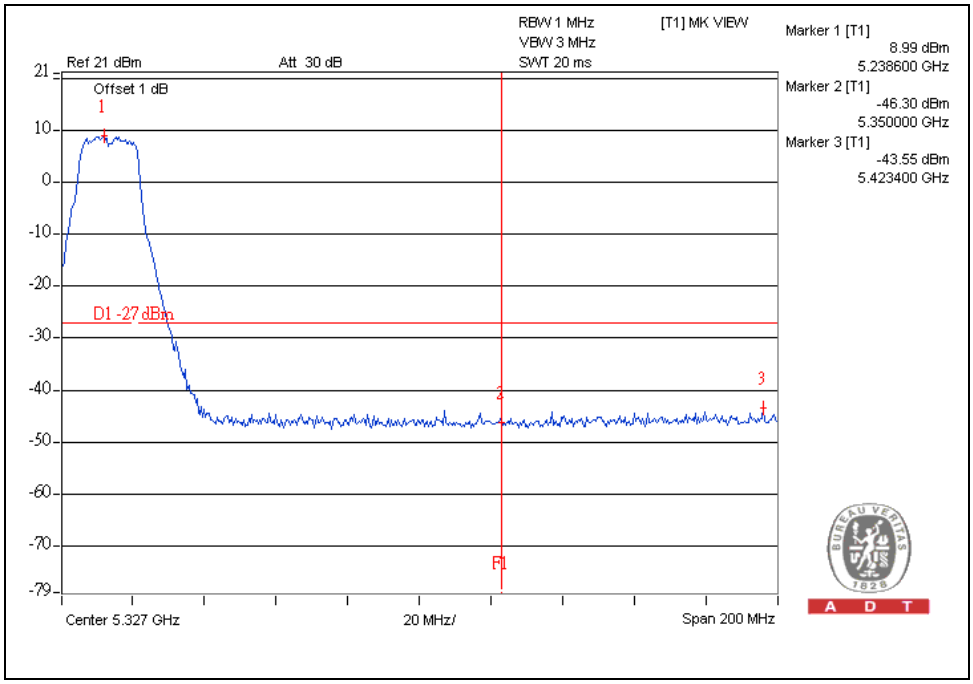
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

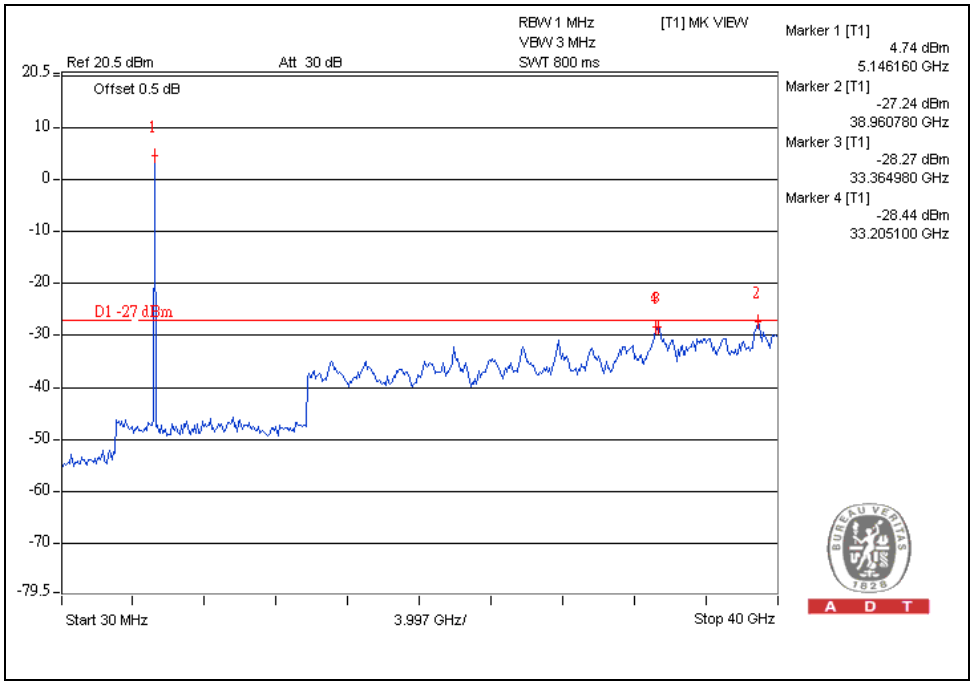
CH 1



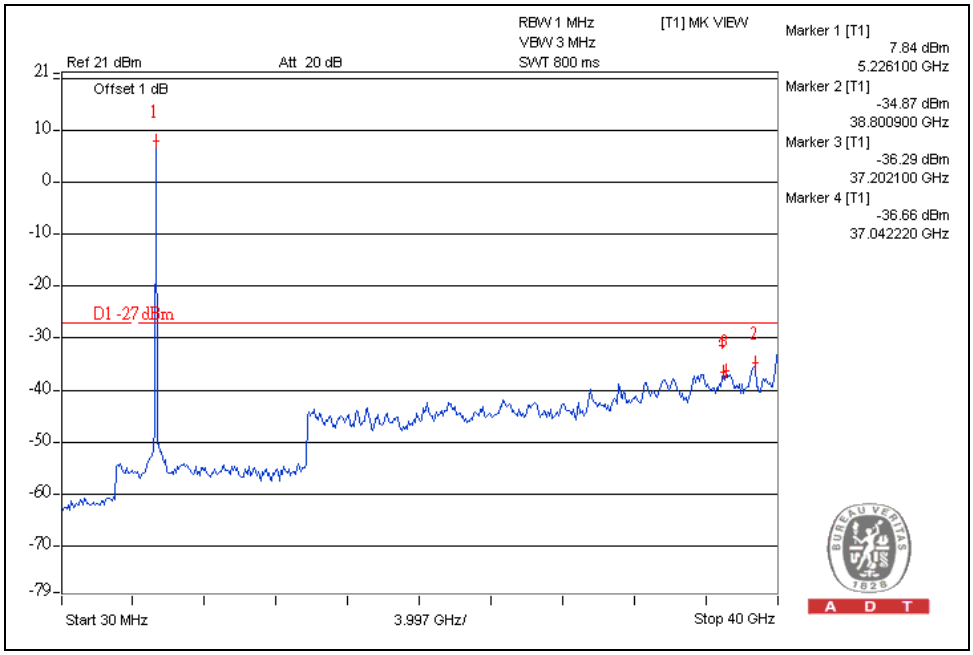
CH 4



CH 1

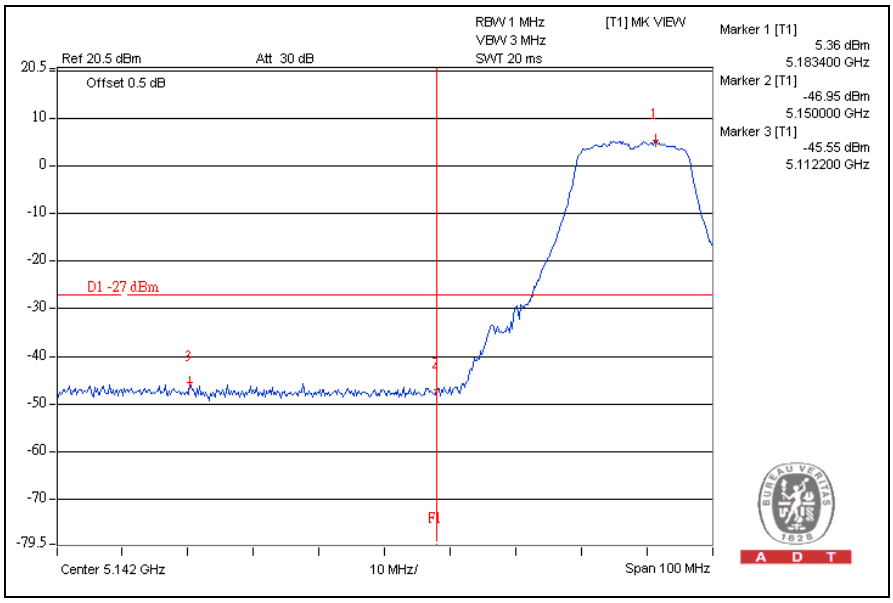

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
4.74 dBm
5.146160 GHz
Marker 2 [T1]
-27.24 dBm
38.960780 GHz
Marker 3 [T1]
-28.27 dBm
33.364980 GHz
Marker 4 [T1]
-28.44 dBm
33.205100 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH 4

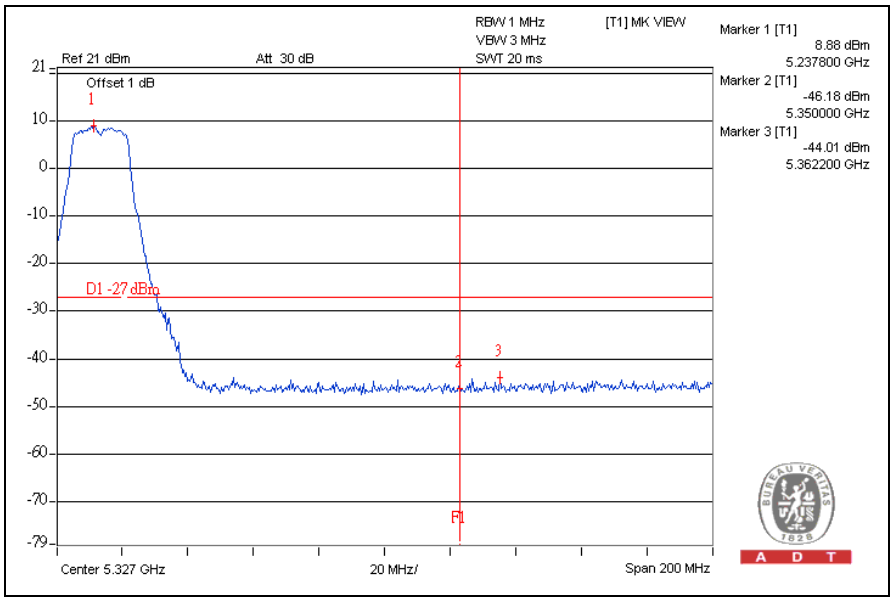

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.84 dBm
5.226100 GHz
Marker 2 [T1]
-34.87 dBm
38.800900 GHz
Marker 3 [T1]
-36.29 dBm
37.202100 GHz
Marker 4 [T1]
-36.66 dBm
37.042220 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (20MHz) OFDM MODULATION:

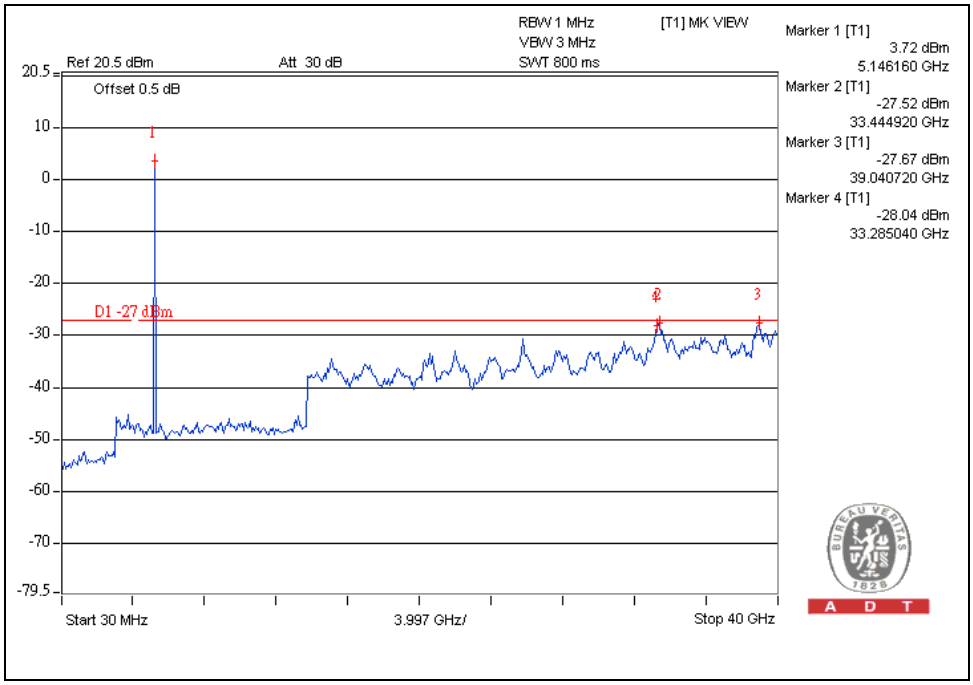
CH1



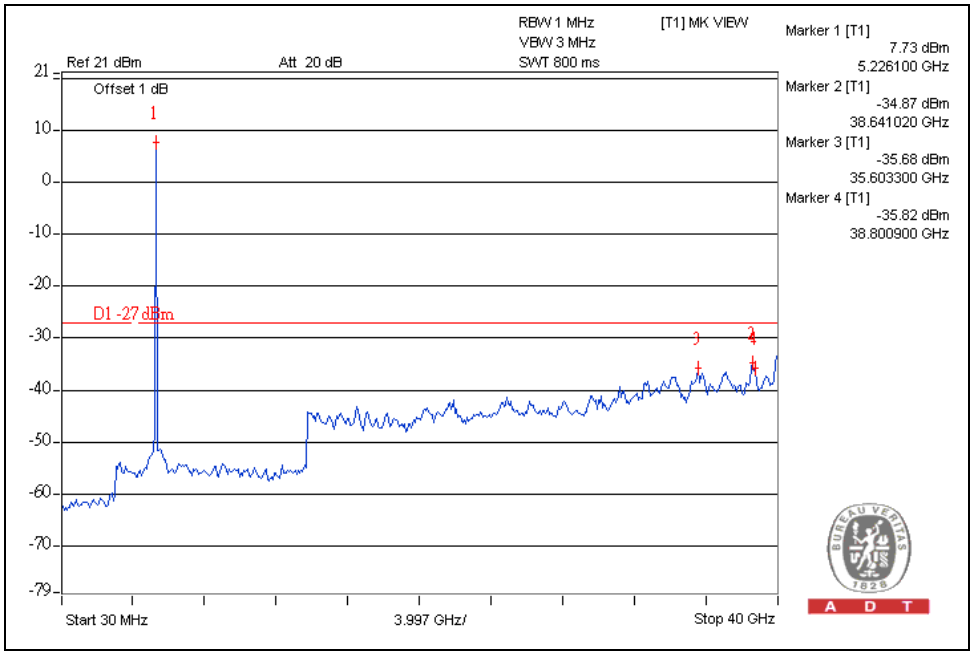
CH4



CH1

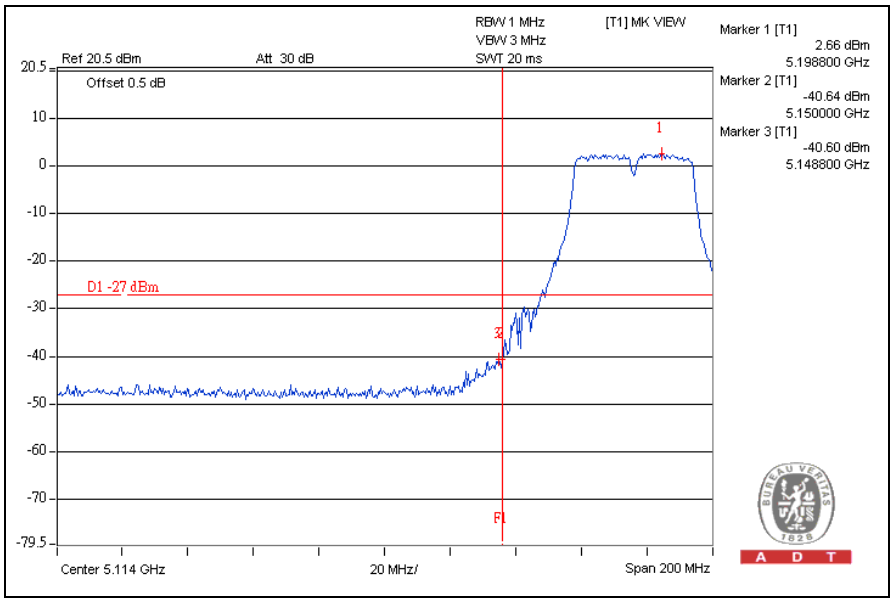

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
3.72 dBm
5.146160 GHz
Marker 2 [T1]
-27.52 dBm
33.444920 GHz
Marker 3 [T1]
-27.67 dBm
39.040720 GHz
Marker 4 [T1]
-28.04 dBm
33.285040 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH4

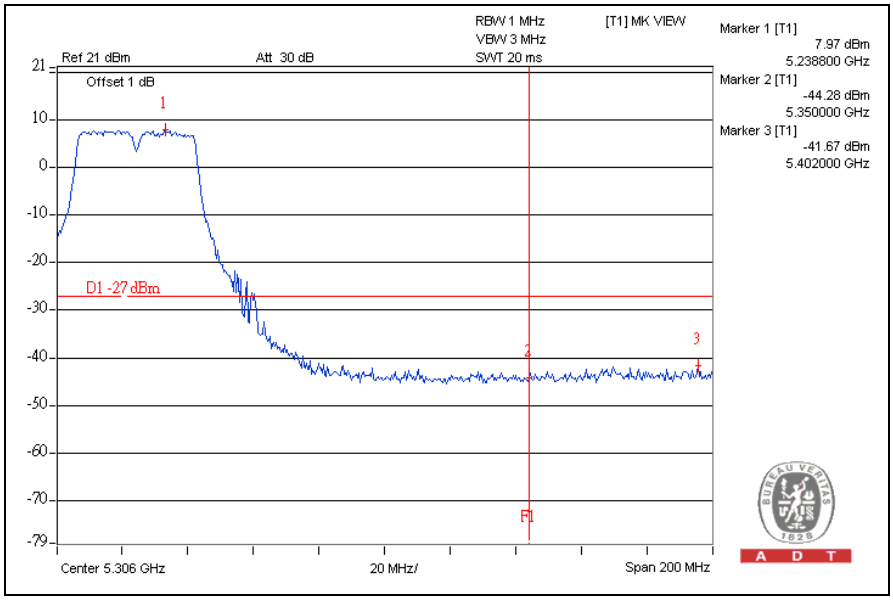

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.73 dBm
5.226100 GHz
Marker 2 [T1]
-34.87 dBm
38.641020 GHz
Marker 3 [T1]
-35.68 dBm
35.603300 GHz
Marker 4 [T1]
-35.82 dBm
38.800900 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (40MHz) OFDM MODULATION:

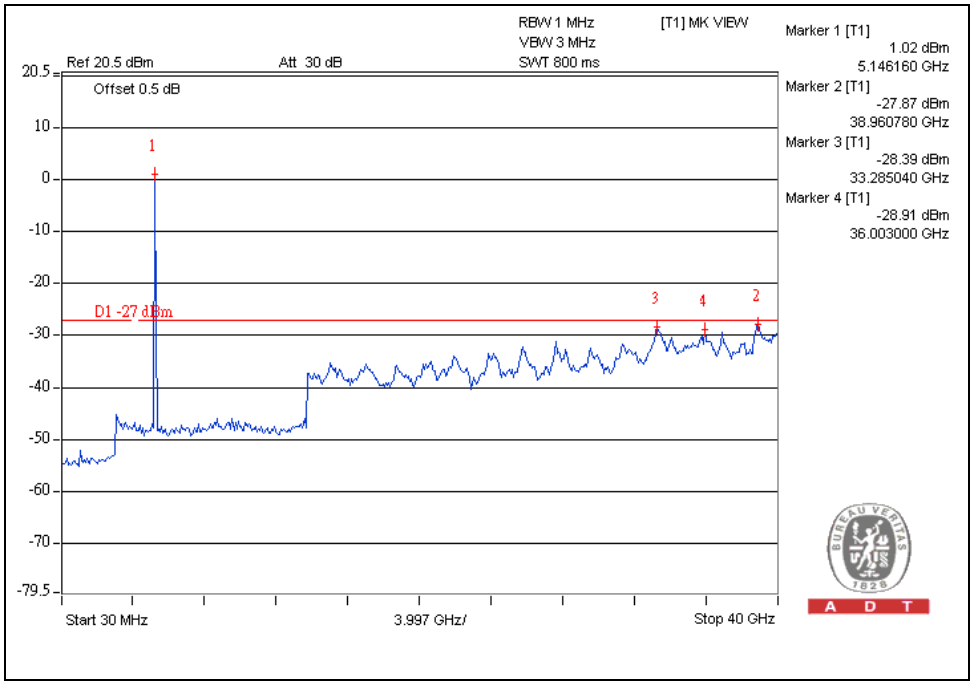
CH1



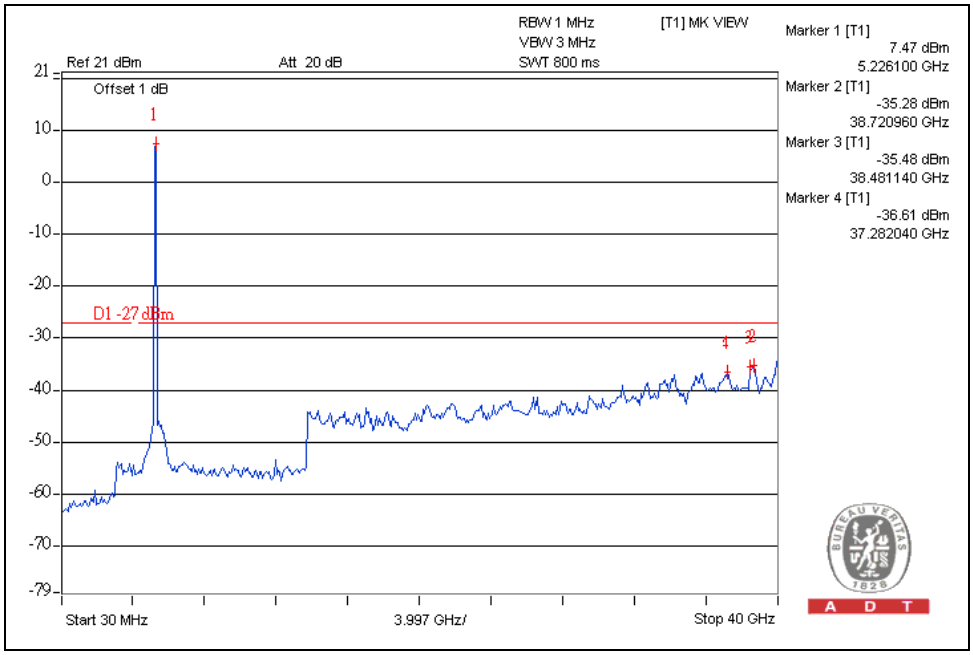
CH2



CH1


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
1.02 dBm
5.146160 GHz
Marker 2 [T1]
-27.87 dBm
38.960780 GHz
Marker 3 [T1]
-28.39 dBm
33.285040 GHz
Marker 4 [T1]
-28.91 dBm
36.003000 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH2


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
7.47 dBm
5.226100 GHz
Marker 2 [T1]
-35.28 dBm
38.720960 GHz
Marker 3 [T1]
-35.48 dBm
38.481140 GHz
Marker 4 [T1]
-36.61 dBm
37.282040 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

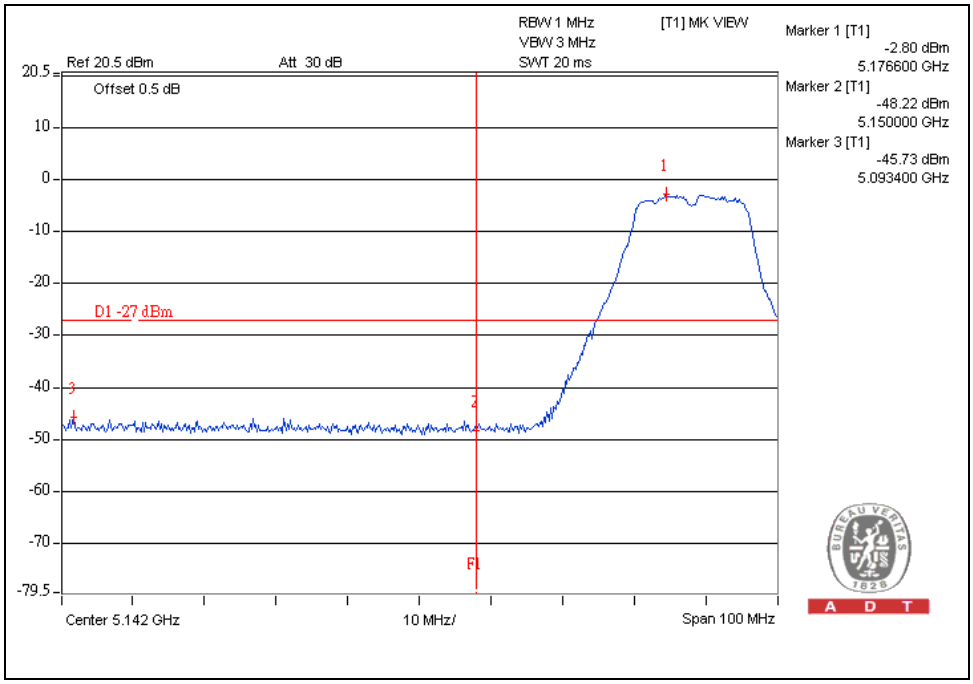
4.7.8 TEST RESULTS-ANTENNA 11

For 5.15 to 5.25GHz band:

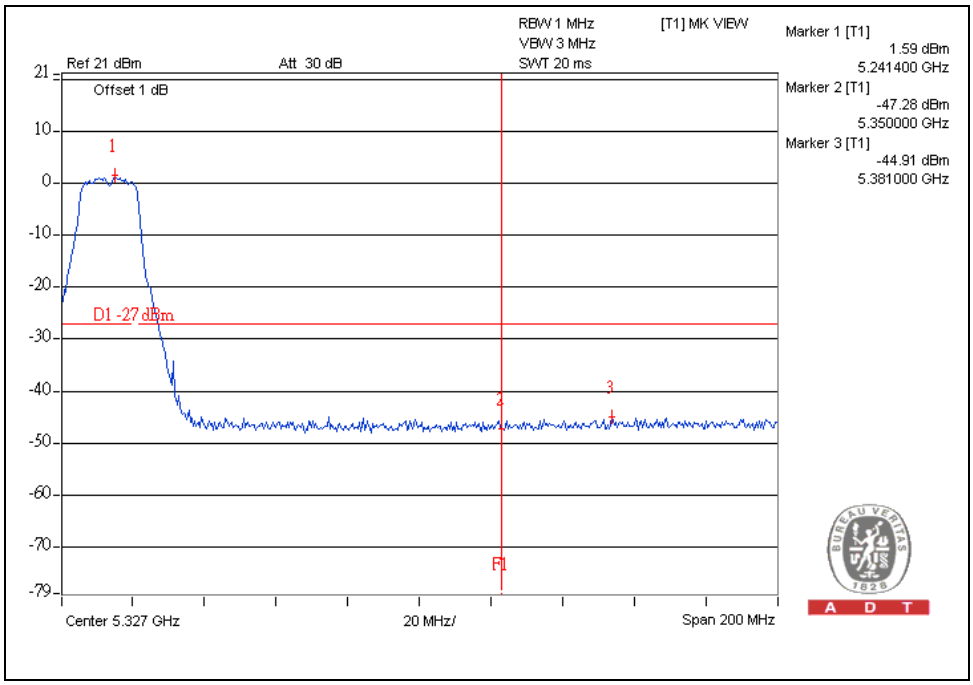
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

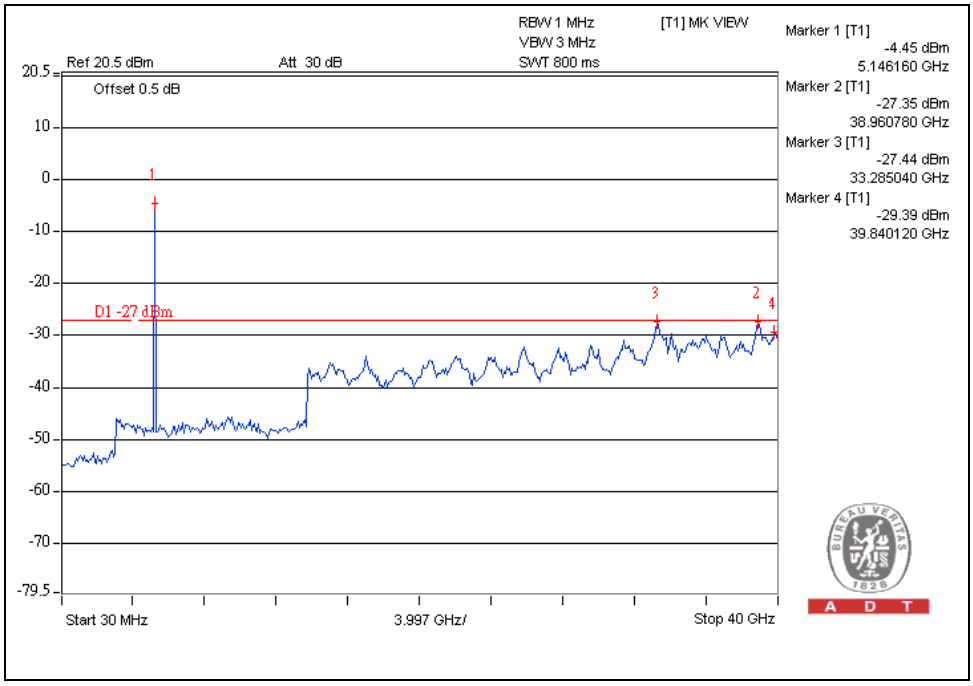
CH 1



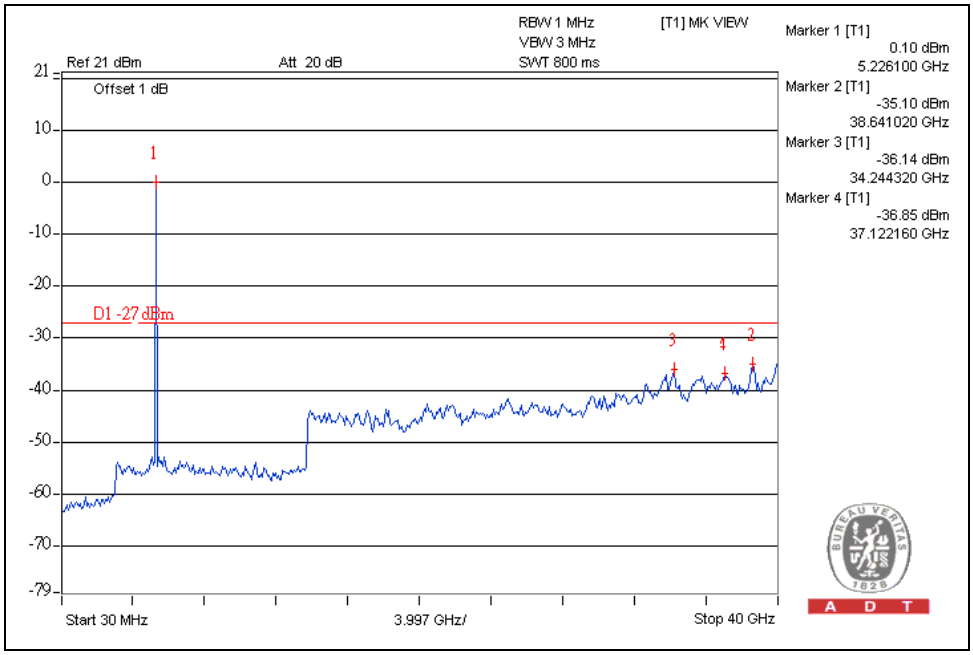
CH 4



CH 1

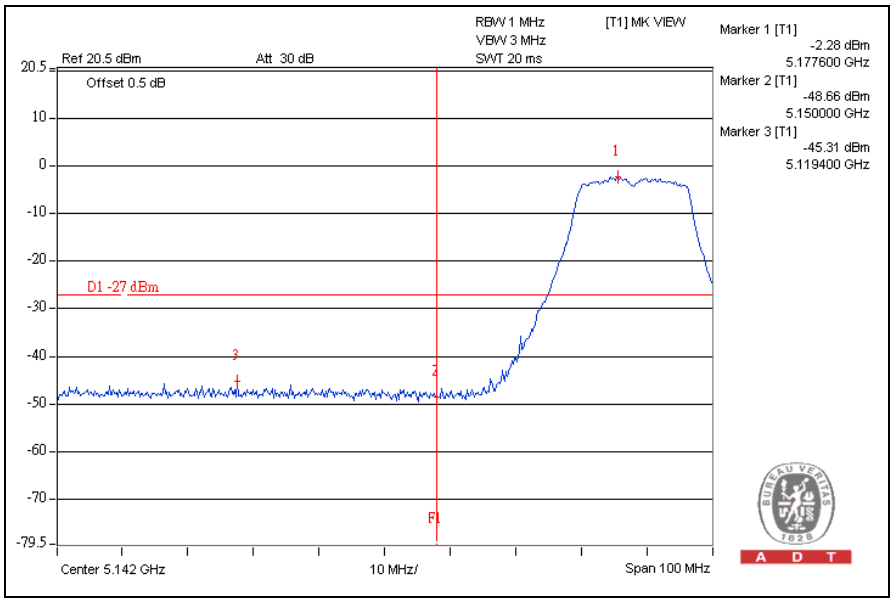

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
-4.45 dBm
5.146160 GHz
Marker 2 [T1]
-27.35 dBm
38.960780 GHz
Marker 3 [T1]
-27.44 dBm
33.285040 GHz
Marker 4 [T1]
-29.39 dBm
39.840120 GHz
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH 4

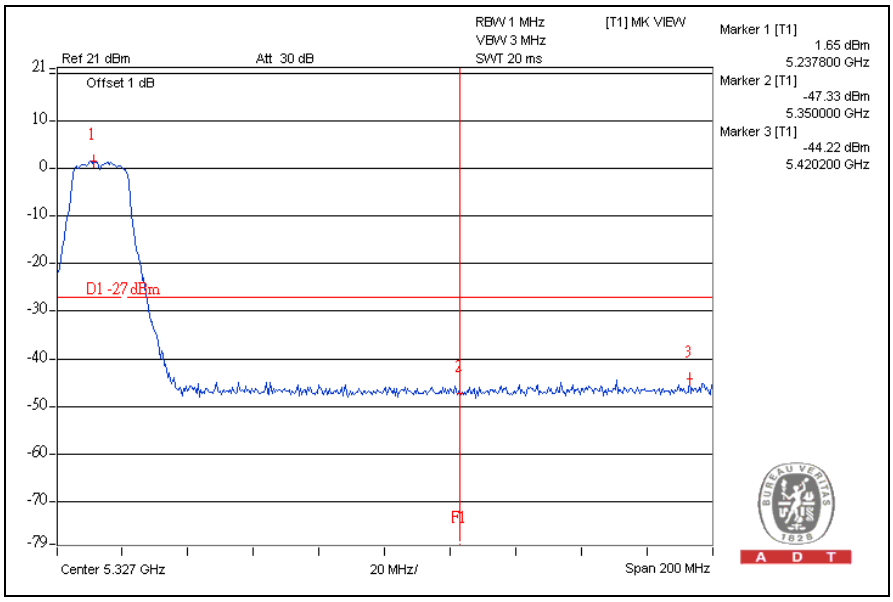

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
0.10 dBm
5.226100 GHz
Marker 2 [T1]
-35.10 dBm
38.641020 GHz
Marker 3 [T1]
-36.14 dBm
34.244320 GHz
Marker 4 [T1]
-36.85 dBm
37.122160 GHz
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
Start 30 MHz
3.997 GHz/
Stop 40 GHz

DRAFT 802.11n (20MHz) OFDM MODULATION:

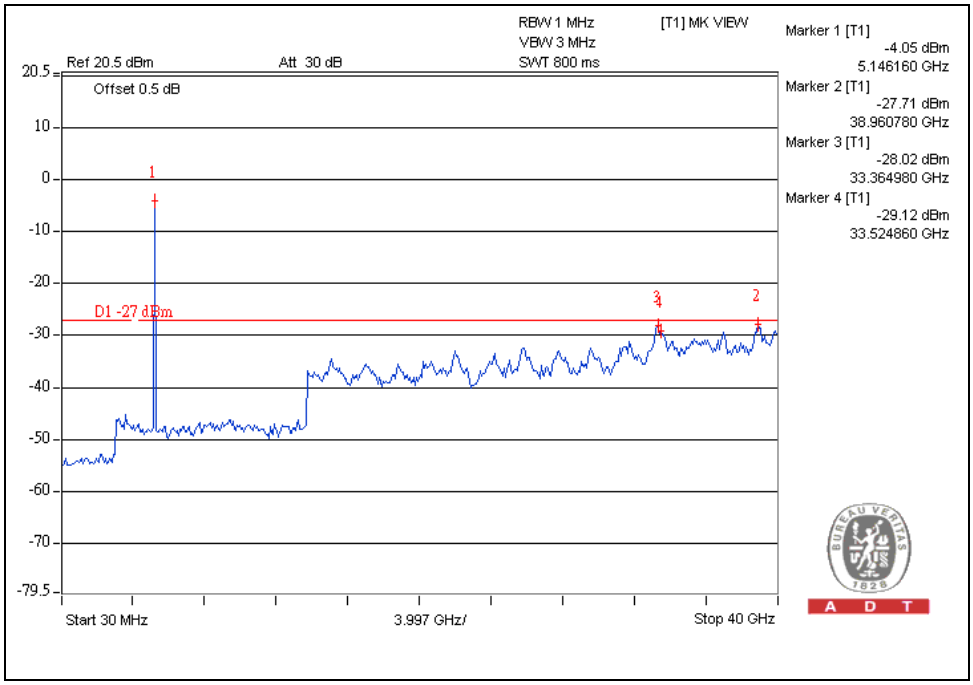
CH1



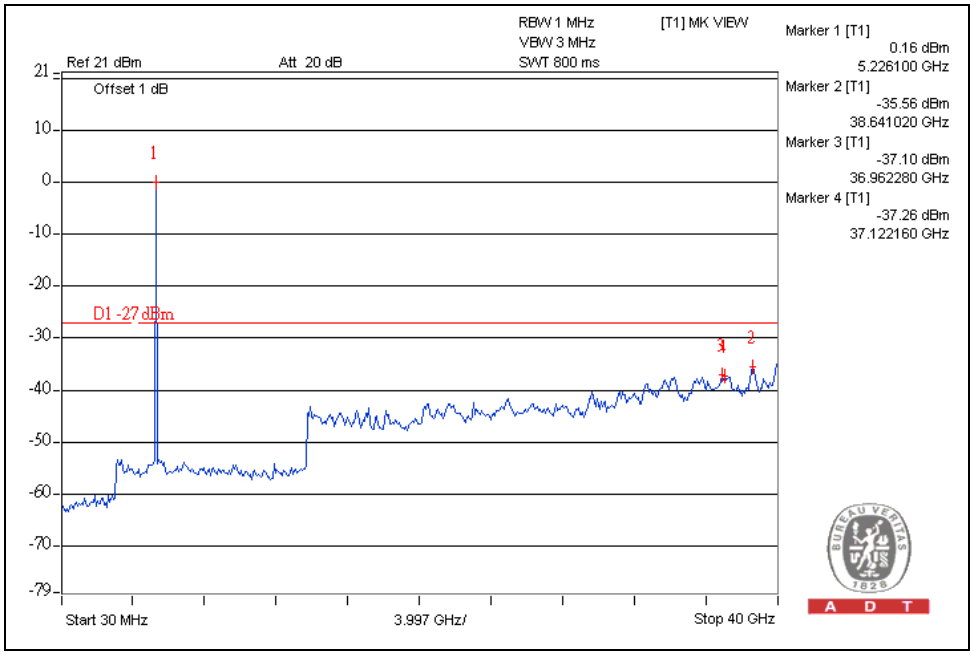
CH4



CH1

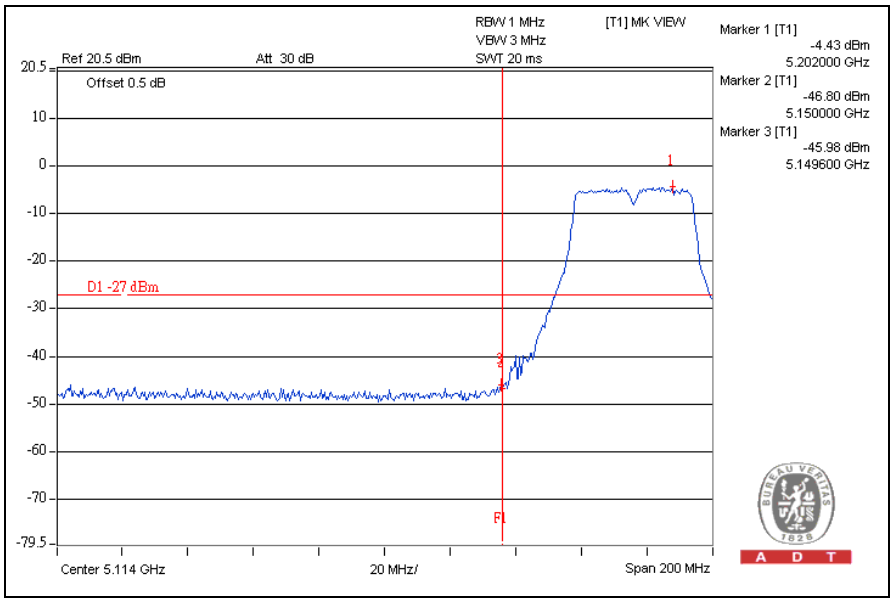

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
20.5
10
0
-10
-20
-30
-40
-50
-60
-70
-79.5
D1 -27 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz
Marker 1 [T1]
-4.05 dBm
5.146160 GHz
Marker 2 [T1]
-27.71 dBm
38.960780 GHz
Marker 3 [T1]
-28.02 dBm
33.364980 GHz
Marker 4 [T1]
-29.12 dBm
33.524860 GHz

CH4

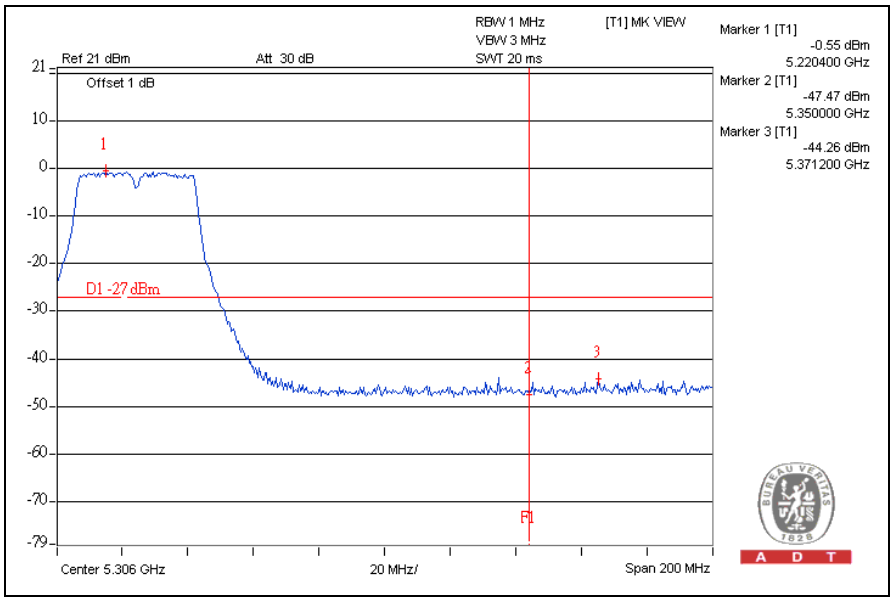

RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
21
10
0
-10
-20
-30
-40
-50
-60
-70
-79
D1 -27 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz
Marker 1 [T1]
0.16 dBm
5.226100 GHz
Marker 2 [T1]
-35.56 dBm
38.641020 GHz
Marker 3 [T1]
-37.10 dBm
36.962280 GHz
Marker 4 [T1]
-37.26 dBm
37.122160 GHz

DRAFT 802.11n (40MHz) OFDM MODULATION:

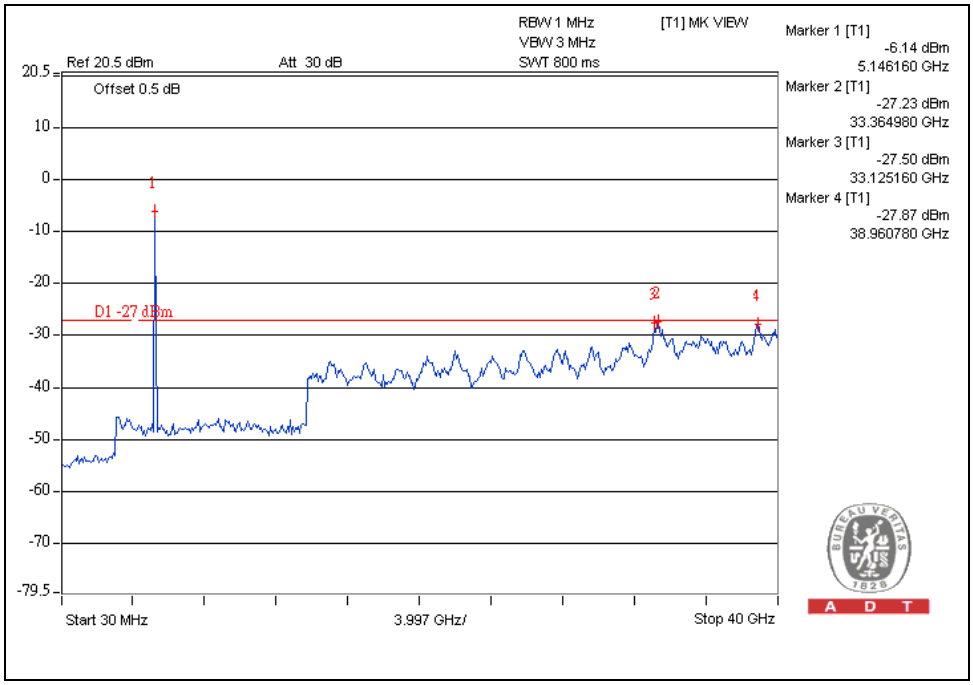
CH1



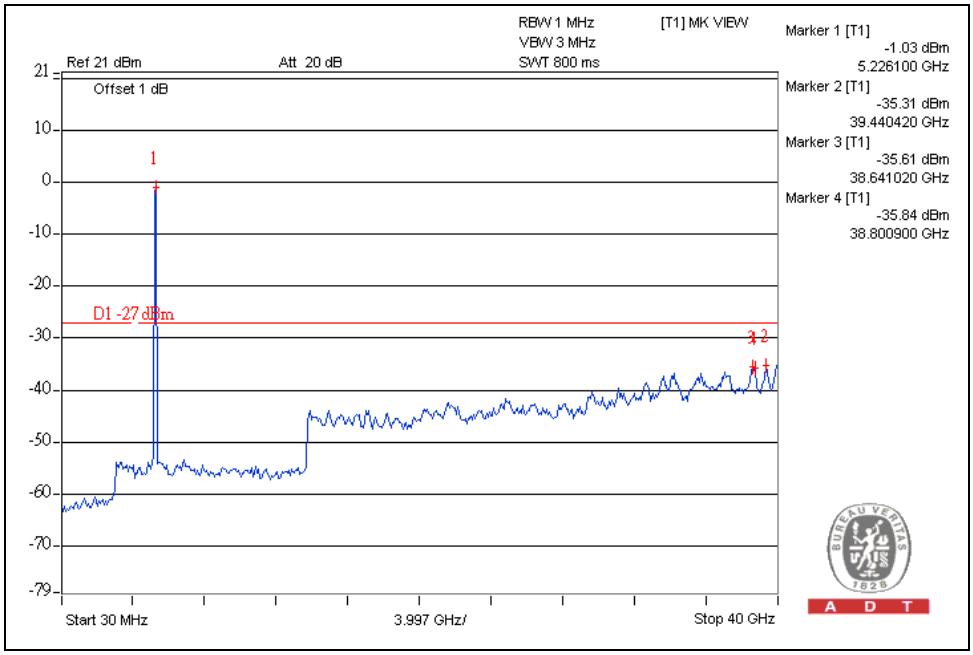
CH2



CH1


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 20.5 dBm
Att 30 dB
Offset 0.5 dB
D1 -27 dBm
Marker 1 [T1]
-6.14 dBm
5.146160 GHz
Marker 2 [T1]
-27.23 dBm
33.364980 GHz
Marker 3 [T1]
-27.50 dBm
33.125160 GHz
Marker 4 [T1]
-27.87 dBm
38.960780 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH2


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
-1.03 dBm
5.226100 GHz
Marker 2 [T1]
-35.31 dBm
39.440420 GHz
Marker 3 [T1]
-35.61 dBm
38.641020 GHz
Marker 4 [T1]
-35.84 dBm
38.800900 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

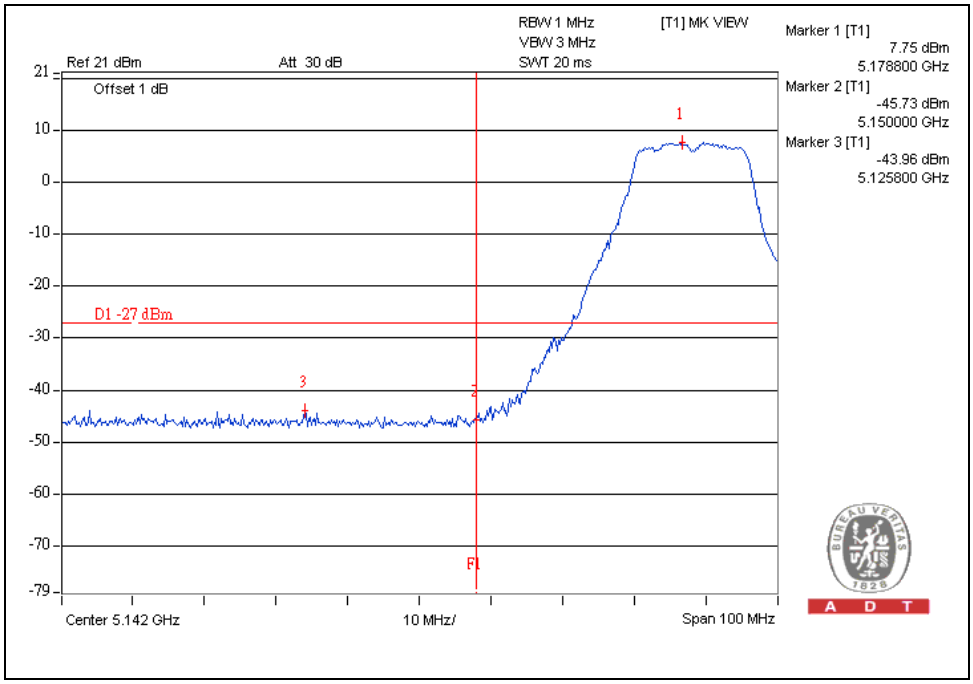
4.7.9 TEST RESULTS-ANTENNA 12

For 5.15 to 5.25GHz band:

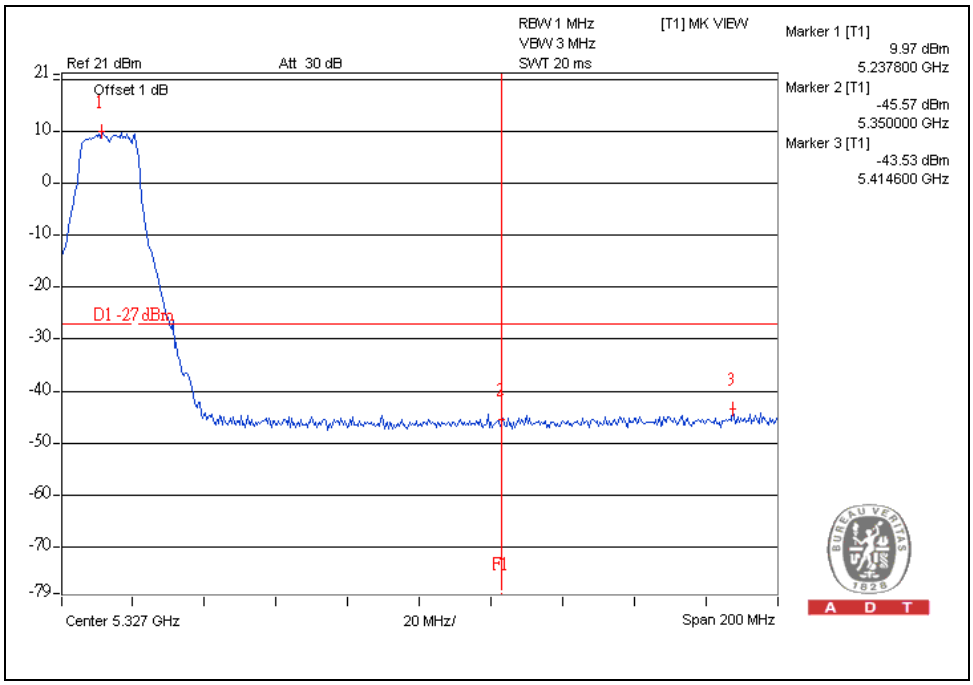
The spectrum plots (Peak RBW=1MHz, VBW=3MHz) are attached on the following pages.

802.11a OFDM modulation

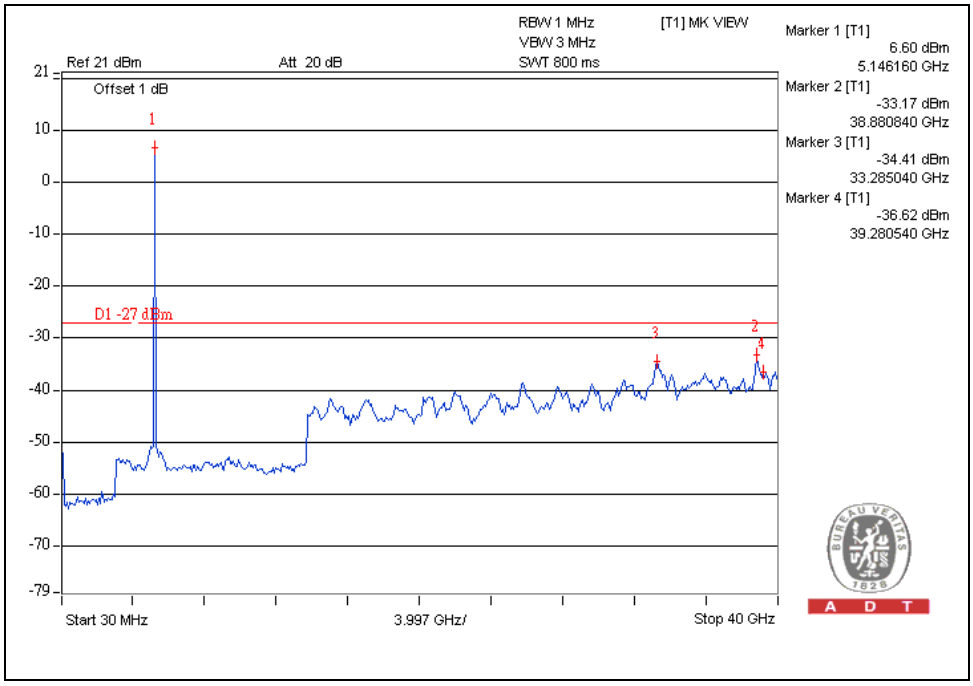
CH 1



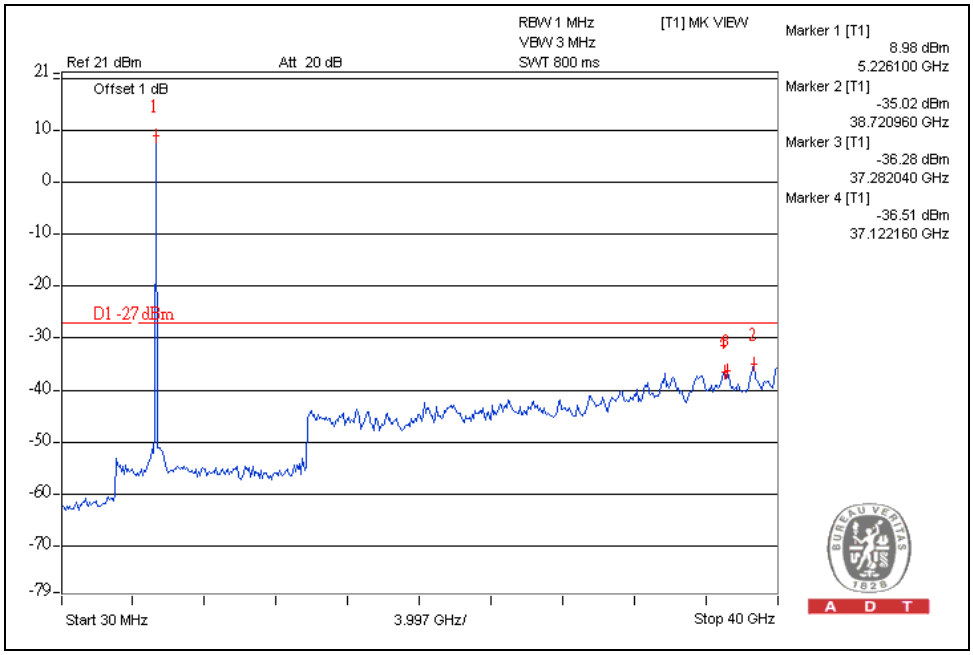
CH 4



CH 1


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
6.60 dBm
5.146160 GHz
Marker 2 [T1]
-33.17 dBm
38.880840 GHz
Marker 3 [T1]
-34.41 dBm
33.285040 GHz
Marker 4 [T1]
-36.62 dBm
39.280540 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

CH 4


RBW 1 MHz
VBW 3 MHz
SWT 800 ms
[T1] MK VIEW
Ref 21 dBm
Att 20 dB
Offset 1 dB
D1 -27 dBm
Marker 1 [T1]
8.98 dBm
5.226100 GHz
Marker 2 [T1]
-35.02 dBm
38.720960 GHz
Marker 3 [T1]
-36.28 dBm
37.282040 GHz
Marker 4 [T1]
-36.51 dBm
37.122160 GHz
Start 30 MHz
3.997 GHz/
Stop 40 GHz

4.8 ANTENNA REQUIREMENT

4.8.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.407(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.8.2 ANTENNA CONNECTED CONSTRUCTION

There are twelve antennas provided to this EUT, please refer to the following table:

No	Brand	Model	Antenna Type	Connecter Type (External only)	Frequency range (MHz)	Indoor or Outdoor
1	Symbol	ML-2499-BYGA2-01R	YAGI	Type N-Female	2400~2500	Indoor
2	Symbol	ML-2499-11PNA2-01R	Panel	RP-BNC-Female	2400~2500	Indoor
3	Symbol	ML-2452-APA2-01	Dipole	RP-SMA MALE	2400-2500, 5150-5850	Indoor
4	Motolora	ML-2452-PTA2M3X3-1	Embedded	RP-SMA-Male	2400-2500, 4900-5990	Indoor
5	Symbol	ML-5299-WPNA1-01R	Panel	RP-SMA-Female	5150-5875	Indoor
6	Symbol	ML-2499-HPA3-01R	Dipole	RP-BNC FEMALE	2400-2500	Indoor
7	Symbol	ML-5299-HPA1-01R	Dipole	RP-SMA FEMALE	5150-5875	Indoor
8	Motolora	ML-2452-PTA3M3-036	Patch	RP-SMA-Male	2400-2500, 4900-5990	Indoor
9	WHA YU	ML-2452-APA6J-01	Dipole	SMA Plug Reverse	2400-2500, 4900-5990	Indoor
10	Motolora	ML-2452-PNL9M3-036	Panel	Reverse SMA	2400-2500, 5150-5875	Indoor
11	Motolora	ML-5299-BYGA15-012	YAGI	Type N Female connector	4900-5800	Indoor
12	WHA YU	M25.90002.S01	Dipole	I-PEX	2400-2500, 5150-5850	Indoor

No	Brand	Model	Gain (dBi)	Cable Loss(dB) (External only, if any)	Net Gain (dB)	Cable Length (External only, if any)
1	Symbol	ML-2499-BYGA2-01R	14.2	0.3	13.9	12 inch
2	Symbol	ML-2499-11PNA2-01R	11.2	2.7	8.5	96 inch
3	Symbol	ML-2452-APA2-01	3 / 4	N/A	3 / 4	N/A

4	Motolora	ML-2452-PTA2M3X3-1	1 / 2	N/A	1 / 2	N/A
5	Symbol	ML-5299-WPNA1-01R	14.2	1.2	13	36 inch
6	Symbol	ML-2499-HPA3-01R	4.6	1.3	3.3	48 inch
7	Symbol	ML-5299-HPA1-01R	5.9	0.84	5.06	36 inch
8	Motolora	ML-2452-PTA3M3-036	6/7	0.92 / 1.97	5.08 / 5.03	36 inch
9	WHA YU	ML-2452-APA6J-01	-6 / -6	N/A	2.4GHz Peak gain : -5.76dBi 5GHz Peak gain : band 1: -3.77dBi band 2: -3.38dBi band 3: -2.84dBi band 4: -2.94dBi	N/A
10	Motolora	ML-2452-PNL9M3-036	8 / 10.7	N/A	8 / 10.7	36 inch
11	Motolora	ML-5299-BYGA15-012	14.5	N/A	14.5	3 ft
12	WHA YU	M25.90002.S01	3.03 / 4.06	N/A	3.03 / 4.06	63mm

Note :

1. For Radio card 1: The antennas 1~4, 6 & 8-10 will be use, therefore antenna 1, 2, 4, 6, 8, were chosen for final test.
2. For Radio card 2: The antennas 3~5 & 7-11 will be use, therefore antenna 4, 5, 7, 8, 11, were chosen for final test.
3. For Radio card 3: The antenna 12 will be use only, therefore antenna 12 was chosen for final test.

5. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025:

USA	FCC, NVLAP
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA, CSA
R.O.C.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	GOST-ASIA (MOU)
Russia	CERTIS (MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also

6.APPENDIX-A- MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

7.APPENDIX-B- POWER MEASUREMENT FOR EACH DATA RATE

For 2.4GHz

11b CH06	Data Rate	**1**	2	5.5	11
	Peak Power (dBm)	**29.806**	29.756	29.685	29.644

11g CH01	Data Rate	**6**	9	12	18	24	36	48	54
	Peak Power (dBm)	**29.945**	29.852	29.874	29.658	29.587	29.648	29.725	29.687

11n HT20 CH01	Data Rate	**MCS 0**	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
	Peak Power (dBm)	**29.942**	29.513	29.315	29.354	29.154	29.054	28.894	29.057
	Data Rate	MCS 8	MCS 9	MCS 10	MCS 11	MCS 12	MCS 13	MCS 14	MCS 15
	Peak Power (dBm)	29.856	29.736	29.524	29.265	29.154	29.358	29.369	29.485

11n HT40 CH06	Data Rate	**MCS 0**	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
	Peak Power (dBm)	**29.997**	28.897	28.826	28.756	28.739	28.816	28.634	28.547
	Data Rate	MCS 8	MCS 9	MCS 10	MCS 11	MCS 12	MCS 13	MCS 14	MCS 15
	Peak Power (dBm)	28.893	28.756	28.867	28.965	28.983	28.991	29.025	29.064

For 5GHz<15.247>

11A CH149	Data Rate	**6**	9	12	18	24	36	48	54
	Peak Power (dBm)	**29.733**	29.642	29.613	29.548	29.642	29.459	29.413	29.352

11n HT20 CH149	Data Rate	**MCS 0**	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
	Peak Power (dBm)	**29.644**	29.567	29.458	29.492	29.395	29.298	29.344	29.357
	Data Rate	MCS 8	MCS 9	MCS 10	MCS 11	MCS 12	MCS 13	MCS 14	MCS 15
	Peak Power (dBm)	29.568	29.277	29.547	29.354	29.468	29.521	29.435	29.295

11n HT40 CH151	Data Rate	**MCS 0**	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
	Peak Power (dBm)	**29.534**	28.695	28.754	28.769	28.795	28.642	28.527	28.647
	Data Rate	MCS 8	MCS 9	MCS 10	MCS 11	MCS 12	MCS 13	MCS 14	MCS 15
	Peak Power (dBm)	28.533	28.678	28.605	28.619	28.622	28.739	28.841	28.852

For 5GHz<15.407>

11a CH36	Data Rate	**6**	9	12	18	24	36	48	54
	Peak Power (dBm)	**14.912**	14.856	14.755	14.533	14.628	14.486	14.358	14.269

11n HT20 CH36	Data Rate	**MCS 0**	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
	Peak Power (dBm)	**14.858**	14.802	14.736	14.642	14.592	14.287	14.386	14.054
	Data Rate	MCS 8	MCS 9	MCS 10	MCS 11	MCS 12	MCS 13	MCS 14	MCS 15
	Peak Power (dBm)	14.756	14.347	14.085	14.466	14.315	14.422	14.587	14.638

11n HT40 CH46	Data Rate	**MCS 0**	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7
	Peak Power (dBm)	**16.641**	16.535	16.423	16.258	16.124	16.257	16.318	16.519
	Data Rate	MCS 8	MCS 9	MCS 10	MCS 11	MCS 12	MCS 13	MCS 14	MCS 15
	Peak Power (dBm)	16.428	16.439	16.287	16.154	16.318	16.458	16.121	16.064

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