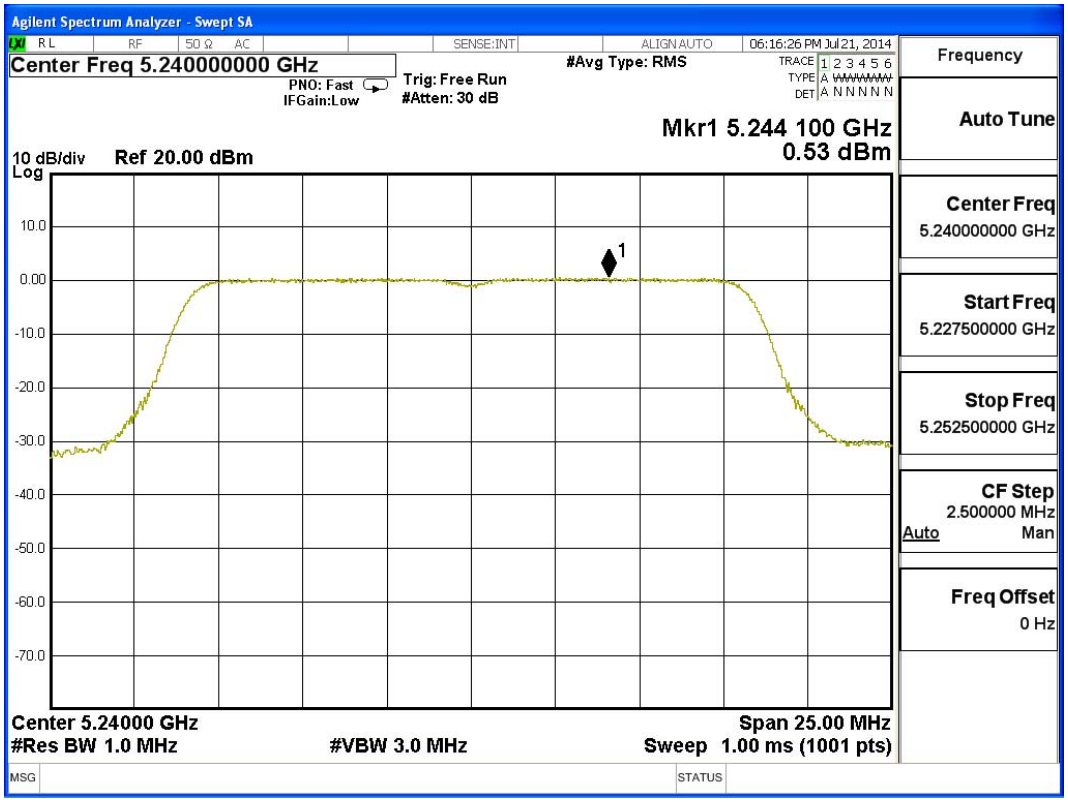
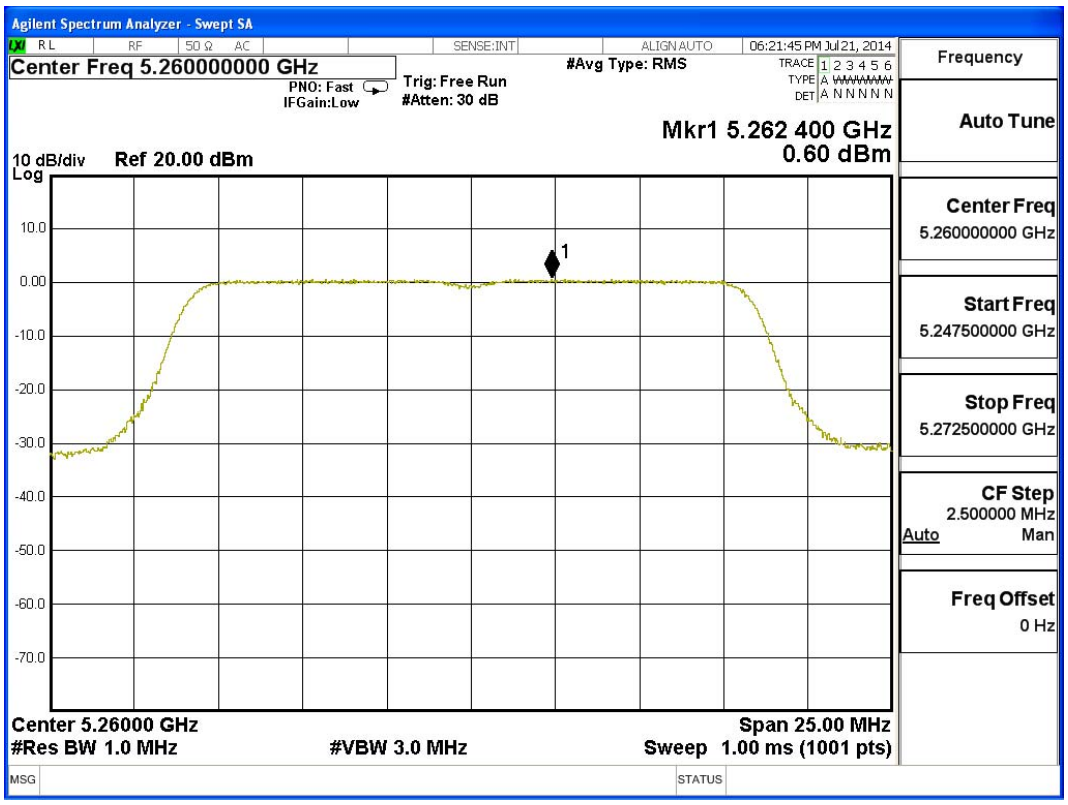
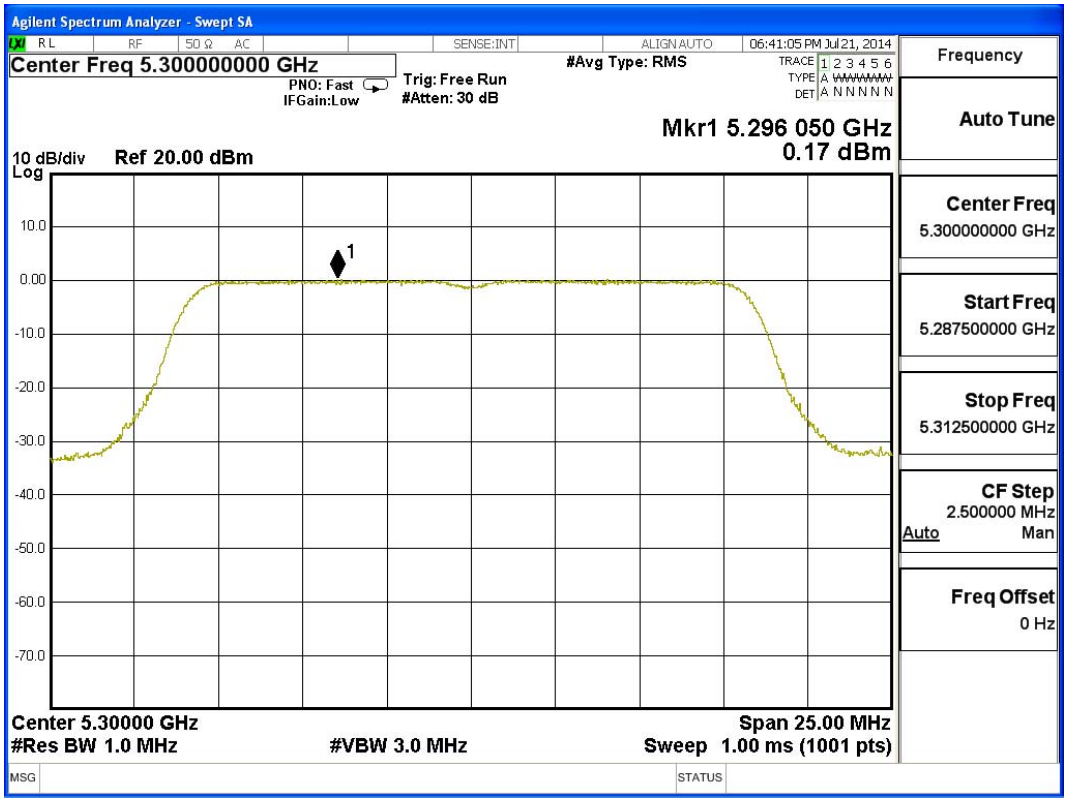
Channel 48:



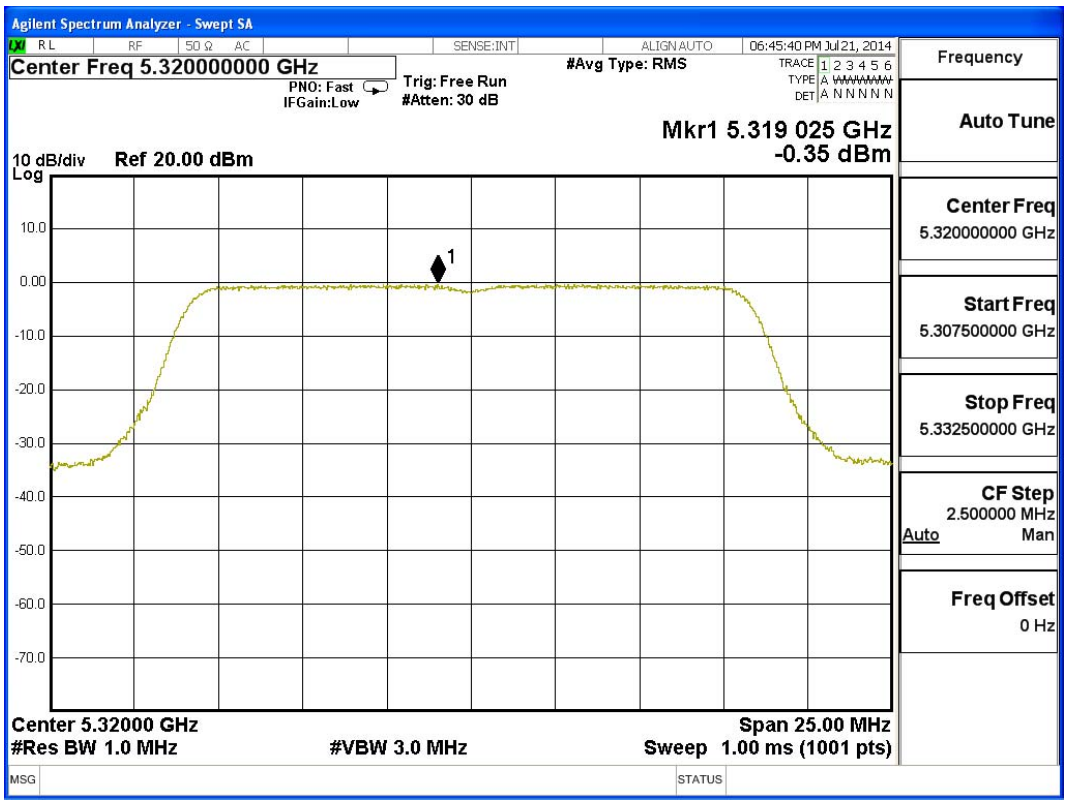
Channel 52:



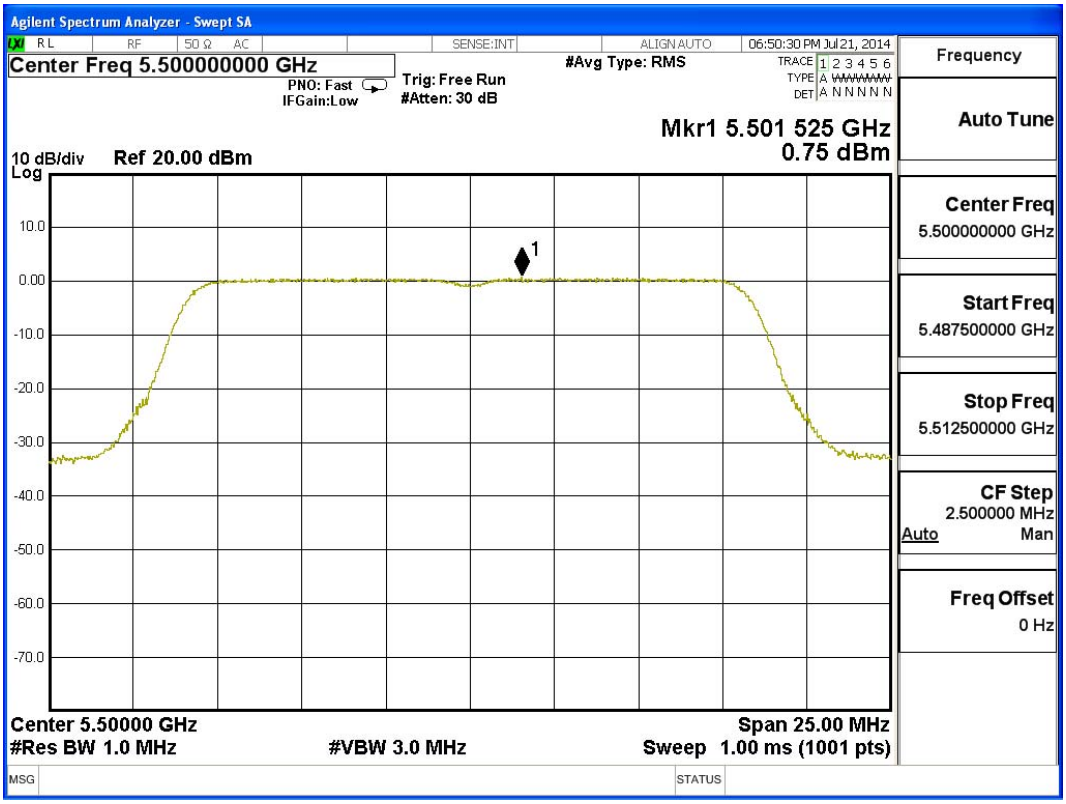
Channel 60:



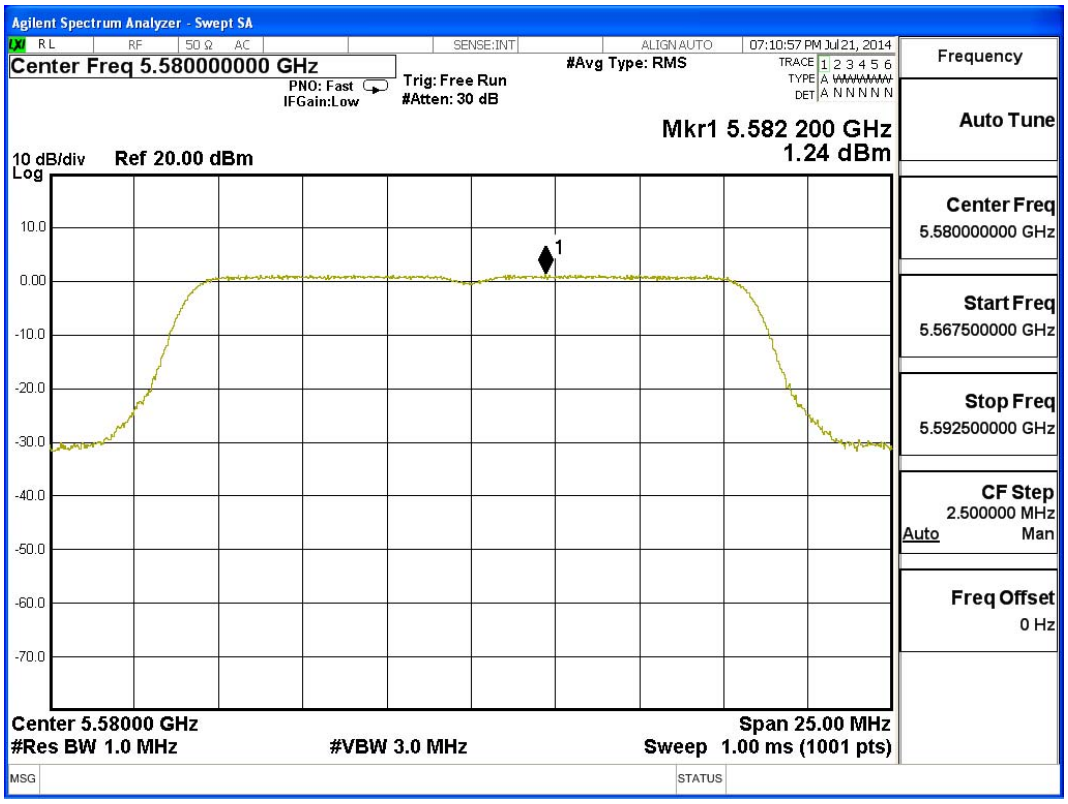
Channel 64:



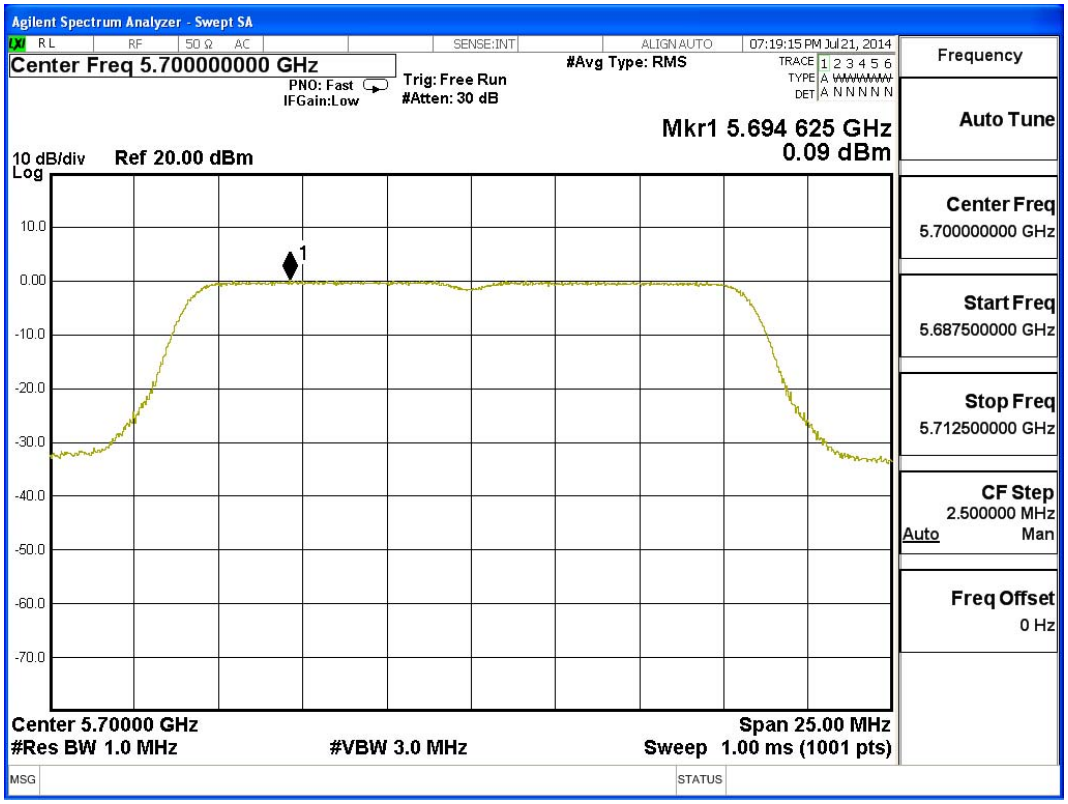
Channel 100:



Channel 116:



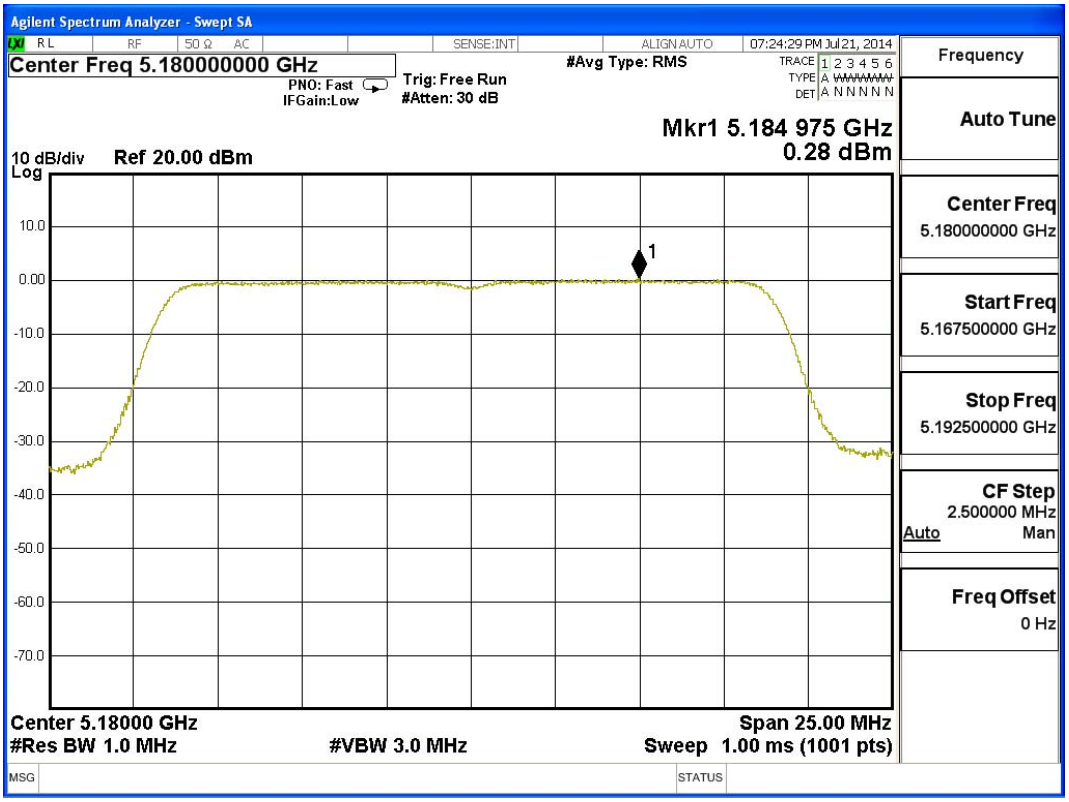
Channel 140:


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.700000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
07:19:15 PM Jul 21, 2014
Mkr1 5.694 625 GHz
0.09 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.70000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
Frequency
Auto Tune
Center Freq
5.700000000 GHz
Start Freq
5.687500000 GHz
Stop Freq
5.712500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

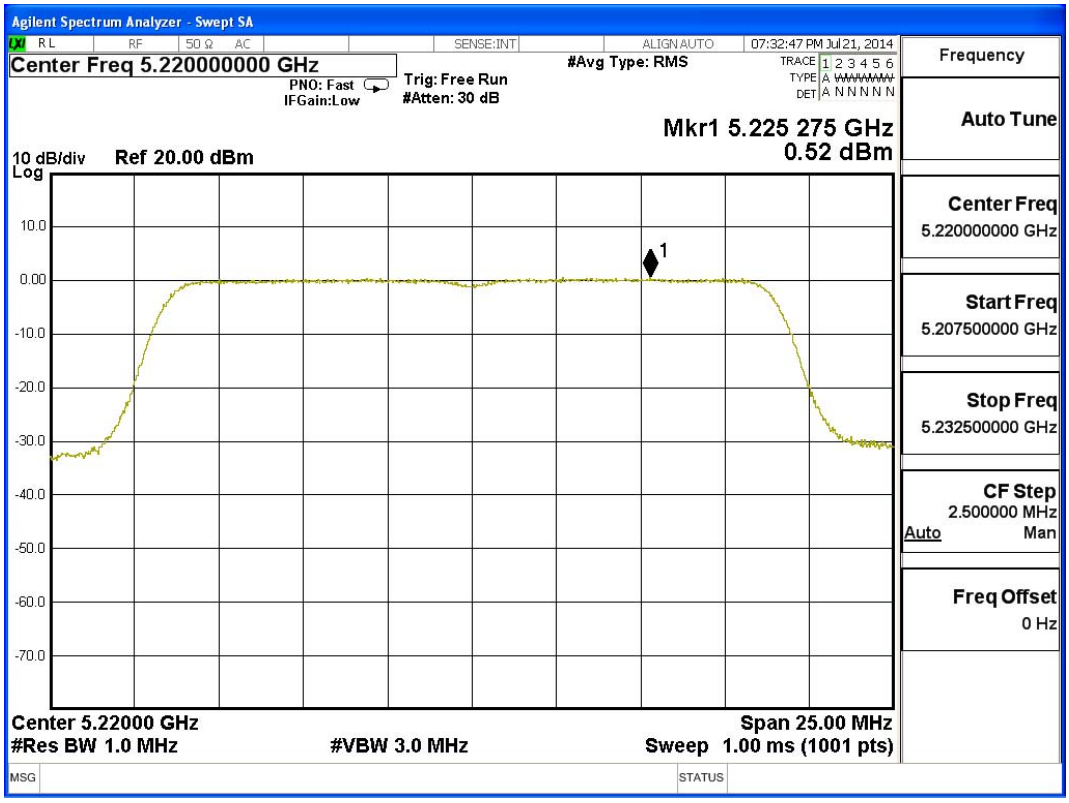
Product : Play-Fi Wireless Speaker
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Channel Number	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	0.280	<4	Pass
44	5220	0.520	<4	Pass
48	5240	-0.710	<4	Pass
52	5260	-0.610	<11	Pass
60	5300	-0.990	<11	Pass
64	5320	-1.490	<11	Pass
100	5500	-0.700	<11	Pass
116	5580	-0.040	<11	Pass
140	5700	-1.130	<11	Pass

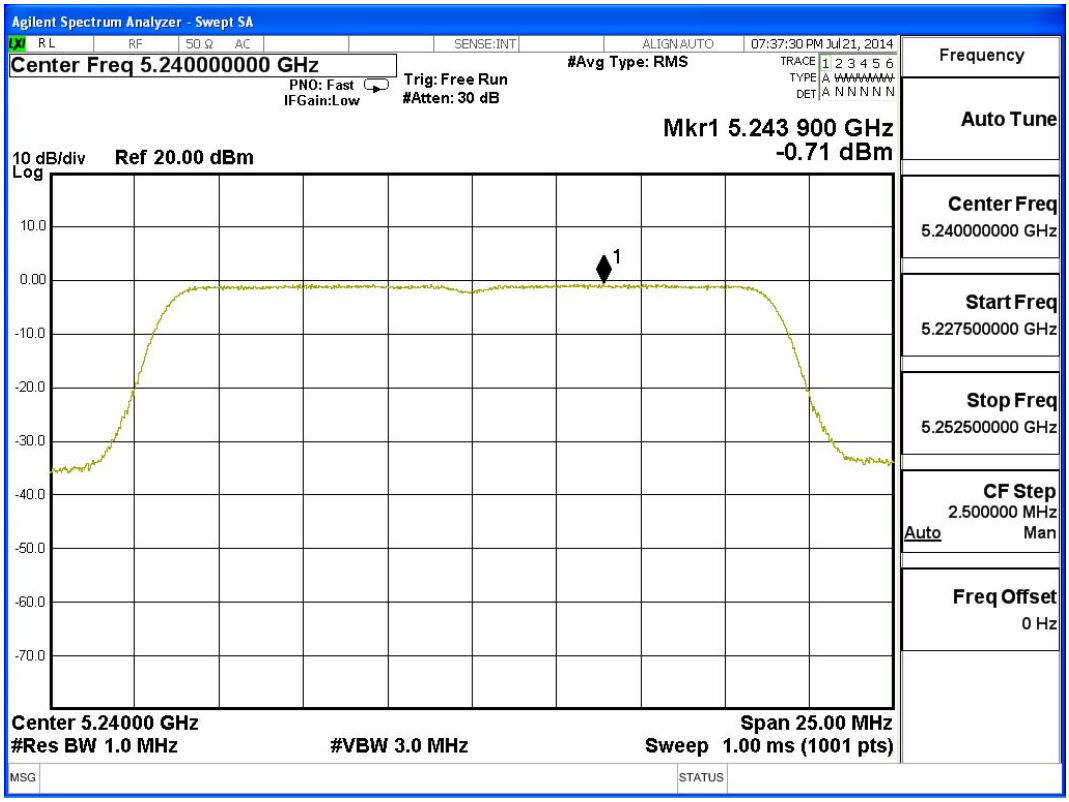
Channel 36



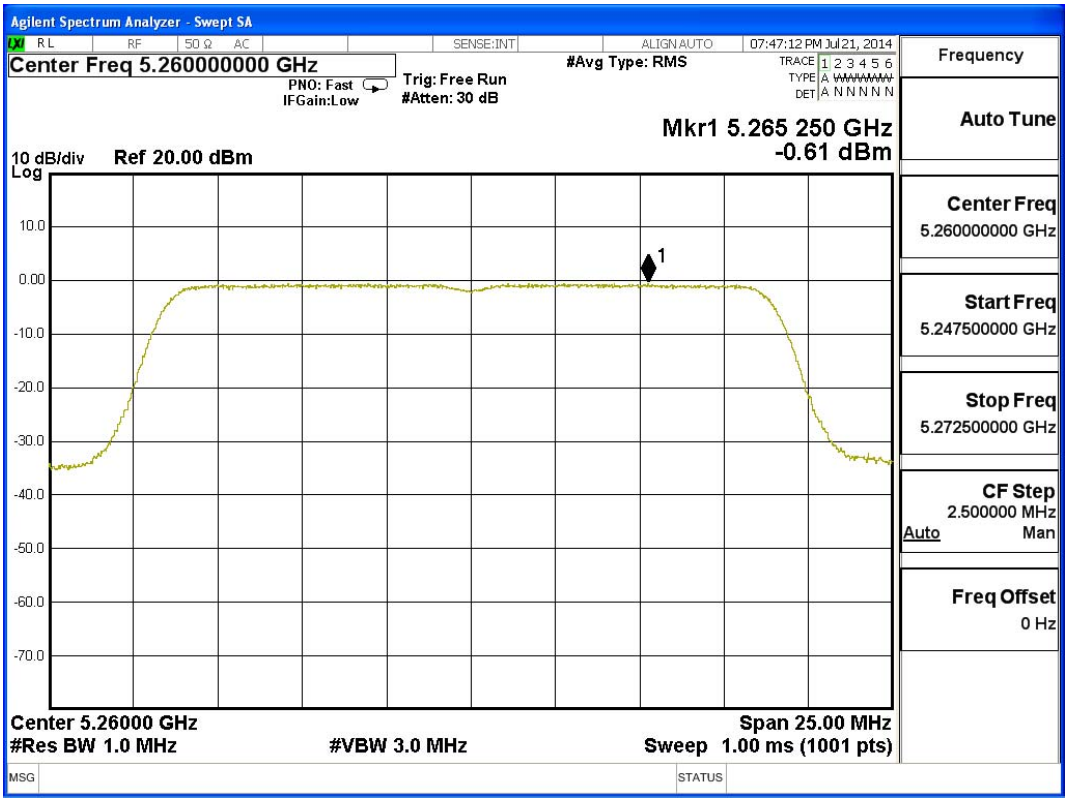
Channel 44



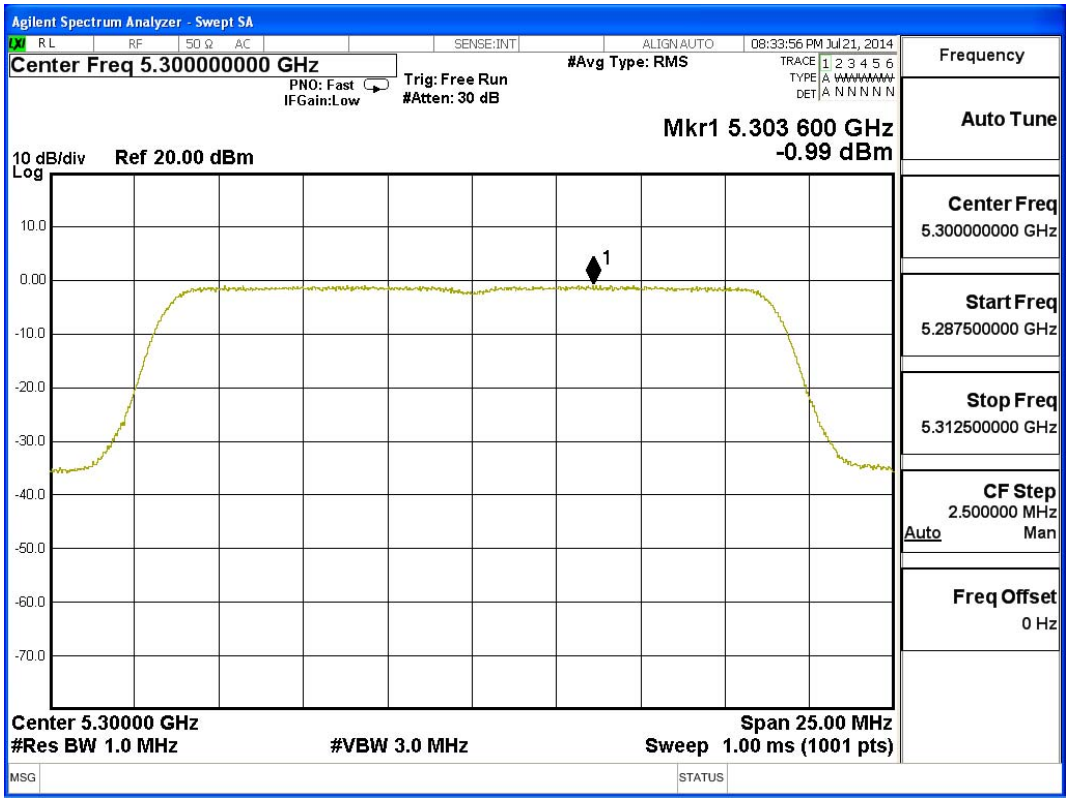
Channel 48



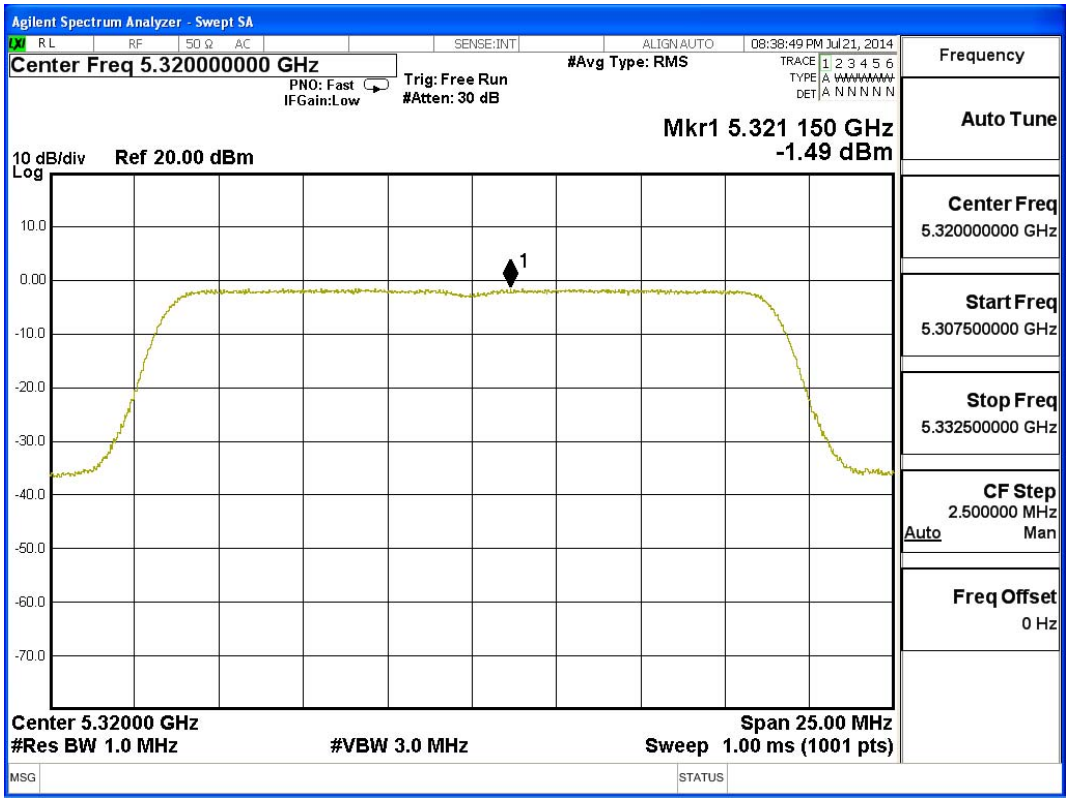
Channel 52



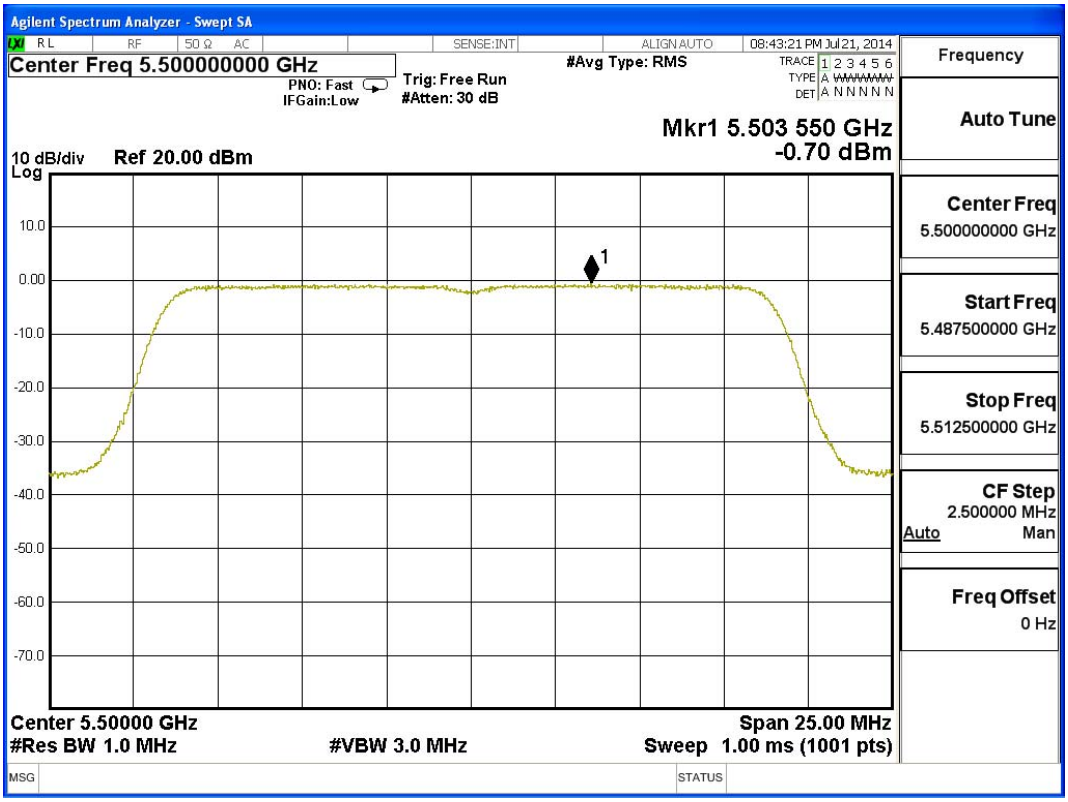
Channel 60



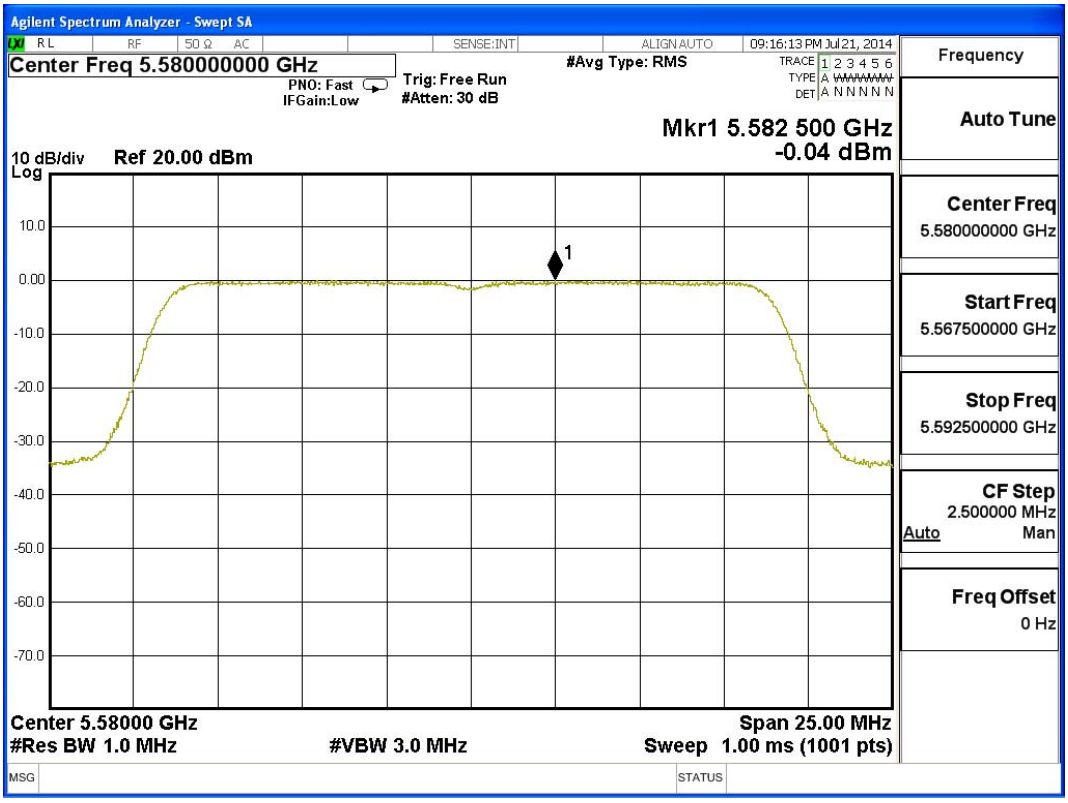
Channel 64



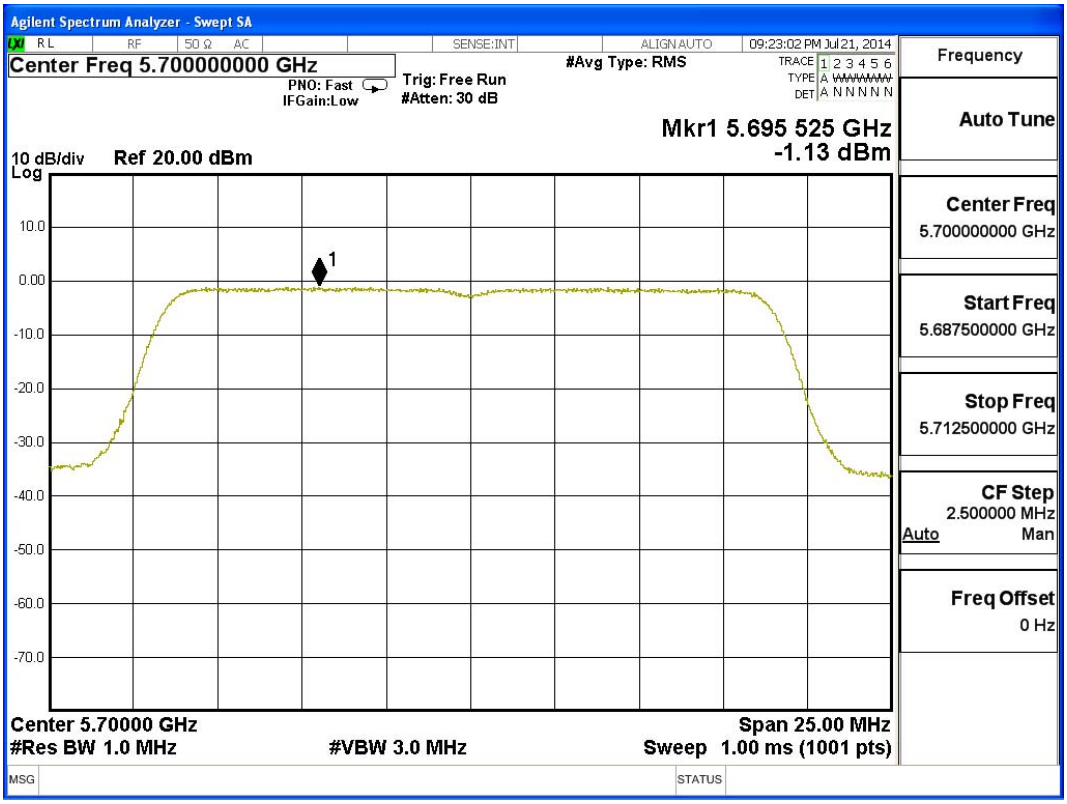
Channel 100



Channel 116



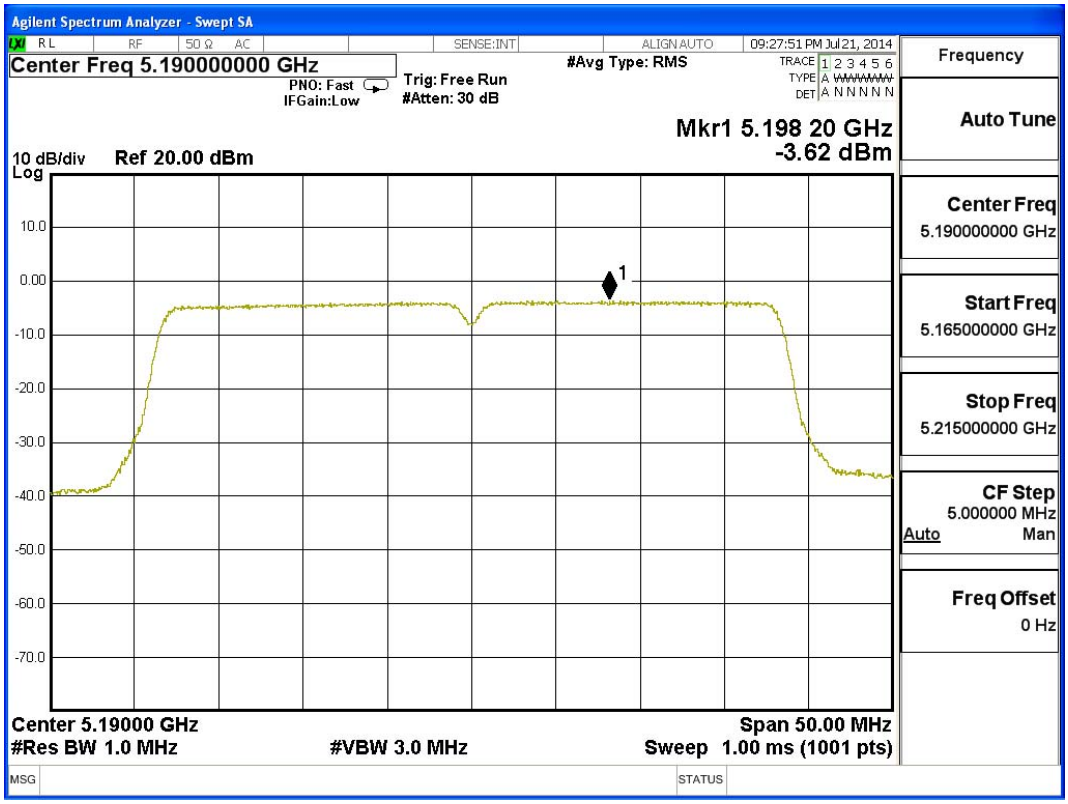
Channel 140


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.700000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
09:23:02 PM Jul 21, 2014
Mkr1 5.695 525 GHz
-1.13 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.70000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
Frequency
Auto Tune
Center Freq
5.700000000 GHz
Start Freq
5.687500000 GHz
Stop Freq
5.712500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

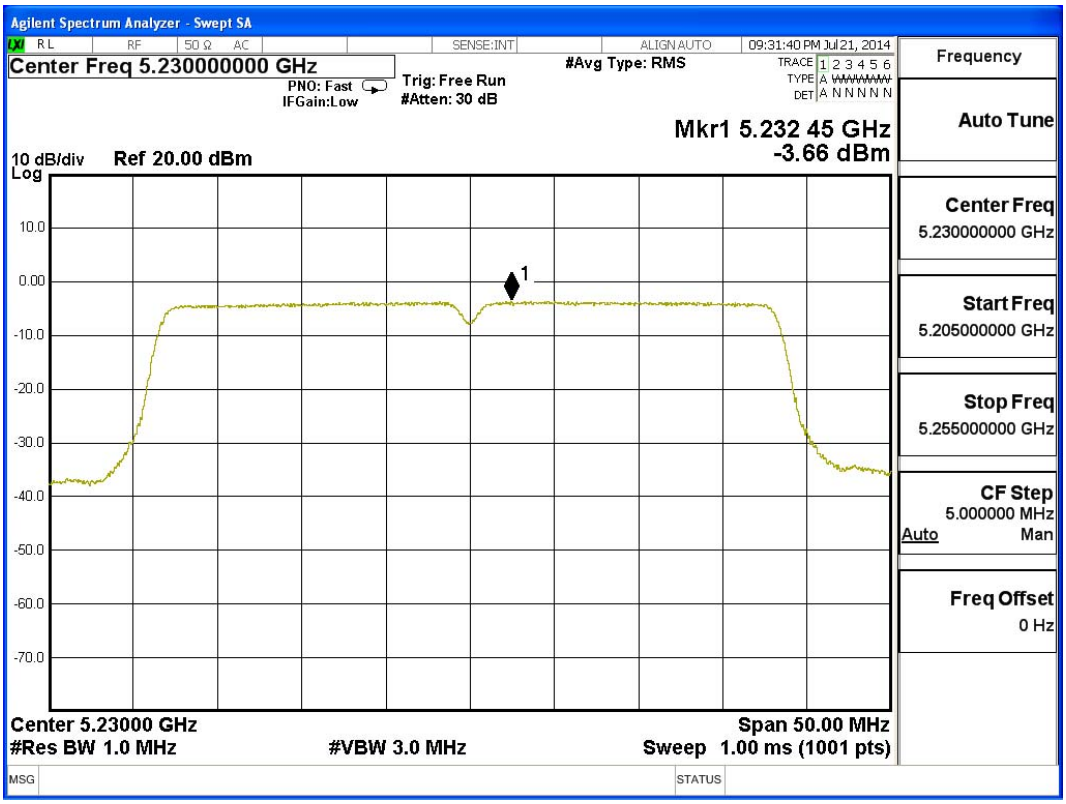
Product : Play-Fi Wireless Speaker
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel Number	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
38	5190	-3.620	<4	Pass
46	5230	-3.660	<4	Pass
54	5270	-3.850	<11	Pass
62	5310	-4.460	<11	Pass
102	5510	-4.110	<11	Pass
110	5550	-3.740	<11	Pass
134	5670	-3.560	<11	Pass

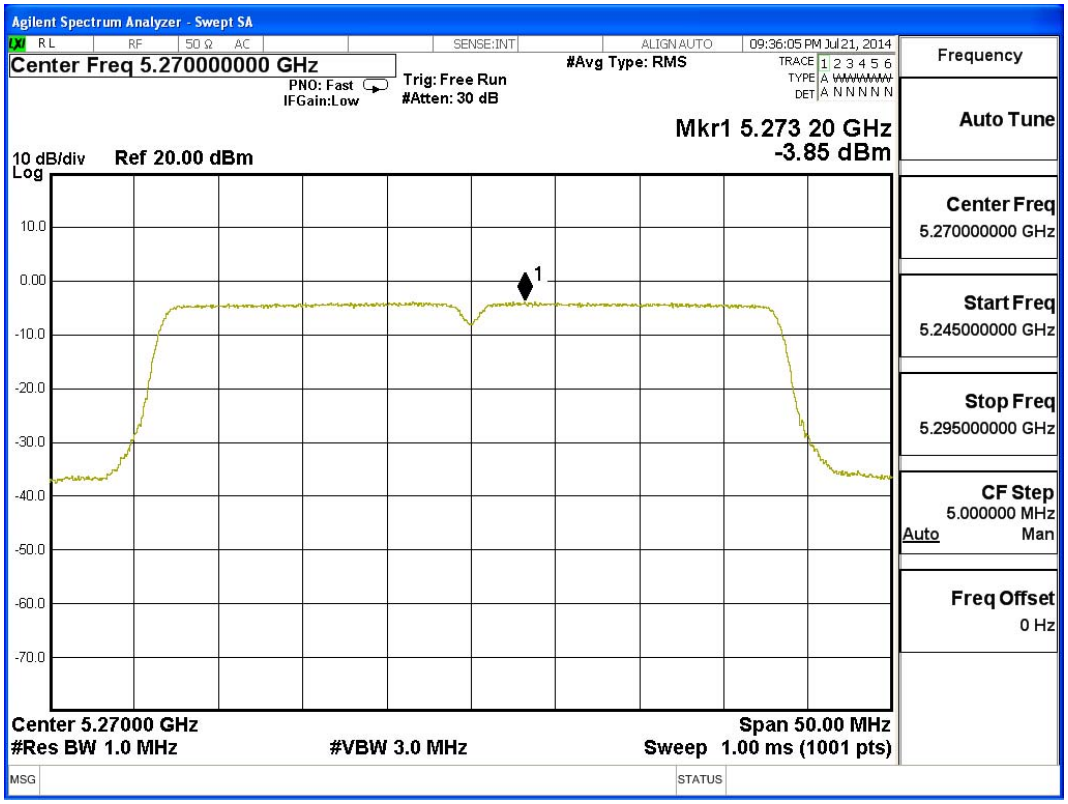
Channel 38



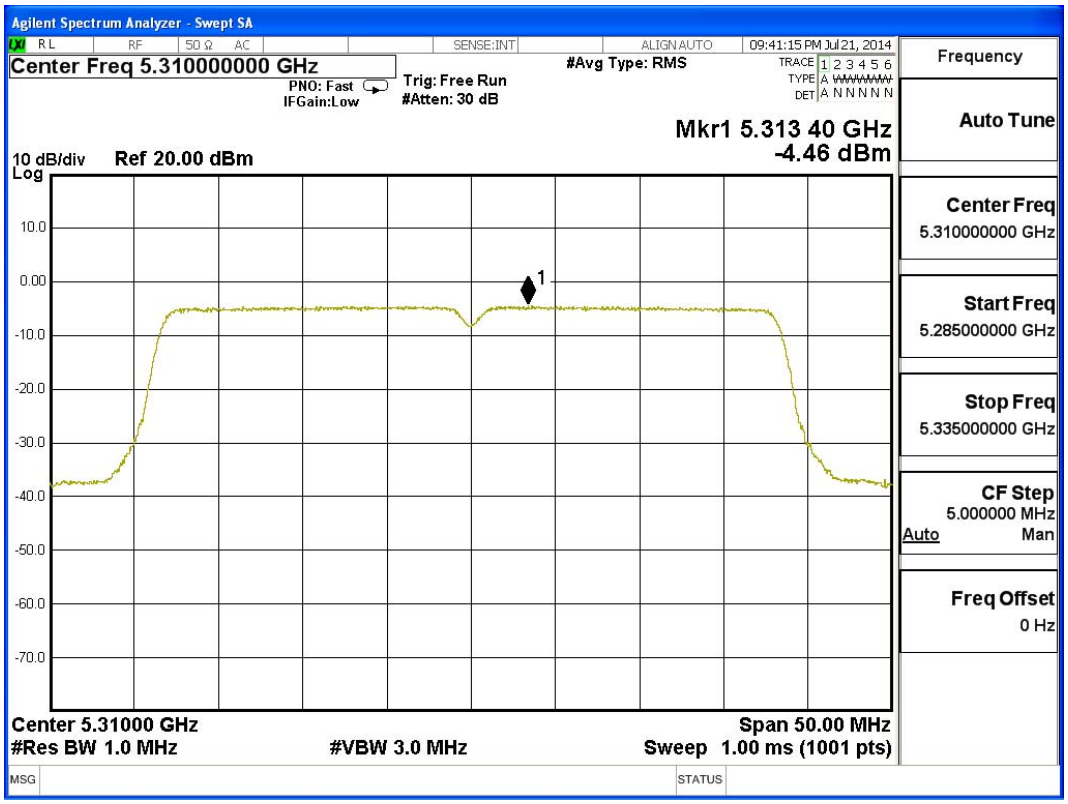
Channel 46



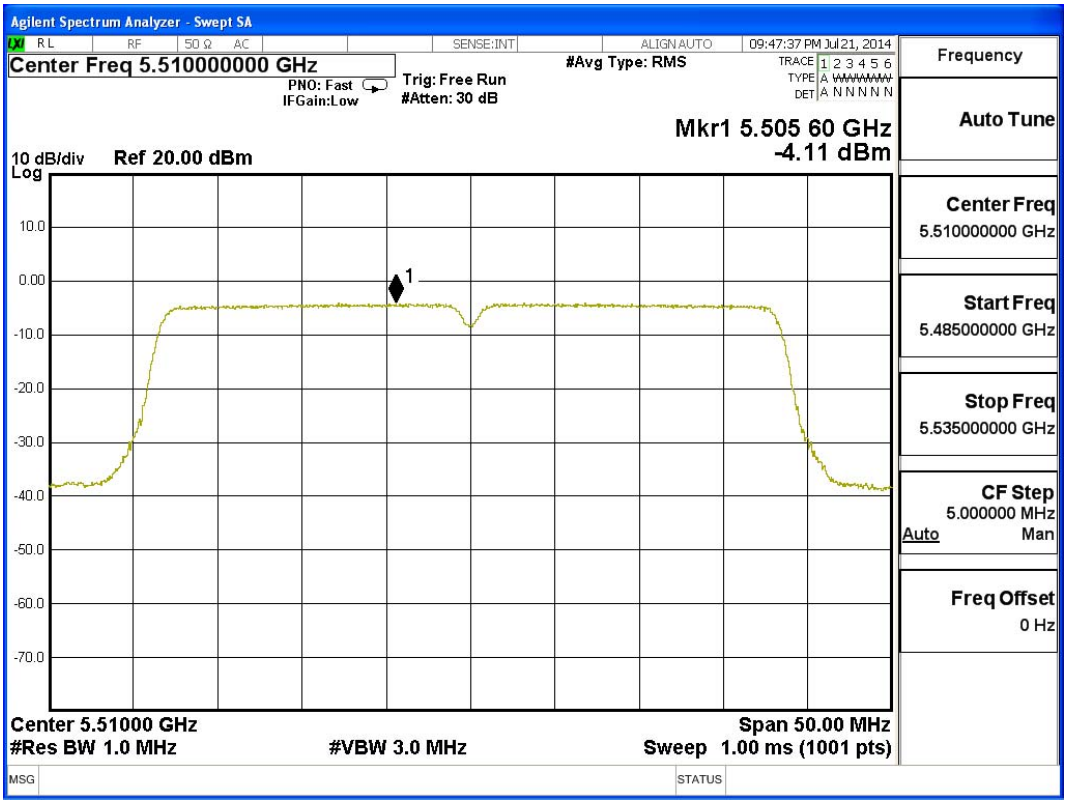
Channel 54



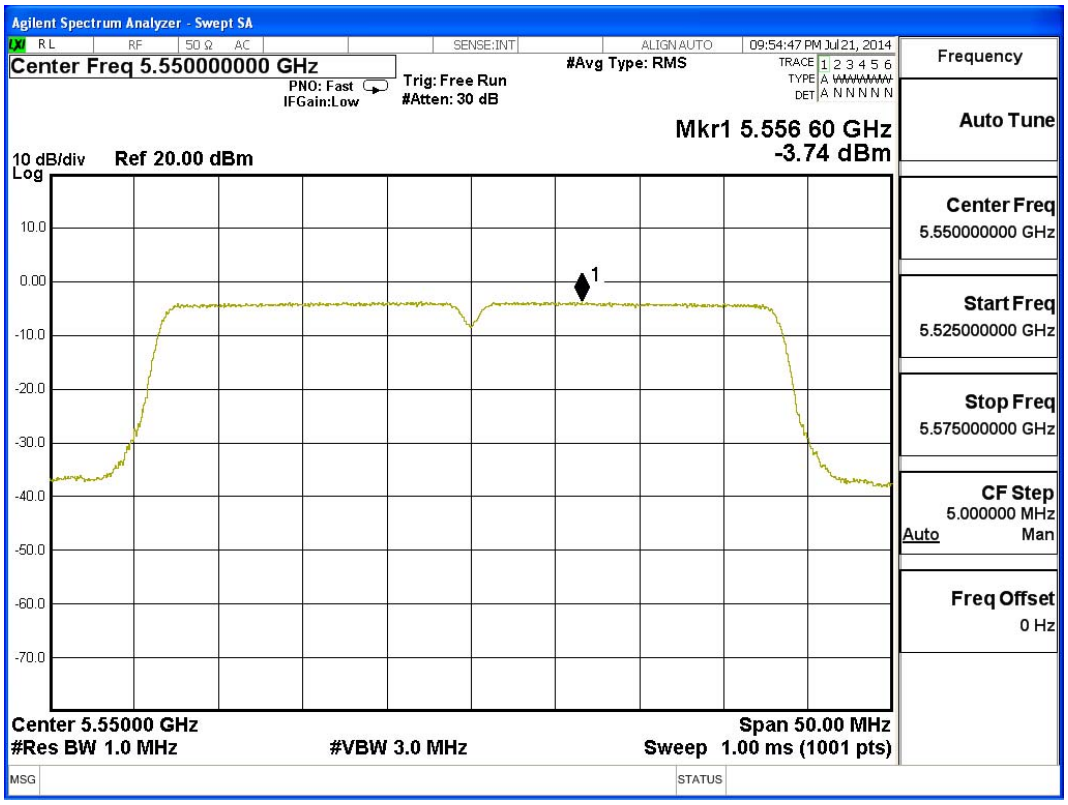
Channel 62



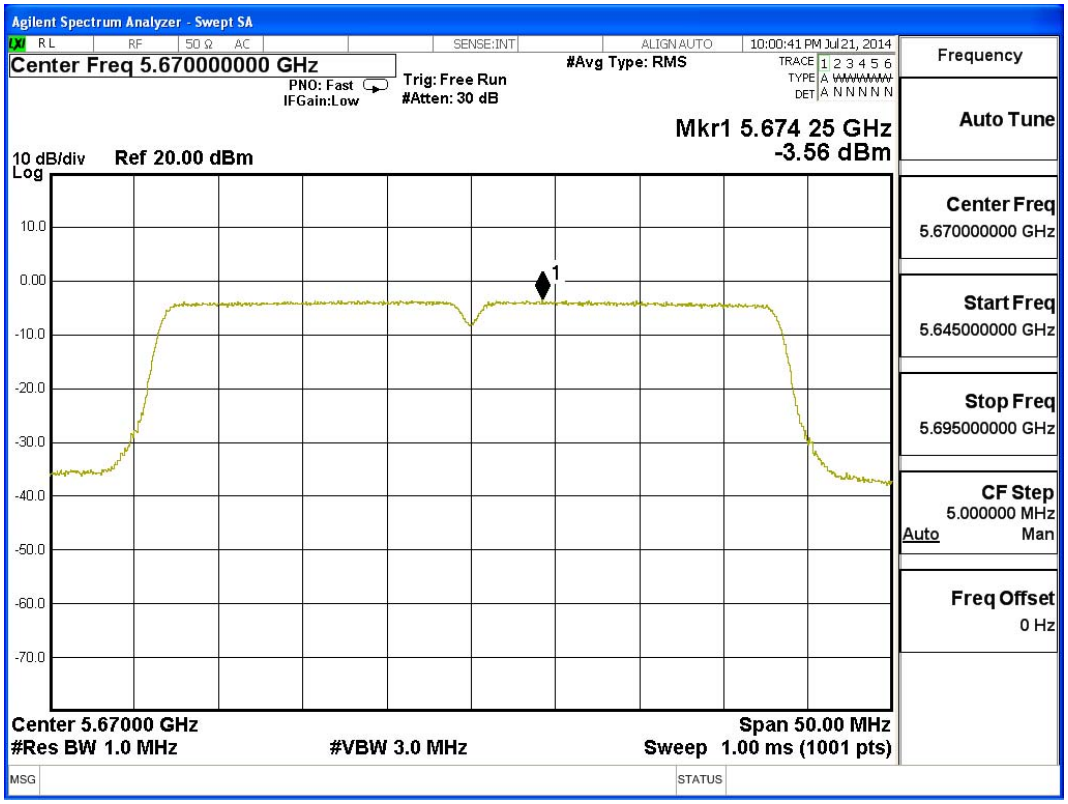
Channel 102



Channel 110



Channel 134


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.670000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
10:00:41 PM Jul 21, 2014
Mkr1 5.674 25 GHz
-3.56 dBm
10 dB/div
Log
Ref 20.00 dBm
Center 5.67000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
Frequency
Auto Tune
Center Freq
5.670000000 GHz
Start Freq
5.645000000 GHz
Stop Freq
5.695000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz

5. Peak Excursion

5.1. Test Equipment

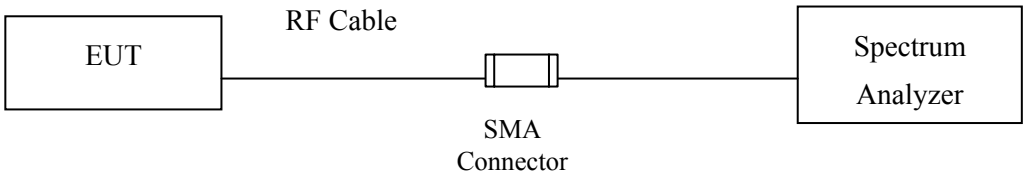
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun., 2014
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

Conduction Power Measurement



5.3. Limits

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

5.4. Test Procedure

The EUT was setup to ANSI C63.10, 2009; tested to DTS test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.

Step 1: Set the spectrum analyzer or EMI receiver span to view the entire emission bandwidth.

Step 2: Find the maximum of the peak-max-hold spectrum.

(Set RBW = 1 MHz, VBW ≥ 3 MHz, Detector = peak, Trace mode = max-hold, Allow the sweeps to continue until the trace stabilizes,Use the peak search function to find the peak of the spectrum.)

Step 3: Use the procedure found under KDB-789033 F) to measure the PPSD.

Step 4: Compute the ratio of the maximum of the peak-max-hold spectrum to the PPSD.

5.5. Uncertainty

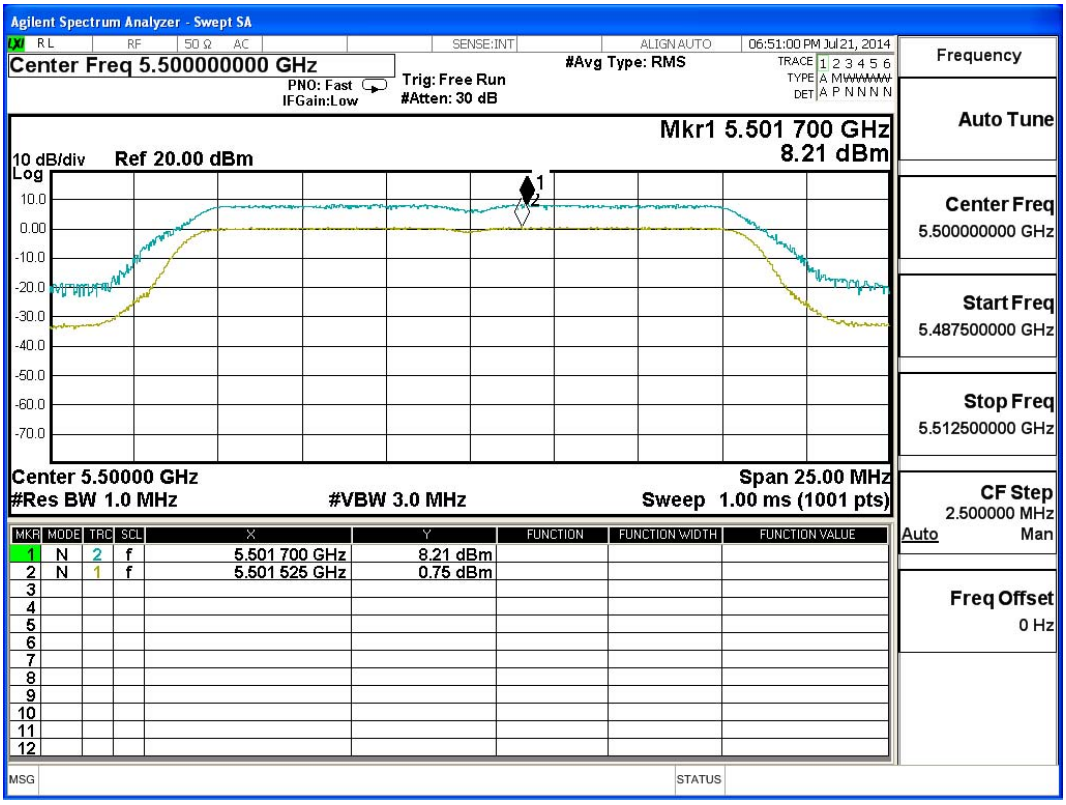
± 1.27 dB

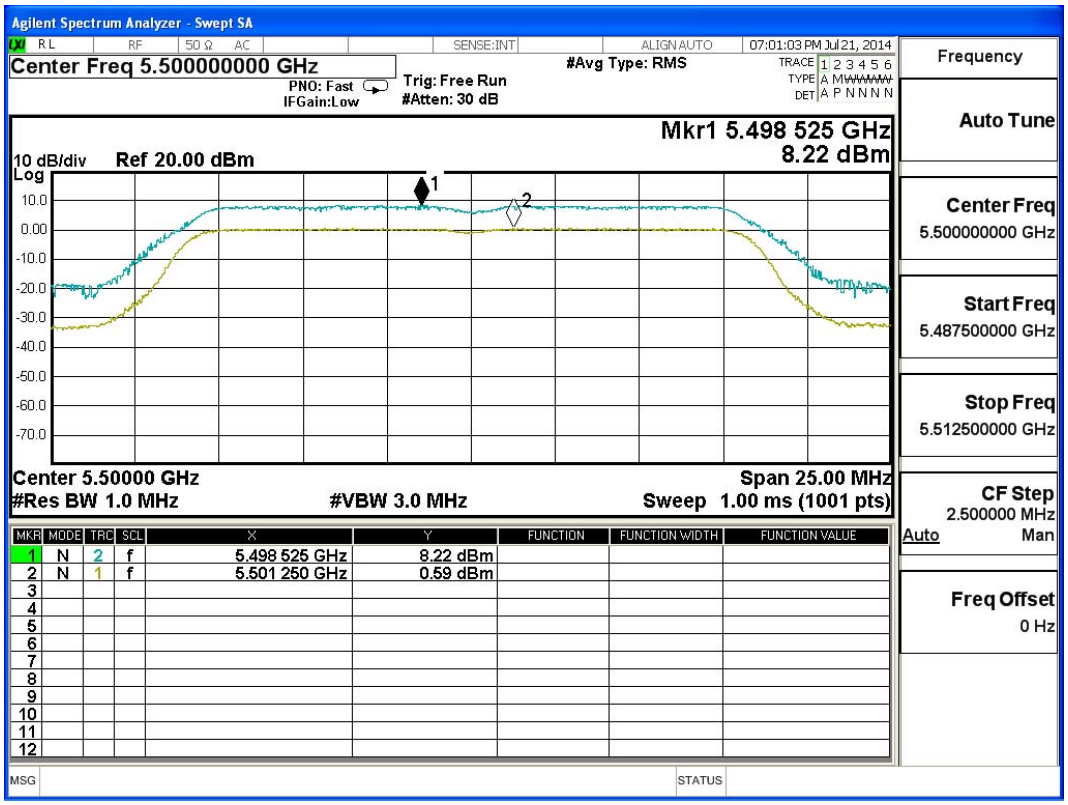
Test Result of Peak Excursion

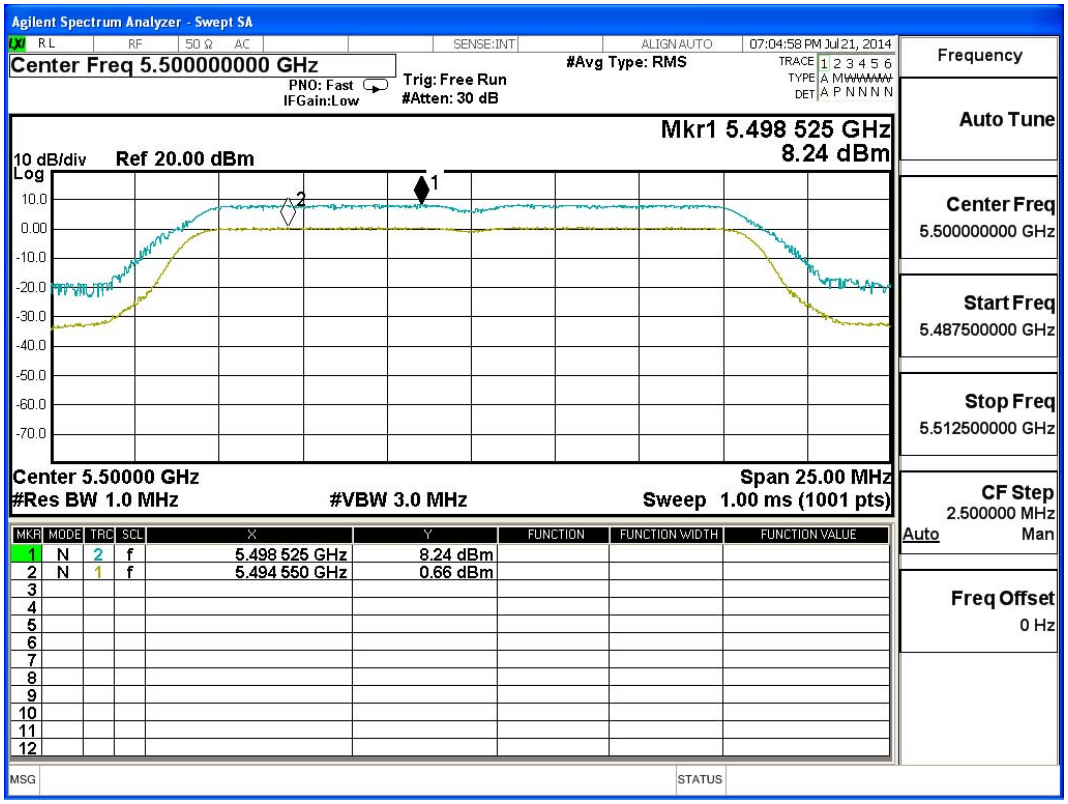
Product : Play-Fi Wireless Speaker
Test Item : Peak Excursion
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)

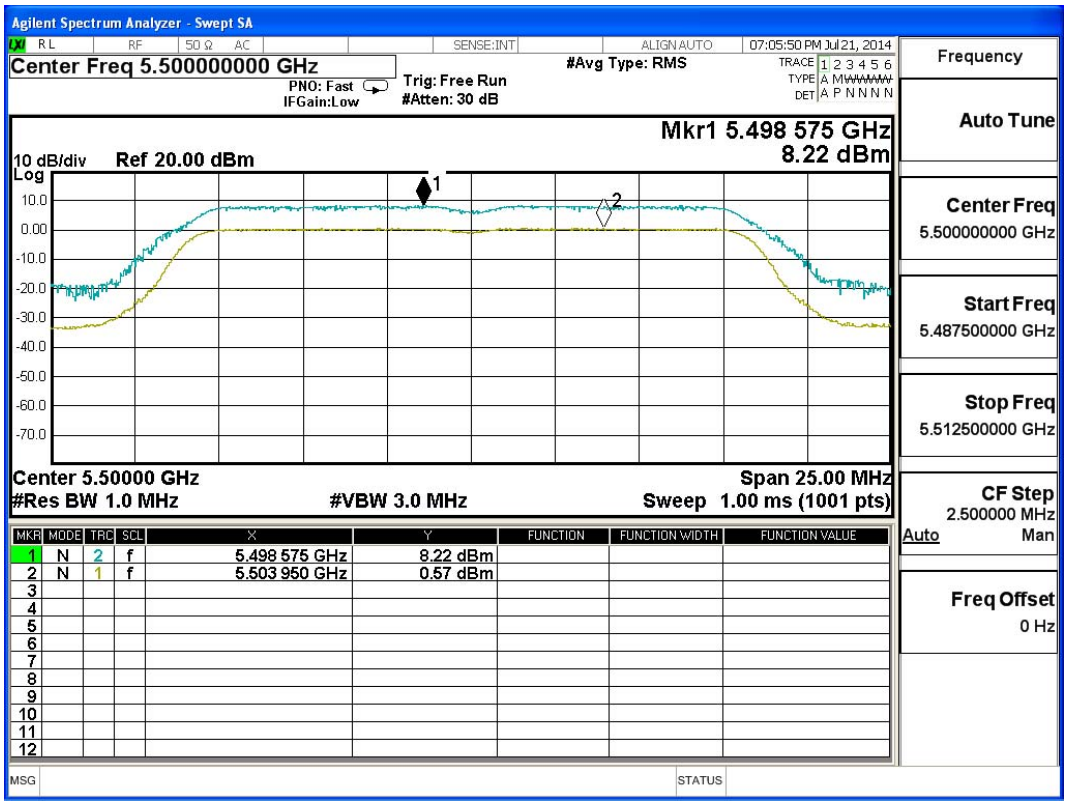
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
100	5500	6	7.460	<13	Pass
		12	7.630	<13	Pass
		24	7.580	<13	Pass
		54	7.650	<13	Pass

Channel 100:




Agilent Spectrum Analyzer - Swept SA
Center Freq 5.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
07:01:03 PM Jul 21, 2014
Mkr1 5.498 525 GHz
8.22 dBm
10 dB/div Ref 20.00 dBm
Center 5.50000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.498 525 GHz 8.22 dBm
2 N 1 f 5.501 250 GHz 0.59 dBm
Frequency
Auto Tune
Center Freq 5.500000000 GHz
Start Freq 5.487500000 GHz
Stop Freq 5.512500000 GHz
CF Step 2.500000 MHz
Auto Man
Freq Offset 0 Hz

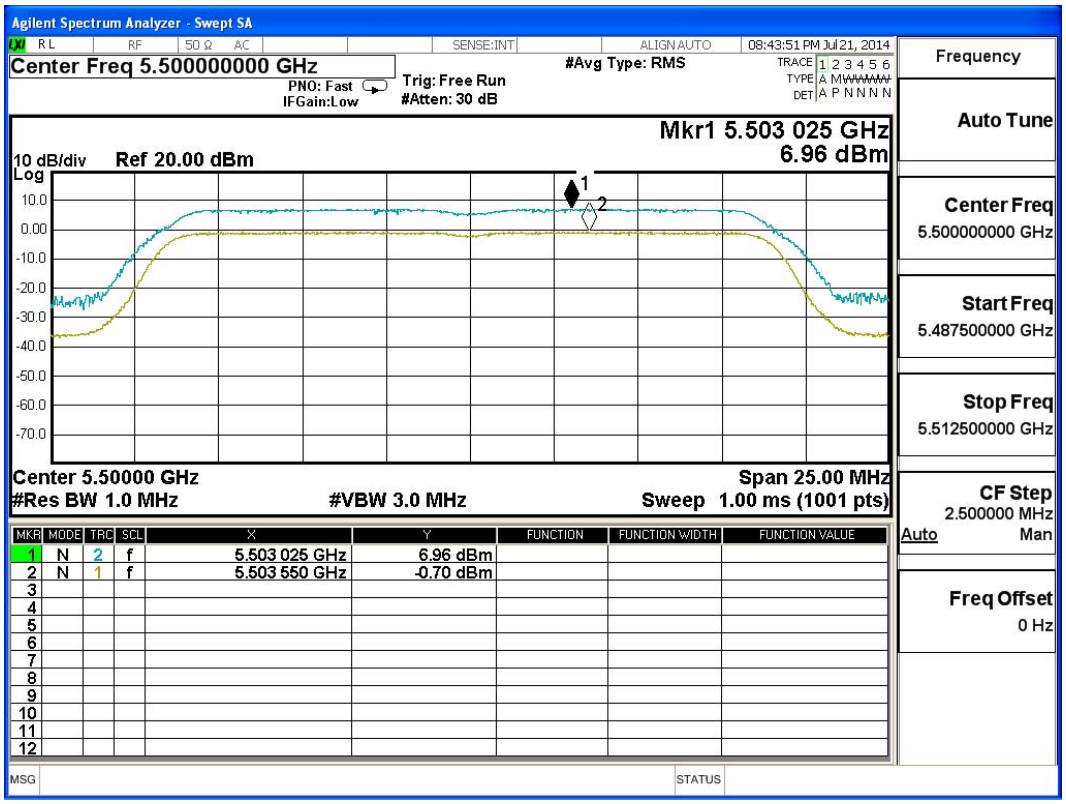

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
07:04:58 PM Jul 21, 2014
Mkr1 5.498 525 GHz
8.24 dBm
10 dB/div Ref 20.00 dBm
Center 5.50000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.498 525 GHz 8.24 dBm
2 N 1 f 5.494 550 GHz 0.66 dBm
Frequency
Auto Tune
Center Freq 5.500000000 GHz
Start Freq 5.487500000 GHz
Stop Freq 5.512500000 GHz
CF Step 2.500000 MHz
Auto Man
Freq Offset 0 Hz

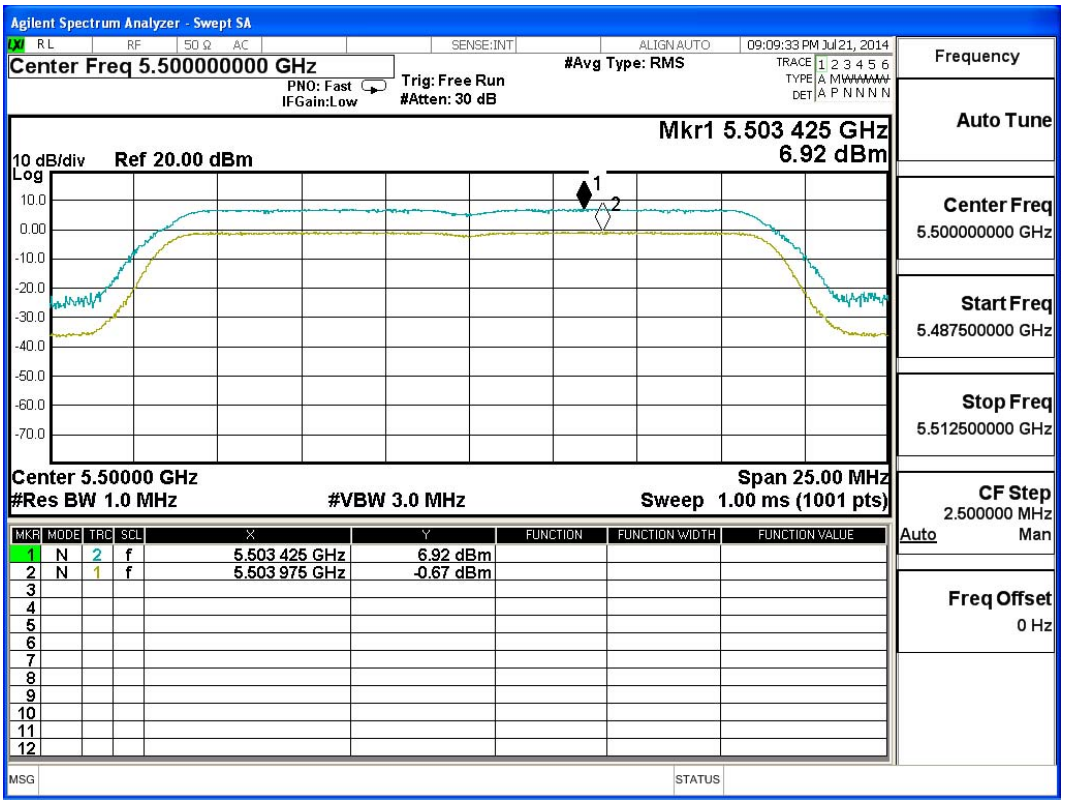

Agilent Spectrum Analyzer - Swept SA
Center Freq 5.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
07:05:50 PM Jul 21, 2014
Mkr1 5.498 575 GHz
8.22 dBm
10 dB/div
Ref 20.00 dBm
Log
Center 5.50000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
1 N 2 f 5.498 575 GHz 8.22 dBm
2 N 1 f 5.503 950 GHz 0.57 dBm
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
5.487500000 GHz
Stop Freq
5.512500000 GHz
CF Step
2.500000 MHz
Auto Man
Freq Offset
0 Hz

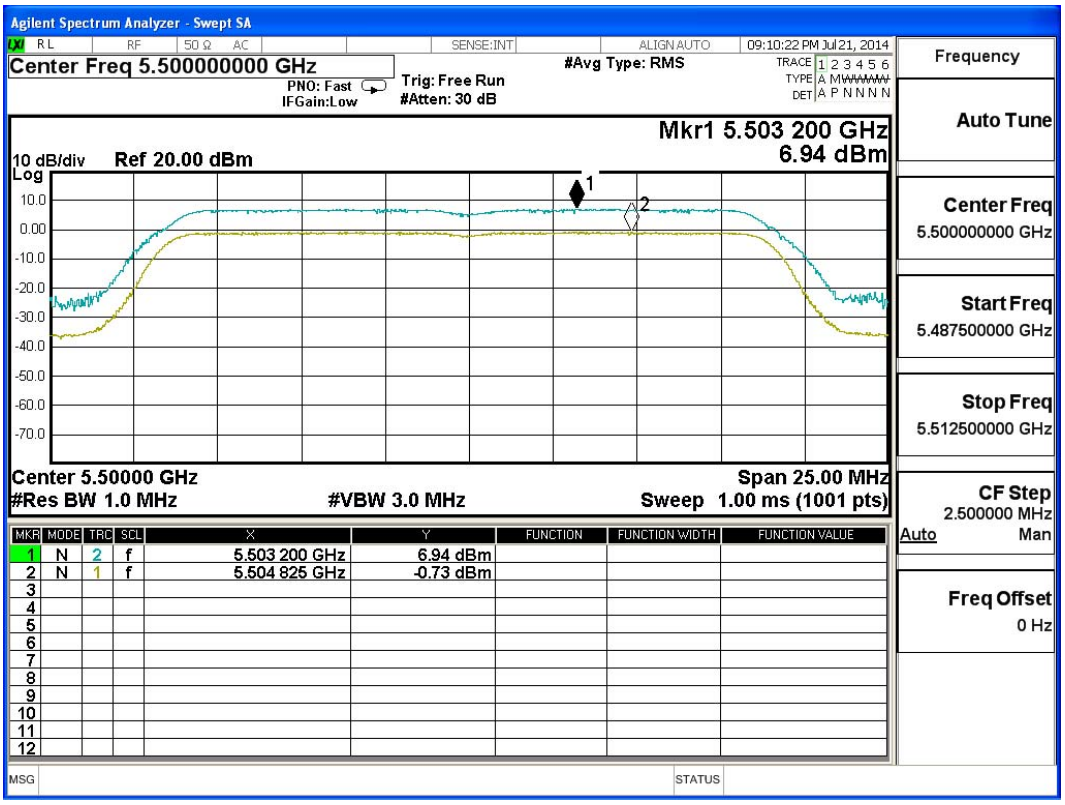
Product : Play-Fi Wireless Speaker
Test Item : Peak Excursion
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

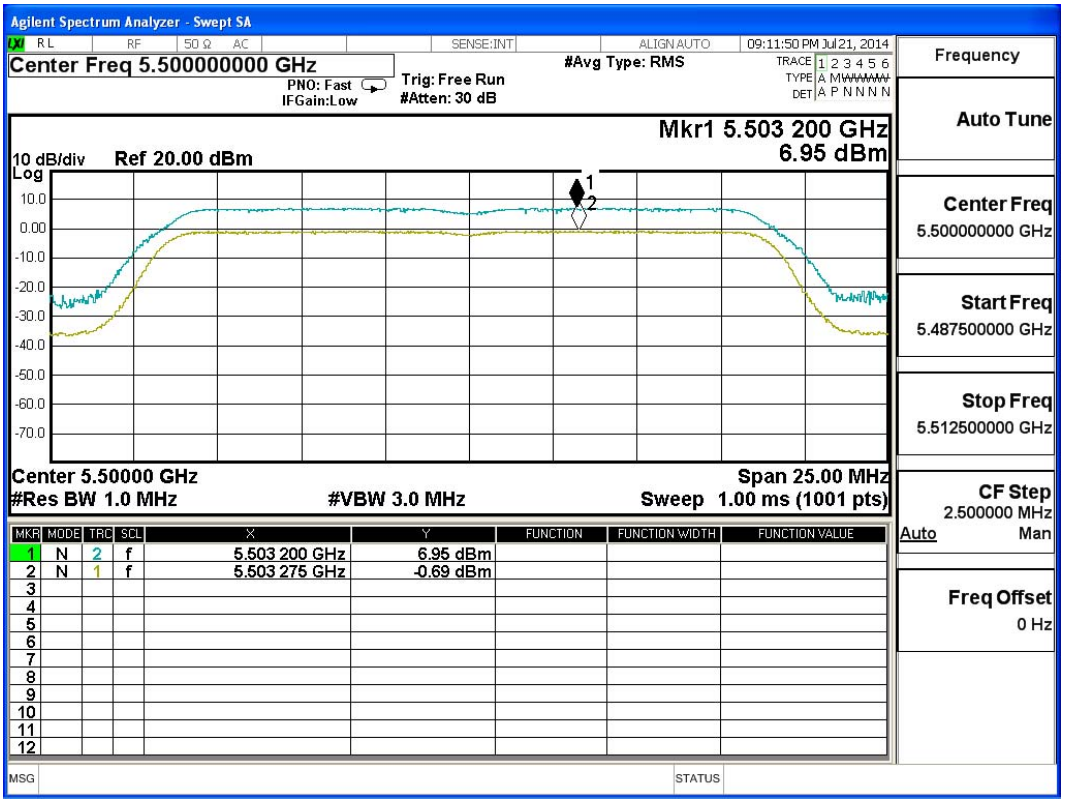
Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
100	5500	MCS (0)	7.660	<13	Pass
		MCS (2)	7.590	<13	Pass
		MCS (4)	7.670	<13	Pass
		MCS (7)	7.640	<13	Pass

Channel 100:




Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:09:33 PM Jul 21, 2014
Center Freq 5.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.503 425 GHz
6.92 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.50000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.503 425 GHz 6.92 dBm
2 N 1 f 5.503 975 GHz -0.67 dBm
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
5.487500000 GHz
Stop Freq
5.512500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

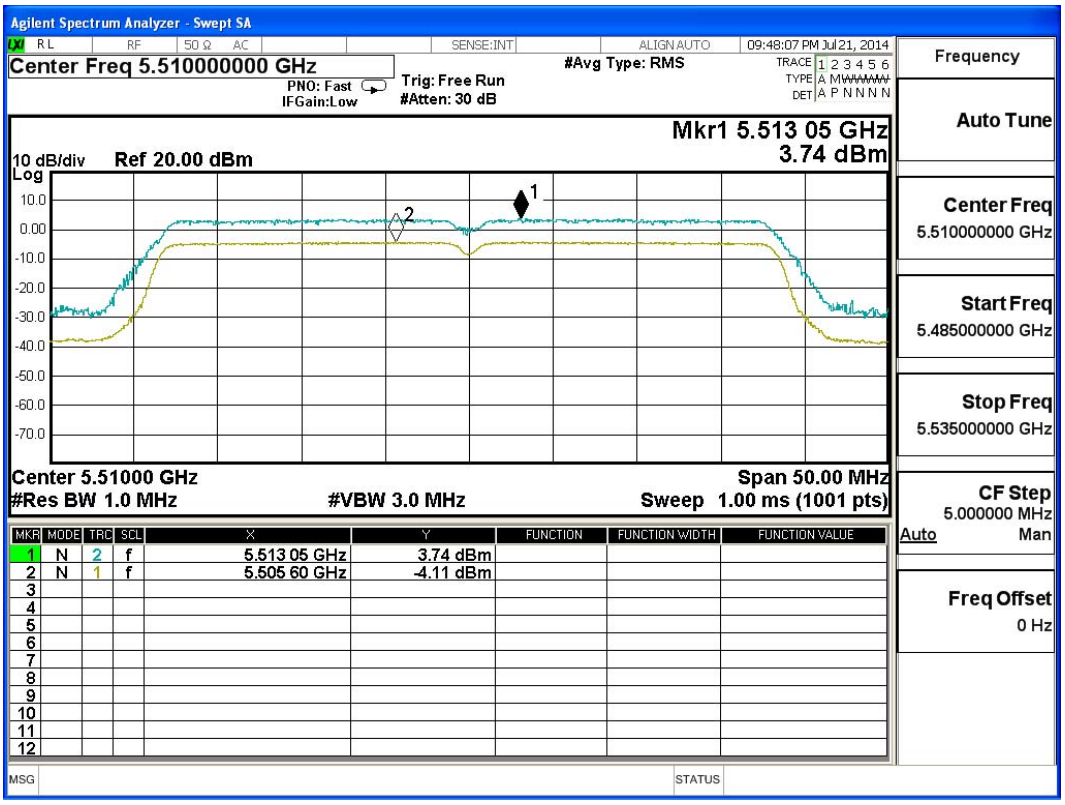

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:10:22 PM Jul 21, 2014
Center Freq 5.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.503 200 GHz
6.94 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.50000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.503 200 GHz 6.94 dBm
2 N 1 f 5.504 825 GHz -0.73 dBm
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
5.487500000 GHz
Stop Freq
5.512500000 GHz
CF Step
2.500000 MHz
Auto
Man
Freq Offset
0 Hz

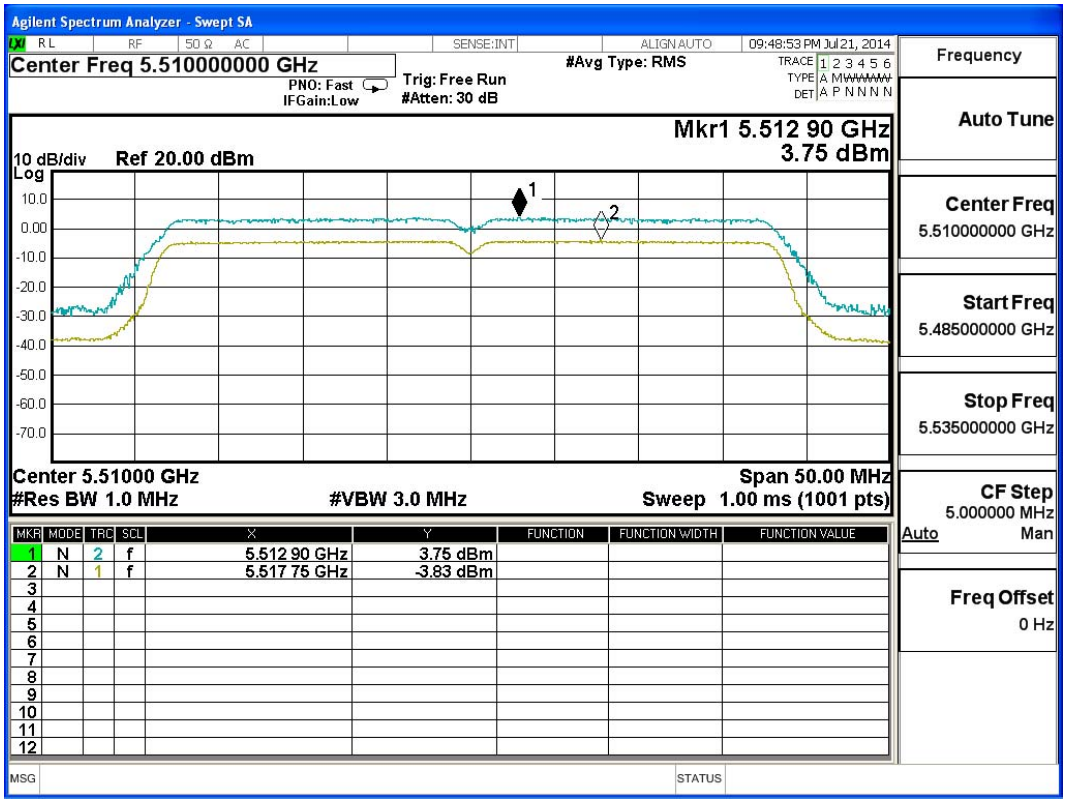

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:11:50 PM Jul 21, 2014
Center Freq 5.500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.503 200 GHz
6.95 dBm
10 dB/div
Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.50000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 25.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.503 200 GHz 6.95 dBm
2 N 1 f 5.503 275 GHz -0.69 dBm
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
5.487500000 GHz
Stop Freq
5.512500000 GHz
CF Step
2.500000 MHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS

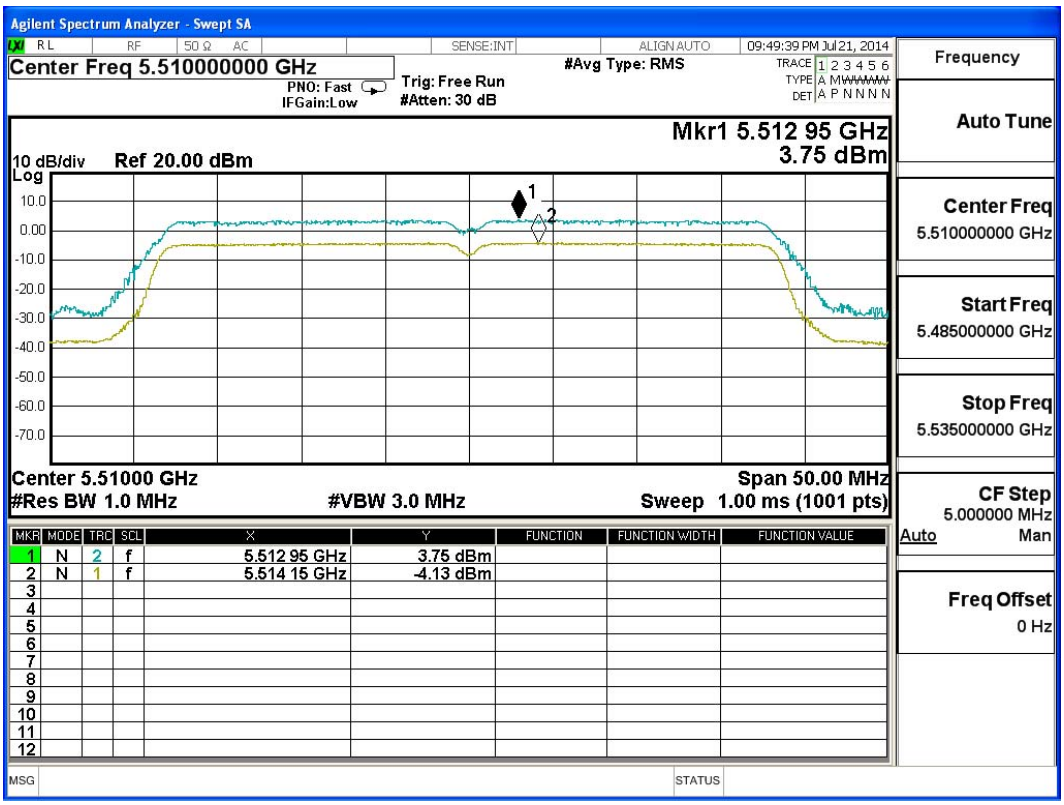
Product : Play-Fi Wireless Speaker
Test Item : Peak Excursion
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel No.	Frequency (MHz)	Data Rate (Mbps)	Measurement Level (dB)	Required Limit (dB)	Result
102	5510	MCS (0)	7.850	<13	Pass
		MCS (2)	7.580	<13	Pass
		MCS (4)	7.880	<13	Pass
		MCS (7)	7.820	<13	Pass

Channel 102:




Agilent Spectrum Analyzer - Swept SA
RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:48:53 PM Jul 21, 2014
Center Freq 5.510000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.512 90 GHz
3.75 dBm
10 dB/div Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.51000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.512 90 GHz 3.75 dBm
2 N 1 f 5.517 75 GHz -3.83 dBm
Frequency
Auto Tune
Center Freq
5.510000000 GHz
Start Freq
5.485000000 GHz
Stop Freq
5.535000000 GHz
CF Step
5.000000 MHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RL RF 50 Ω AC SENSE:INT ALIGN AUTO 09:49:39 PM Jul 21, 2014
Center Freq 5.510000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
TRACE 1 2 3 4 5 6
TYPE A MWWWWW
DET A P N N N N
Mkr1 5.512 95 GHz
3.75 dBm
10 dB/div Ref 20.00 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.51000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 2 f 5.512 95 GHz 3.75 dBm
2 N 1 f 5.514 15 GHz -4.13 dBm
Frequency
Auto Tune
Center Freq
5.510000000 GHz
Start Freq
5.485000000 GHz
Stop Freq
5.535000000 GHz
CF Step
5.000000 MHz
Auto Man
Freq Offset
0 Hz
MSG
STATUS