7. Occupied Bandwidth

7.1. Test Equipment

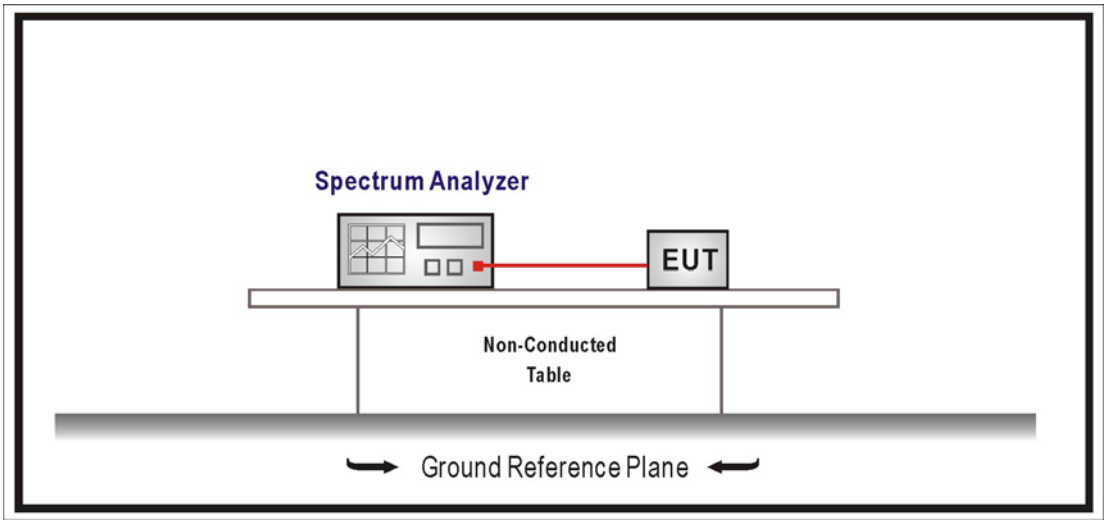
The following test equipments are used during the test:

Occupied Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Test Procedures

The EUT was setup according to ANSI C63.4: 2009; tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

7.4. Limits

The 6 dB bandwidth must be greater than 500 kHz.

7.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

7.6. Uncertainty

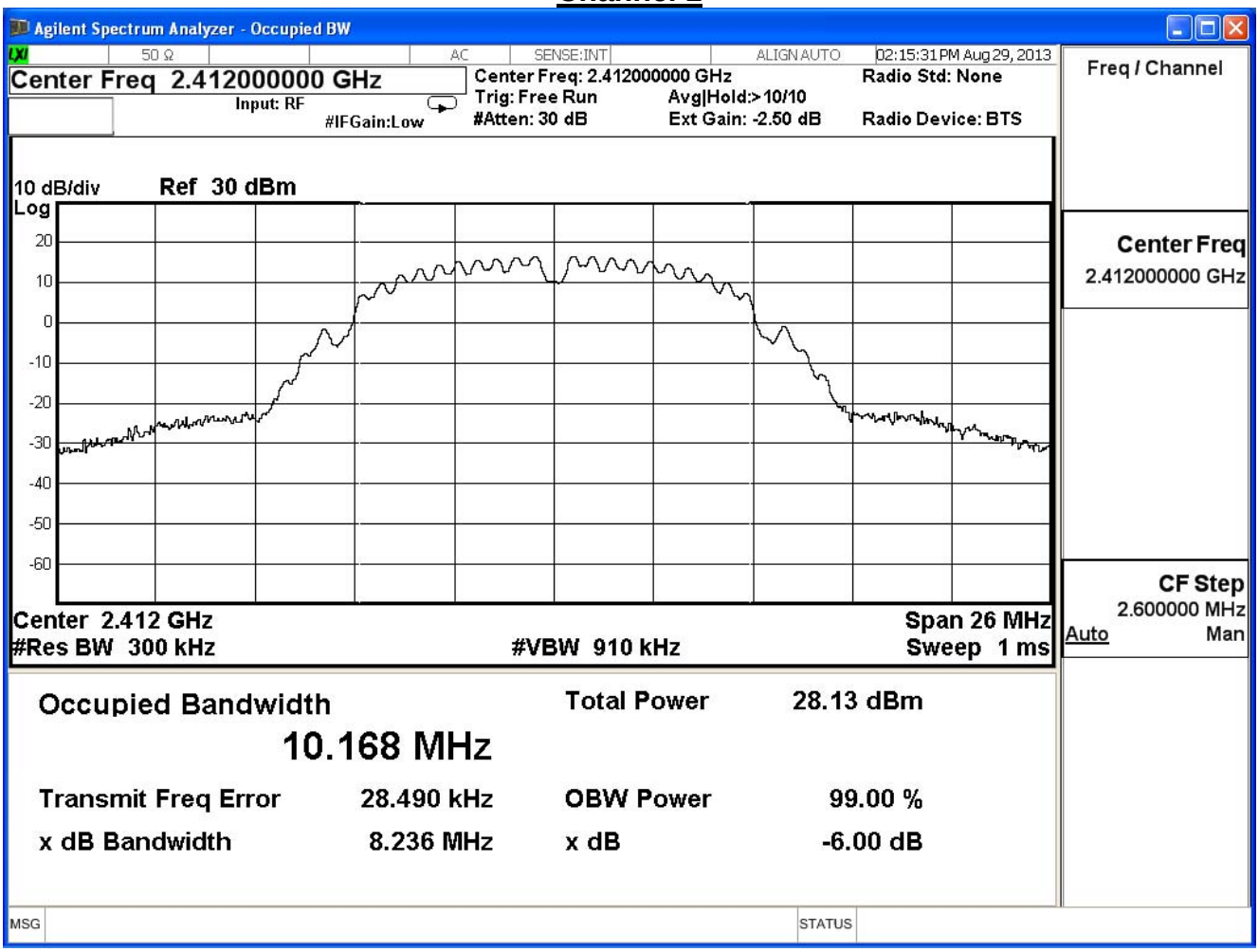
The measurement uncertainty is defined as ±150Hz

7.7. Test Result

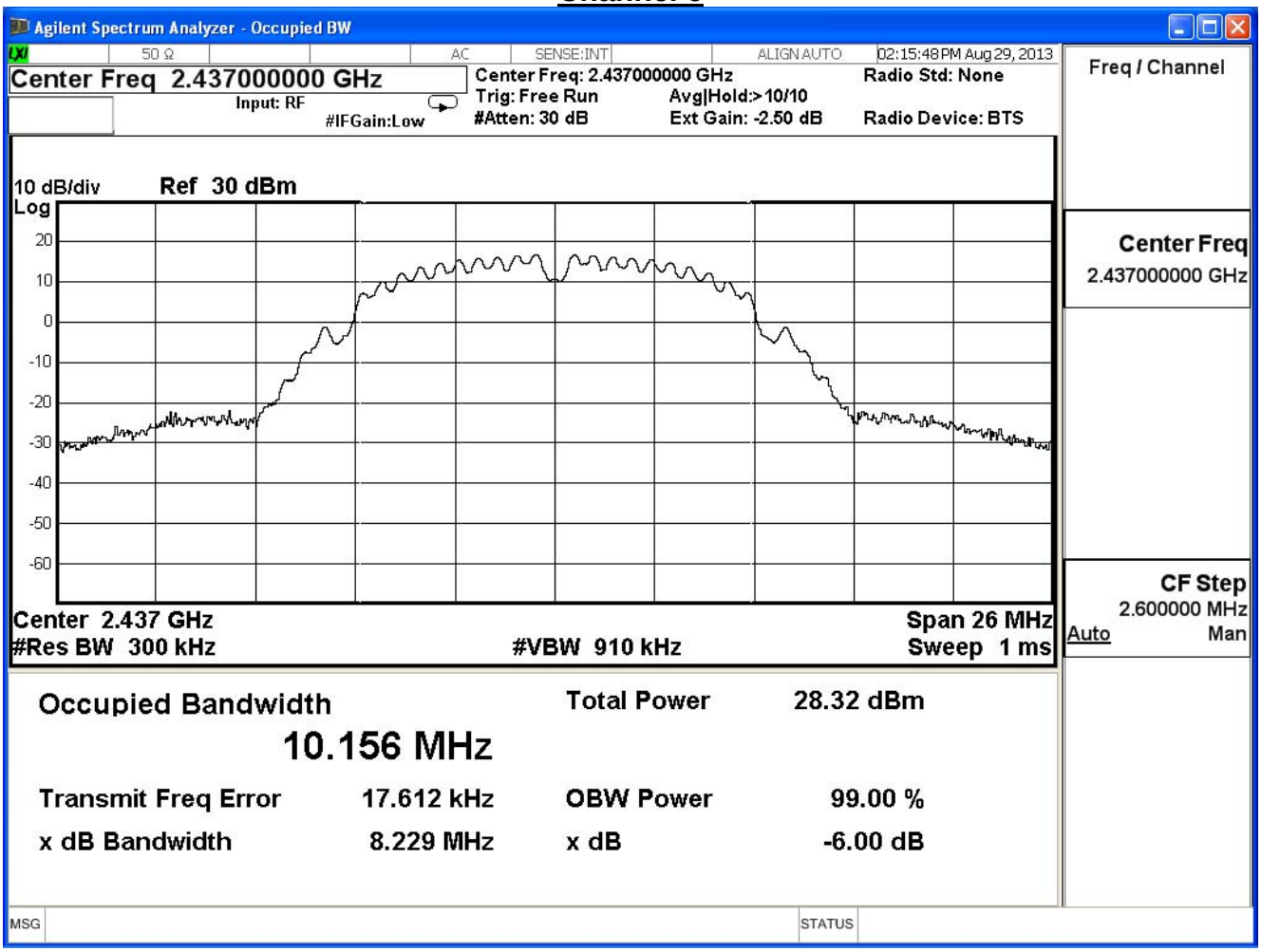
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

802.11 b				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	8.24	≧0.5	Pass
6	2437	8.23	≧0.5	Pass
11	2462	8.23	≧0.5	Pass

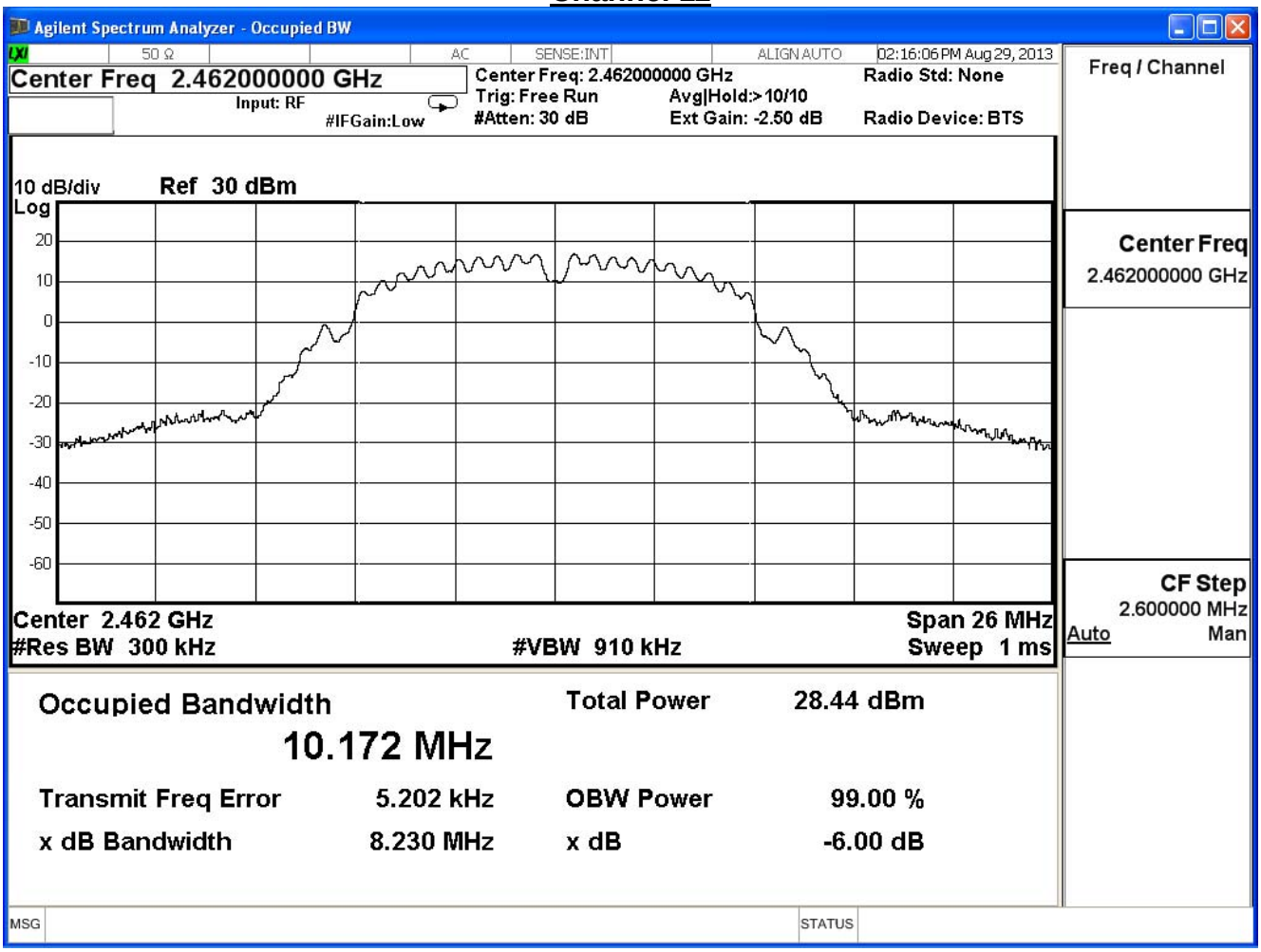
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:15:48 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
10.156 MHz
Total Power
28.32 dBm
Transmit Freq Error
17.612 kHz
OBW Power
99.00 %
x dB Bandwidth
8.229 MHz
x dB
-6.00 dB
MSG
STATUS

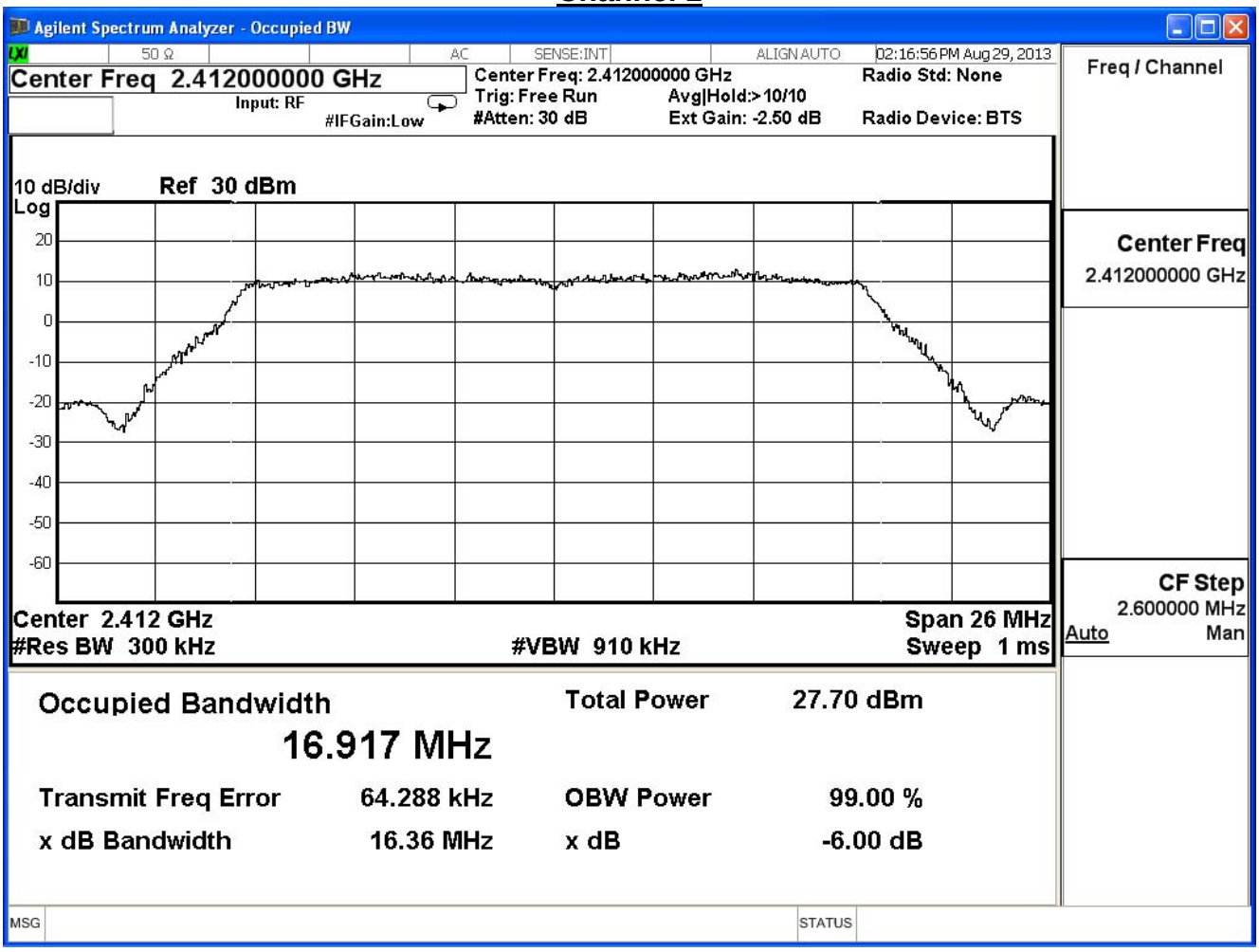
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:16:06 PM Aug 29, 2013
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
10.172 MHz
Total Power
28.44 dBm
Transmit Freq Error
5.202 kHz
OBW Power
99.00 %
x dB Bandwidth
8.230 MHz
x dB
-6.00 dB
MSG
STATUS

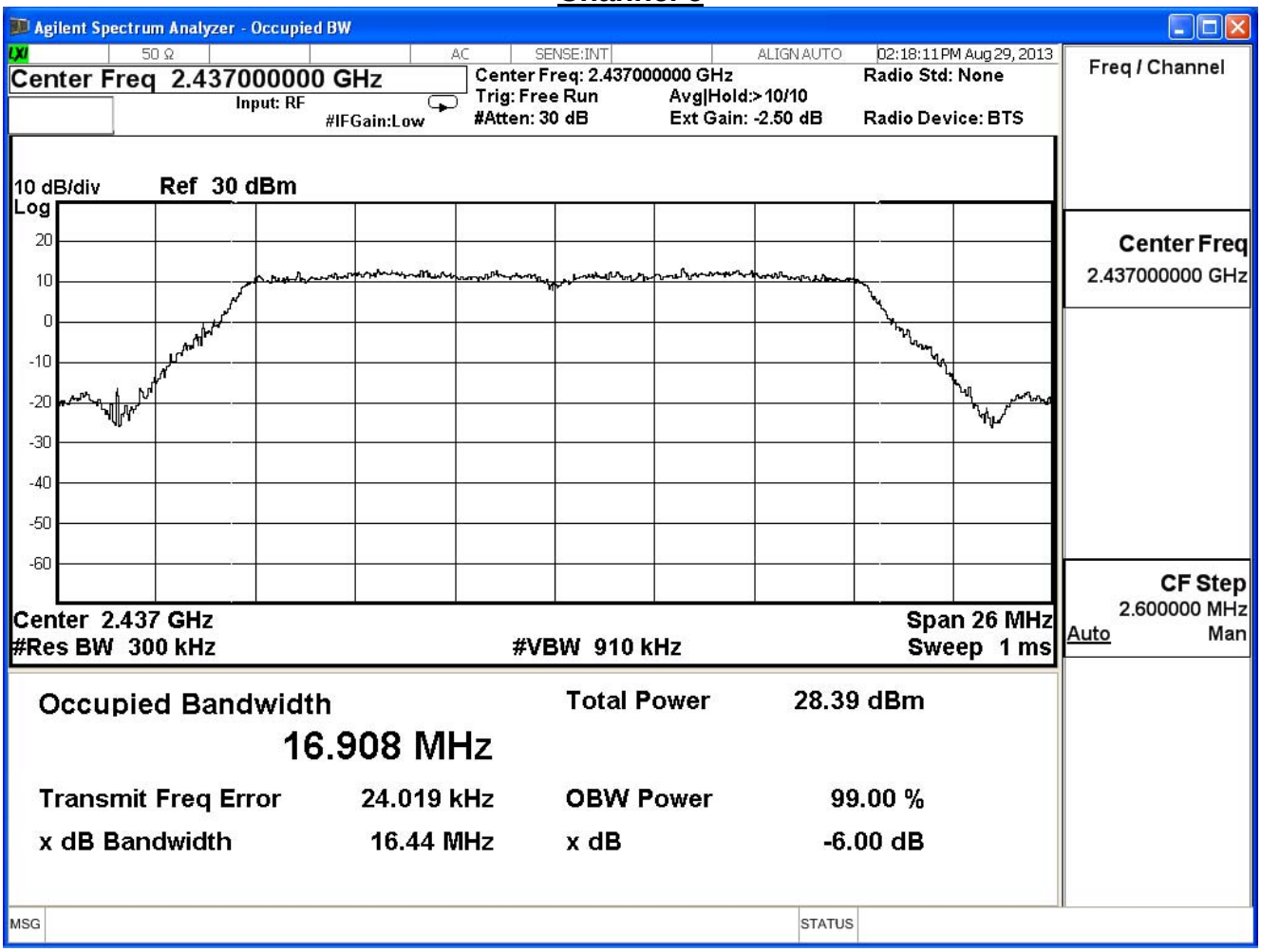
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11g (ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	16.36	≧0.5	Pass
6	2437	16.44	≧0.5	Pass
11	2462	16.37	≧0.5	Pass

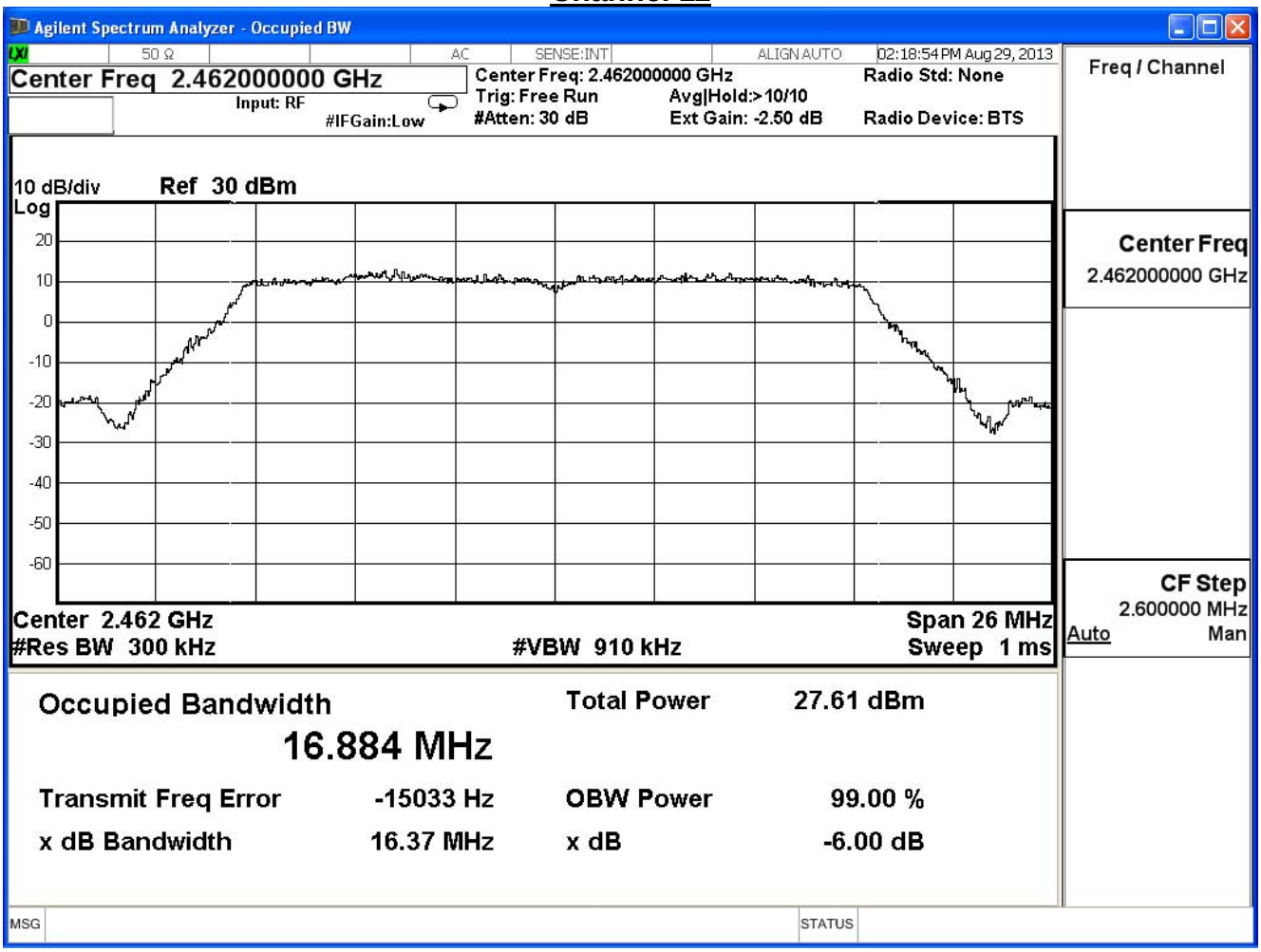
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:18:11 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
16.908 MHz
Total Power
28.39 dBm
Transmit Freq Error
24.019 kHz
OBW Power
99.00 %
x dB Bandwidth
16.44 MHz
x dB
-6.00 dB
MSG
STATUS

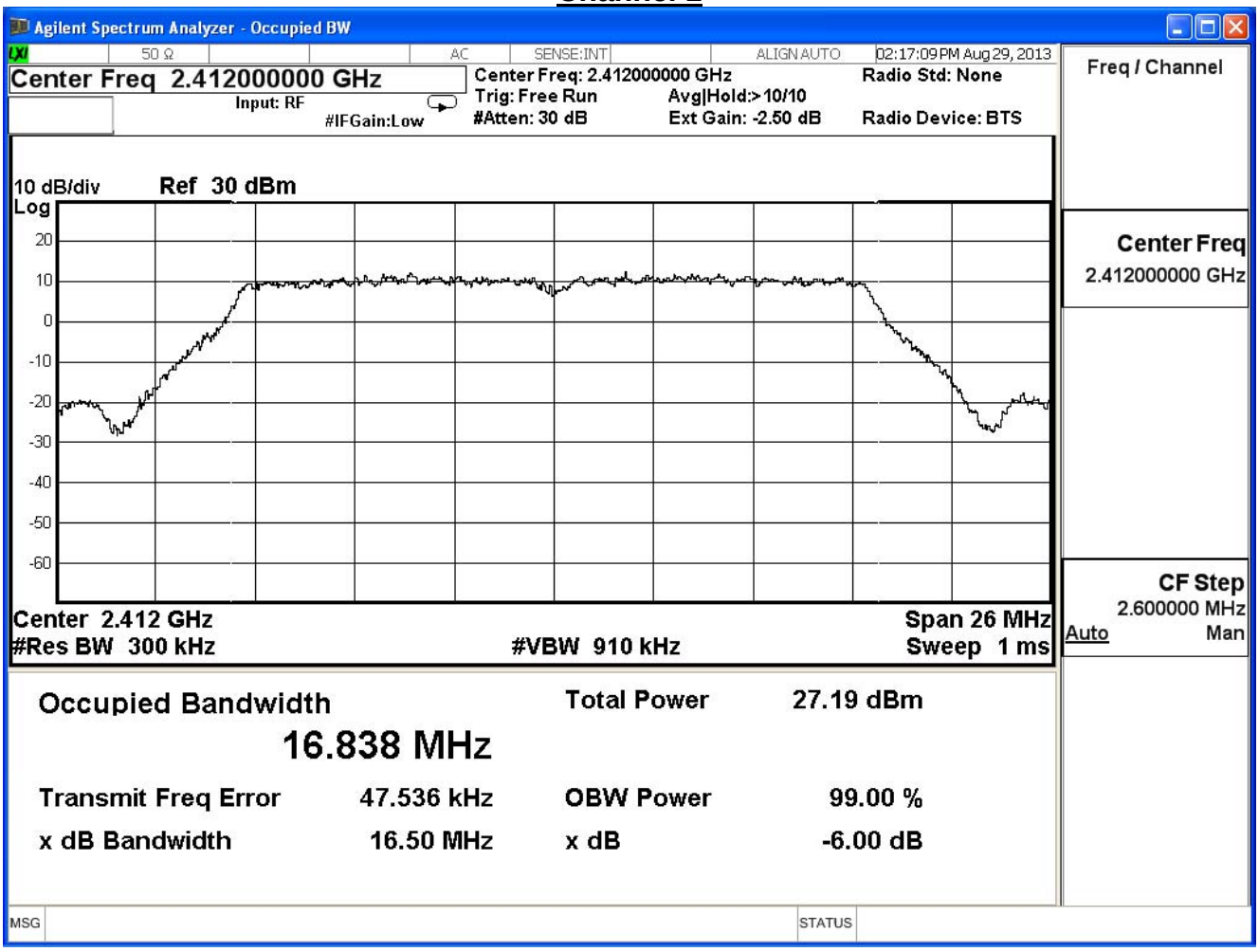
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:18:54 PM Aug 29, 2013
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
16.884 MHz
Total Power
27.61 dBm
Transmit Freq Error
-15033 Hz
OBW Power
99.00 %
x dB Bandwidth
16.37 MHz
x dB
-6.00 dB
MSG
STATUS

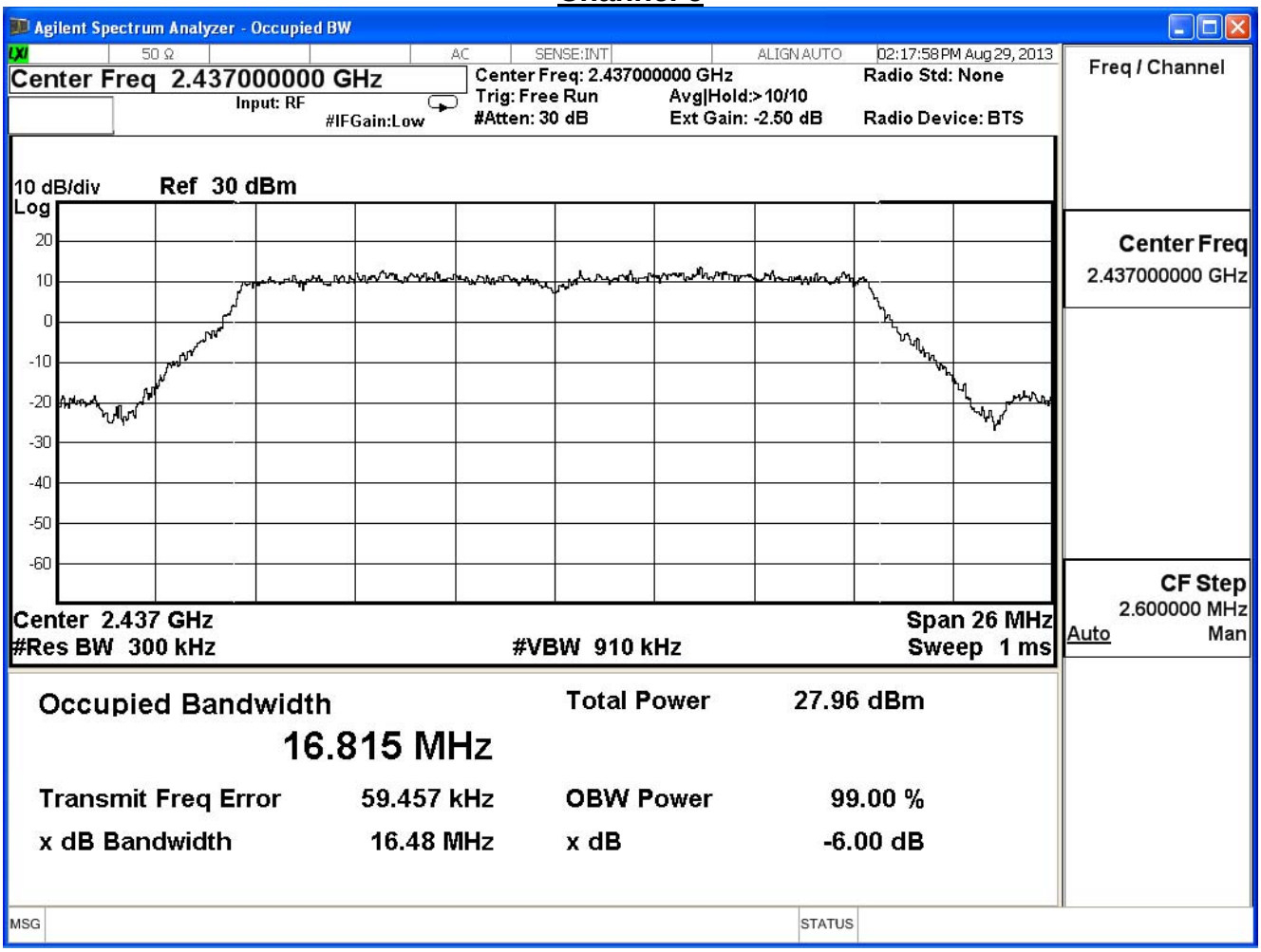
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11g (ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	16.50	≧0.5	Pass
6	2437	16.48	≧0.5	Pass
11	2462	16.50	≧0.5	Pass

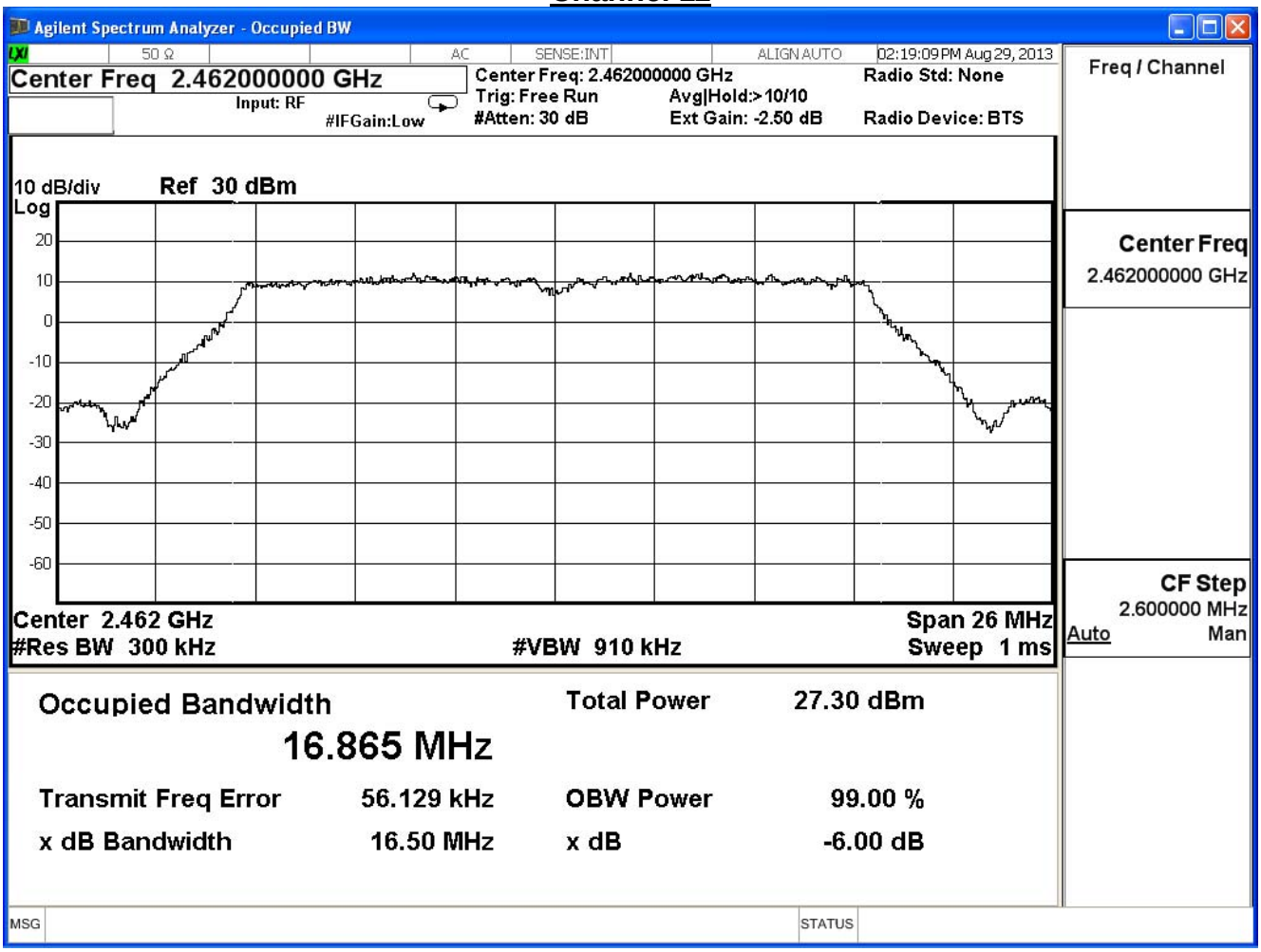
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:17:58 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
16.815 MHz
Total Power
27.96 dBm
Transmit Freq Error
59.457 kHz
OBW Power
99.00 %
x dB Bandwidth
16.48 MHz
x dB
-6.00 dB
MSG
STATUS

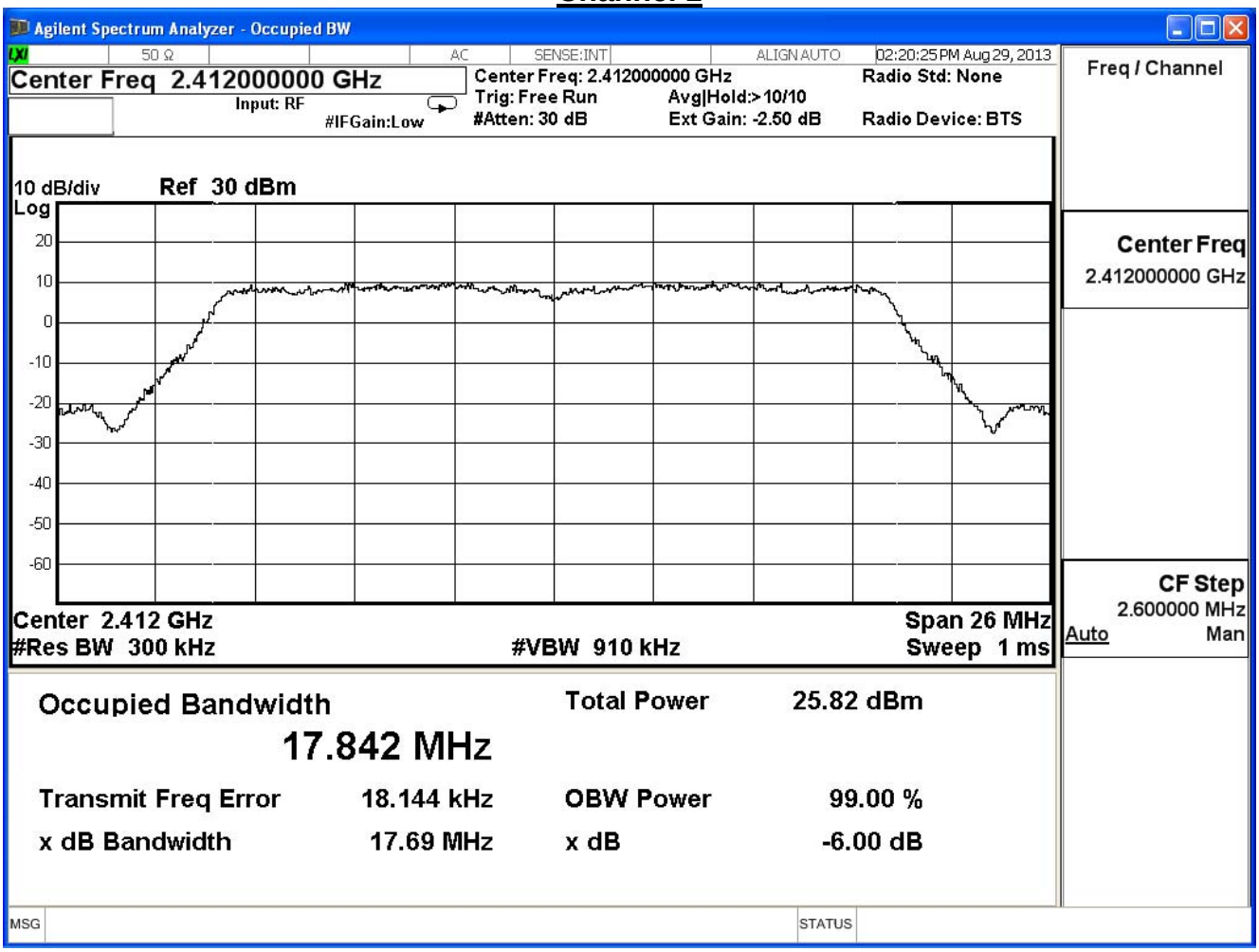
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:19:09 PM Aug 29, 2013
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
16.865 MHz
Total Power
27.30 dBm
Transmit Freq Error
56.129 kHz
OBW Power
99.00 %
x dB Bandwidth
16.50 MHz
x dB
-6.00 dB
MSG
STATUS

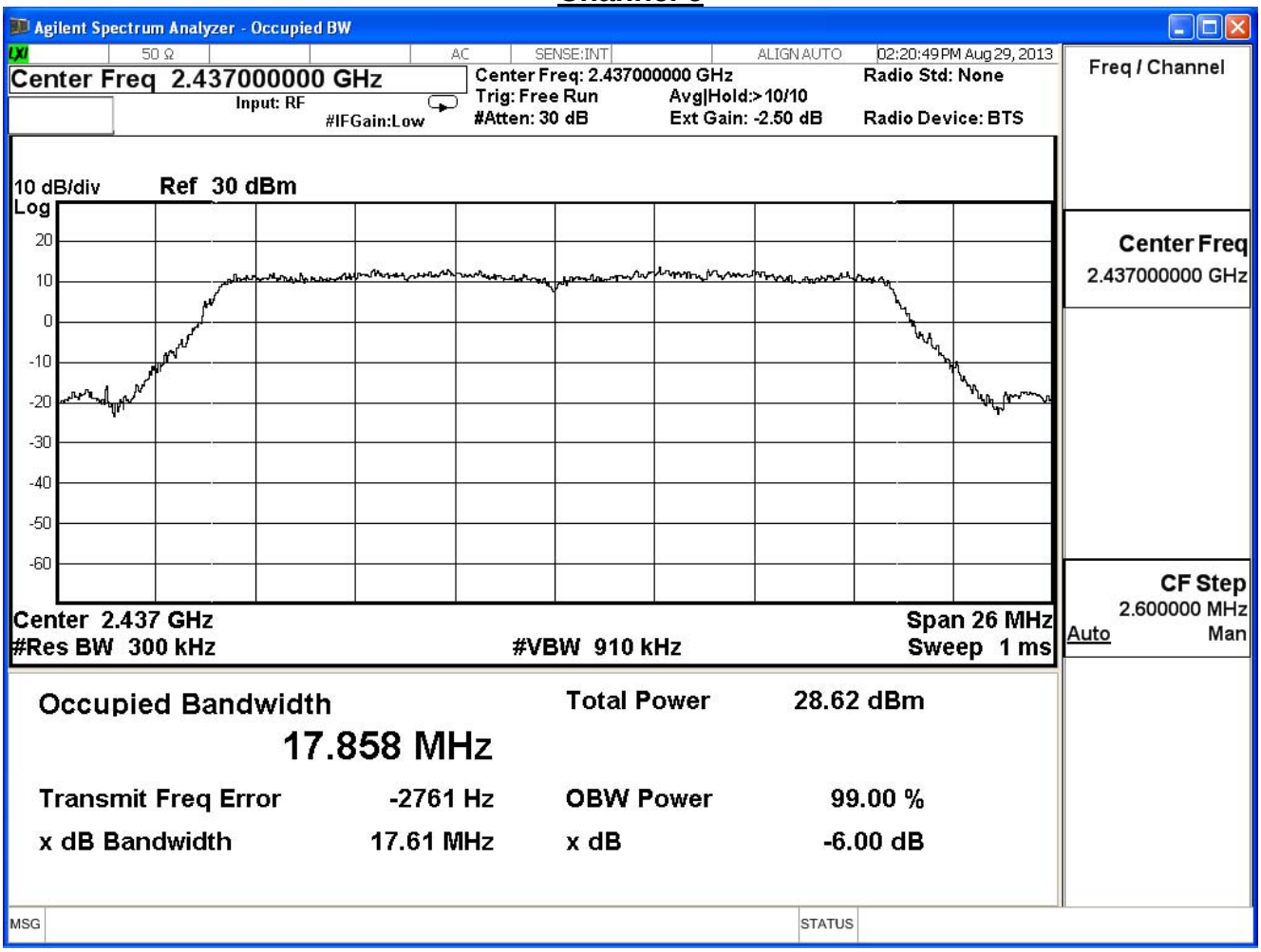
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11n (20MHz)(ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	17.69	≧0.5	Pass
6	2437	17.61	≧0.5	Pass
11	2462	17.69	≧0.5	Pass

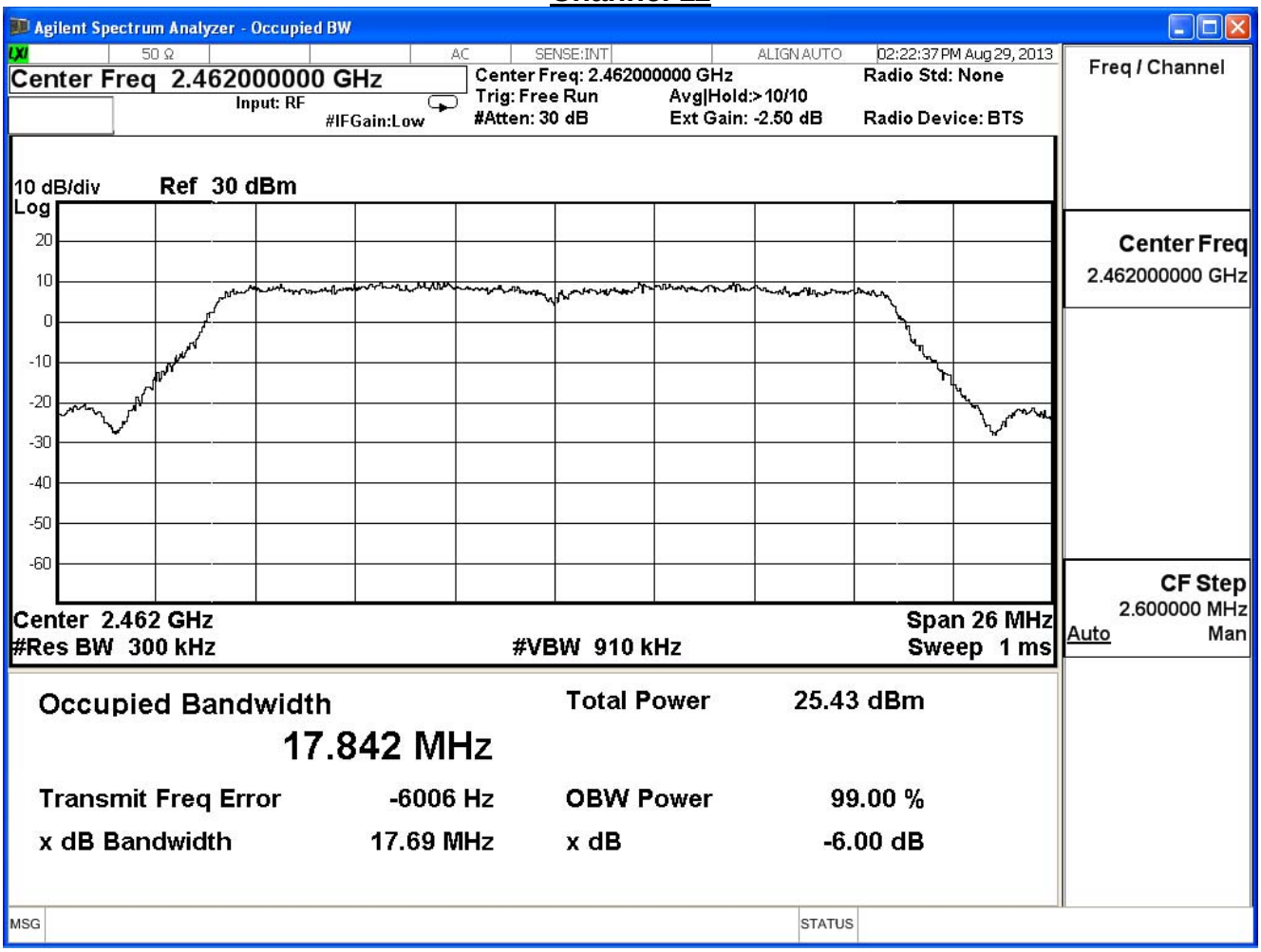
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:20:49 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
17.858 MHz
Total Power
28.62 dBm
Transmit Freq Error
-2761 Hz
OBW Power
99.00 %
x dB Bandwidth
17.61 MHz
x dB
-6.00 dB
MSG
STATUS

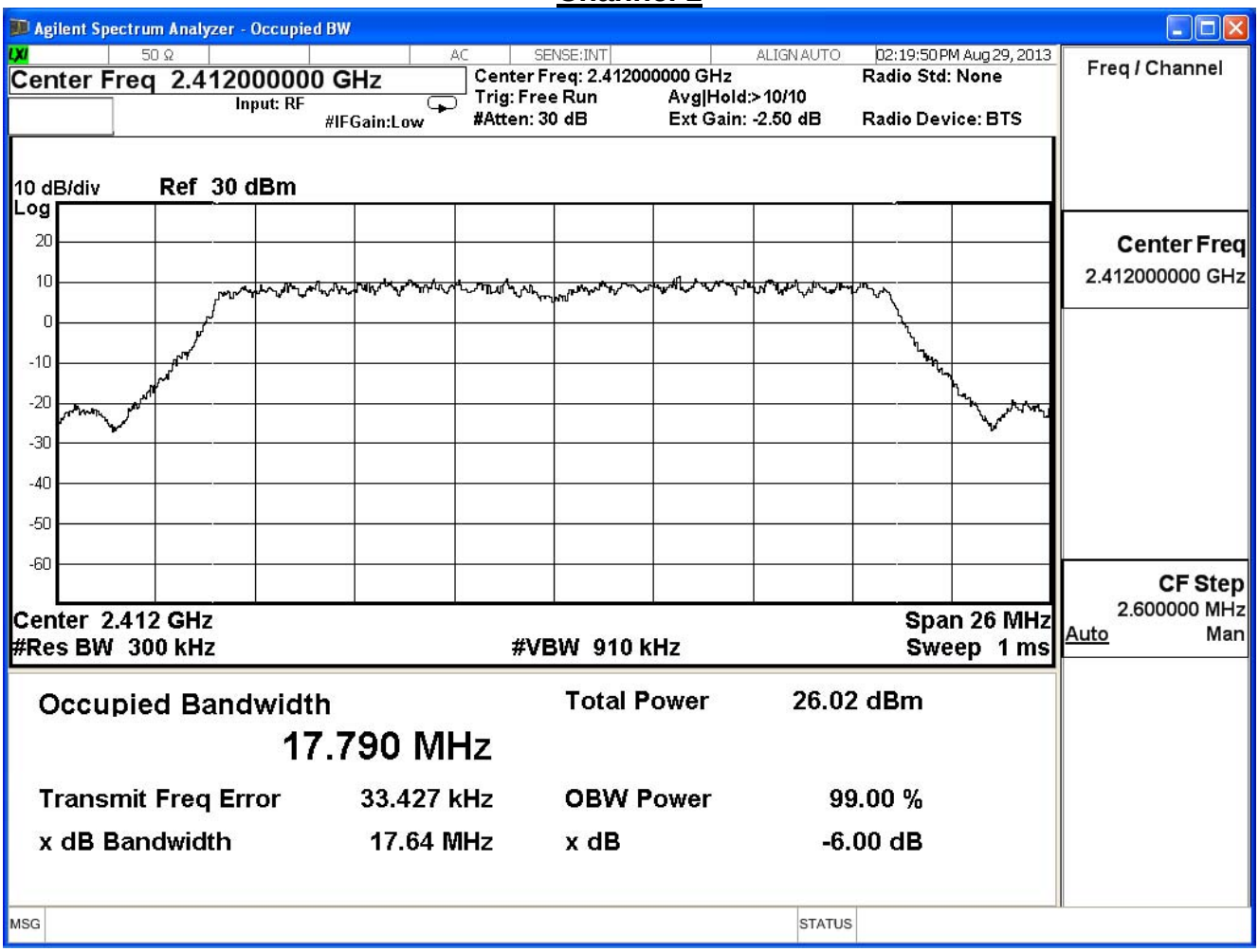
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:22:37 PM Aug 29, 2013
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
17.842 MHz
Total Power
25.43 dBm
Transmit Freq Error
-6006 Hz
OBW Power
99.00 %
x dB Bandwidth
17.69 MHz
x dB
-6.00 dB
MSG
STATUS

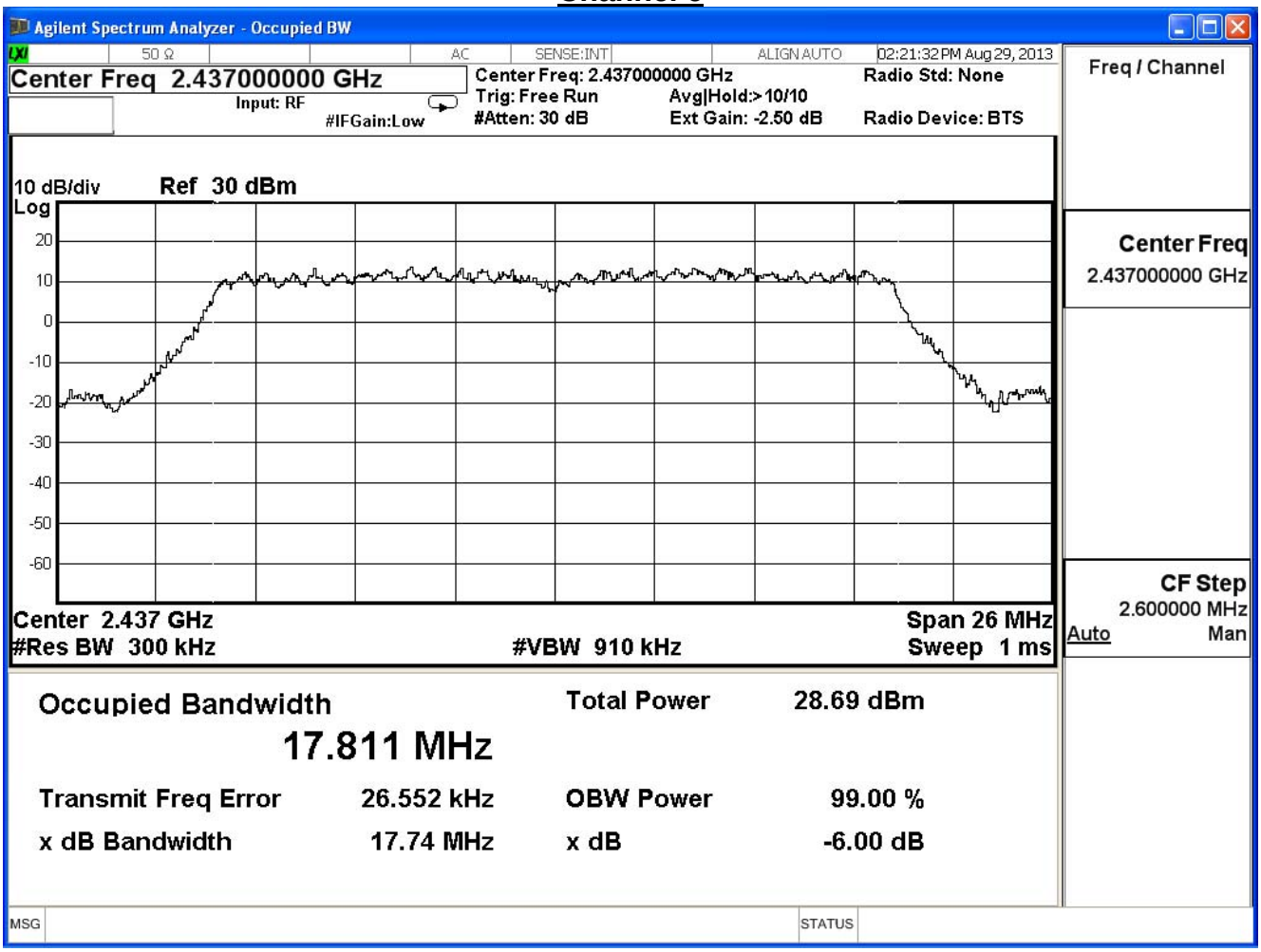
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11n (20MHz)(ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
1	2412	17.64	≧0.5	Pass
6	2437	17.74	≧0.5	Pass
11	2462	17.72	≧0.5	Pass

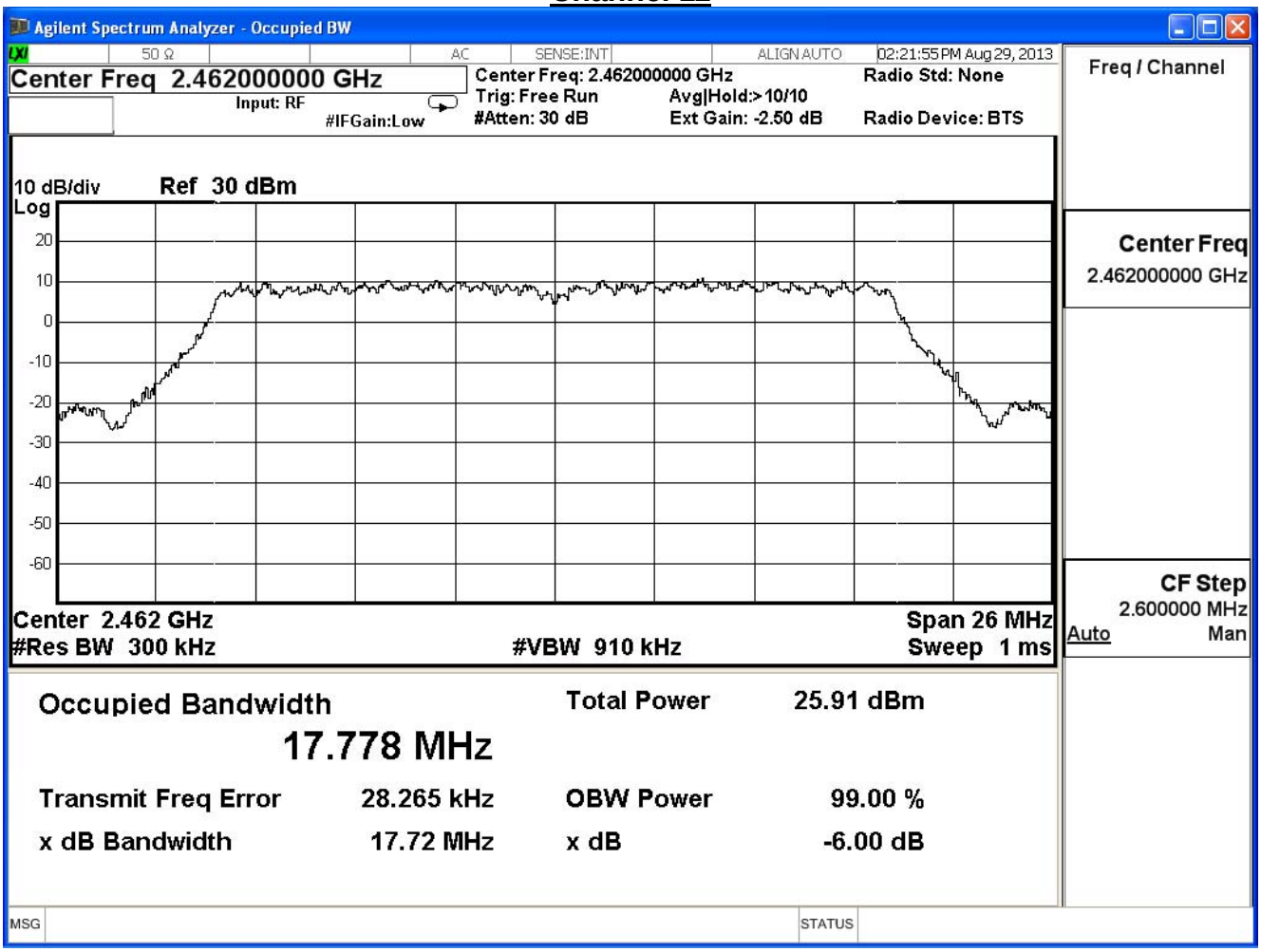
Channel 1



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:21:32 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
17.811 MHz
Total Power
28.69 dBm
Transmit Freq Error
26.552 kHz
OBW Power
99.00 %
x dB Bandwidth
17.74 MHz
x dB
-6.00 dB
MSG
STATUS

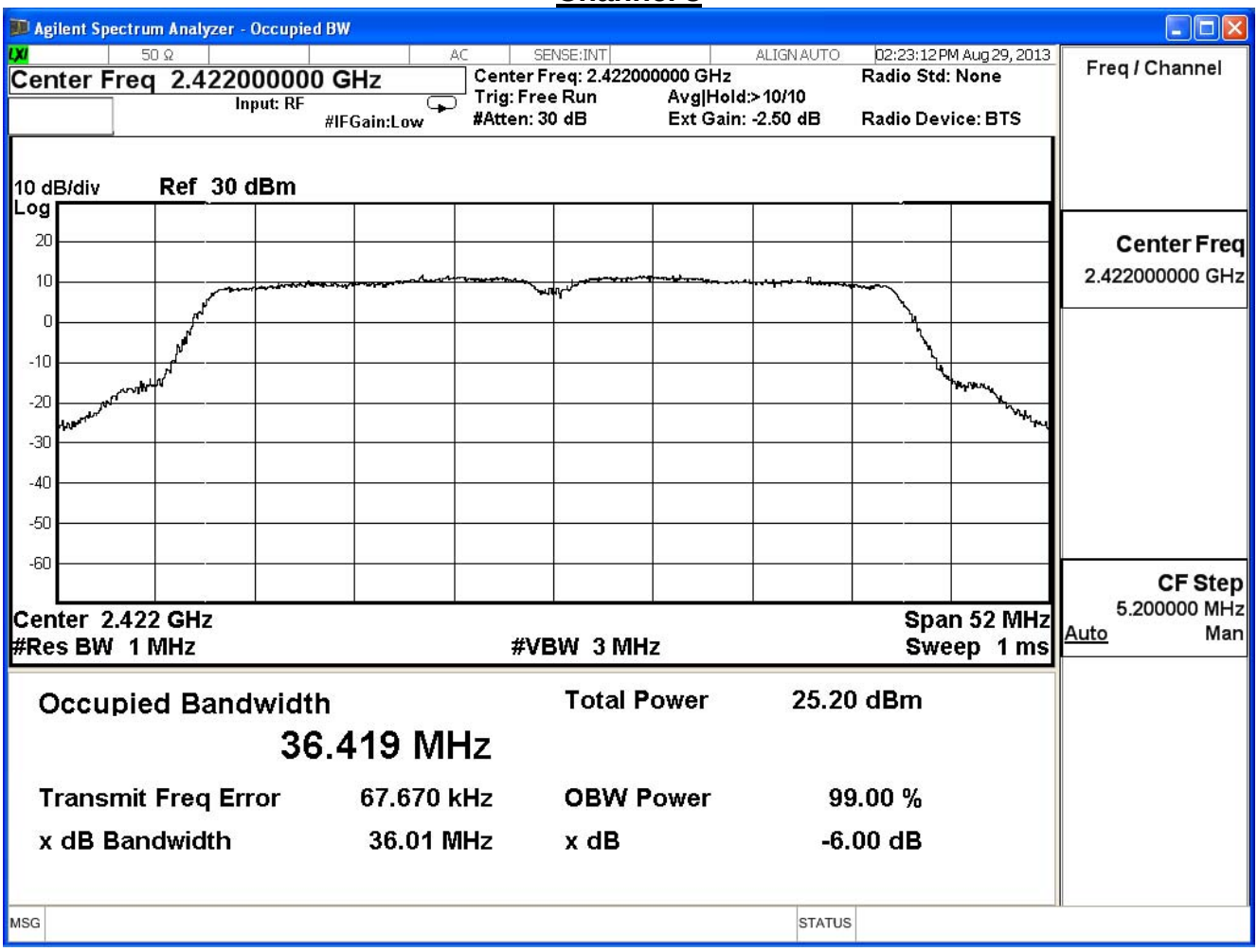
Channel 11


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:21:55 PM Aug 29, 2013
Center Freq 2.462000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.462000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.462000000 GHz
Center 2.462 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
17.778 MHz
Total Power
25.91 dBm
Transmit Freq Error
28.265 kHz
OBW Power
99.00 %
x dB Bandwidth
17.72 MHz
x dB
-6.00 dB
MSG
STATUS

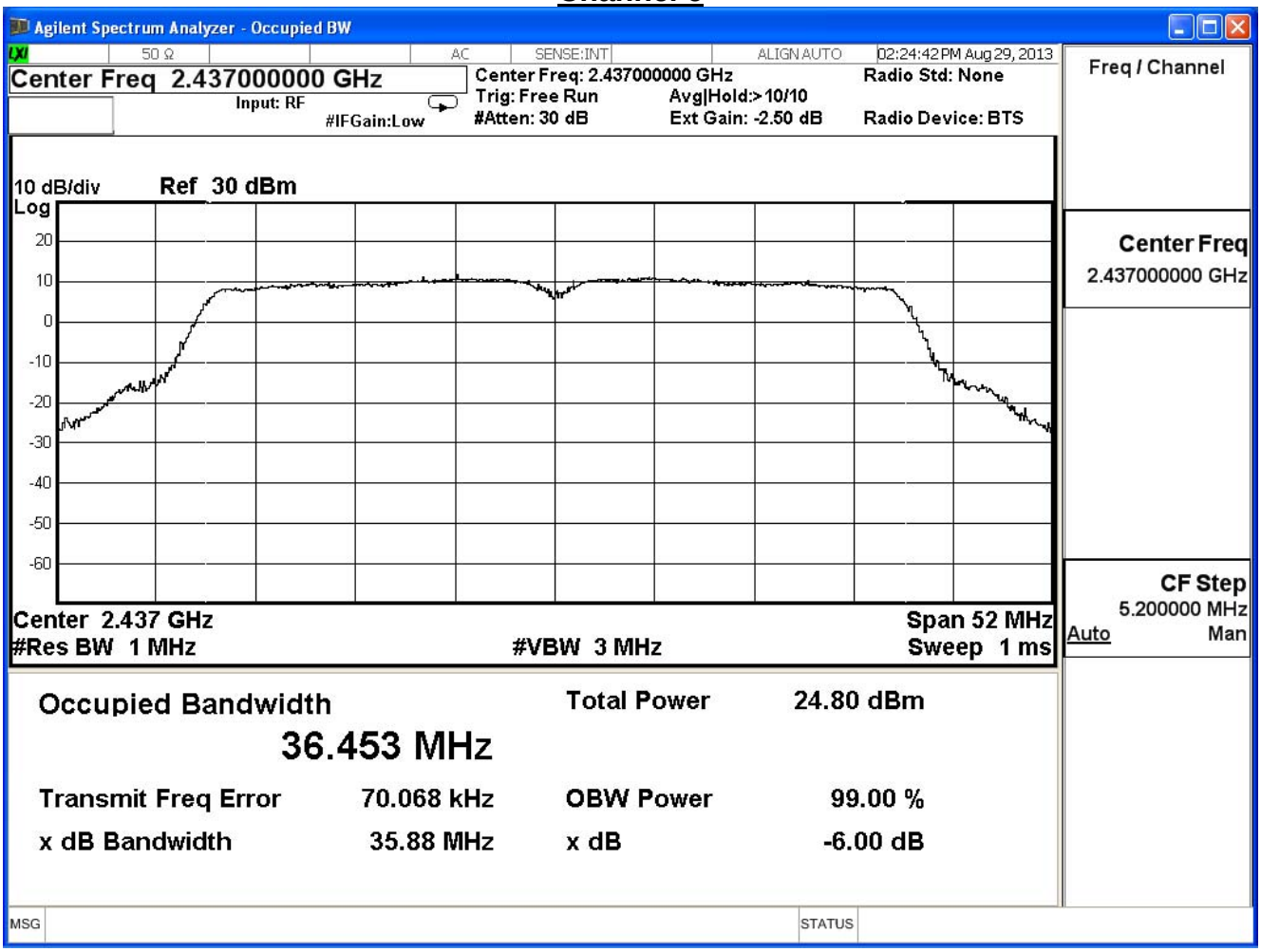
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11n (40MHz)(ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
3	2422	36.01	≧0.5	Pass
6	2437	35.88	≧0.5	Pass
9	2452	35.94	≧0.5	Pass

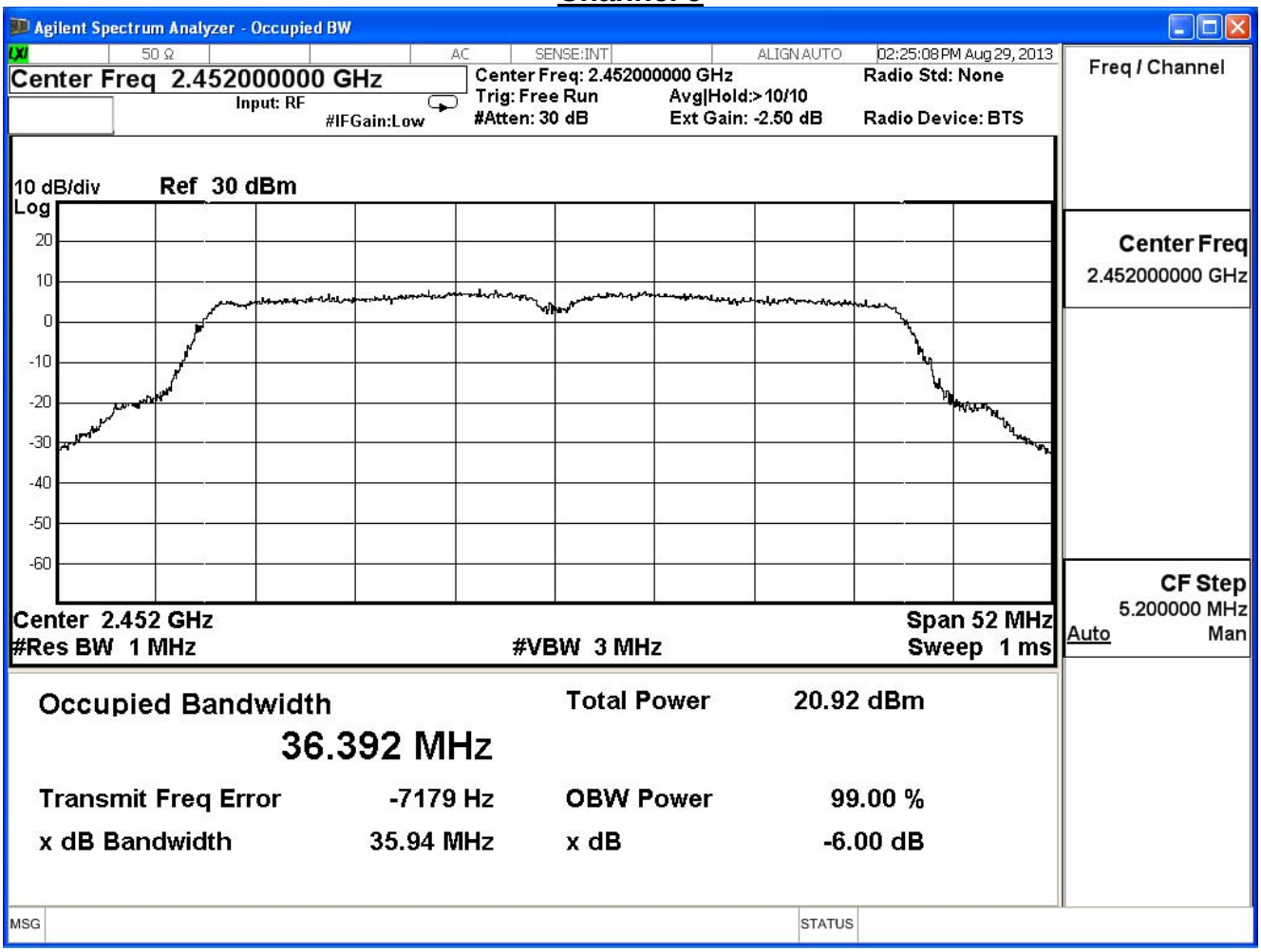
Channel 3



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:24:42 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
CF Step
5.200000 MHz
Auto
Man
Occupied Bandwidth
36.453 MHz
Total Power
24.80 dBm
Transmit Freq Error
70.068 kHz
OBW Power
99.00 %
x dB Bandwidth
35.88 MHz
x dB
-6.00 dB
MSG
STATUS

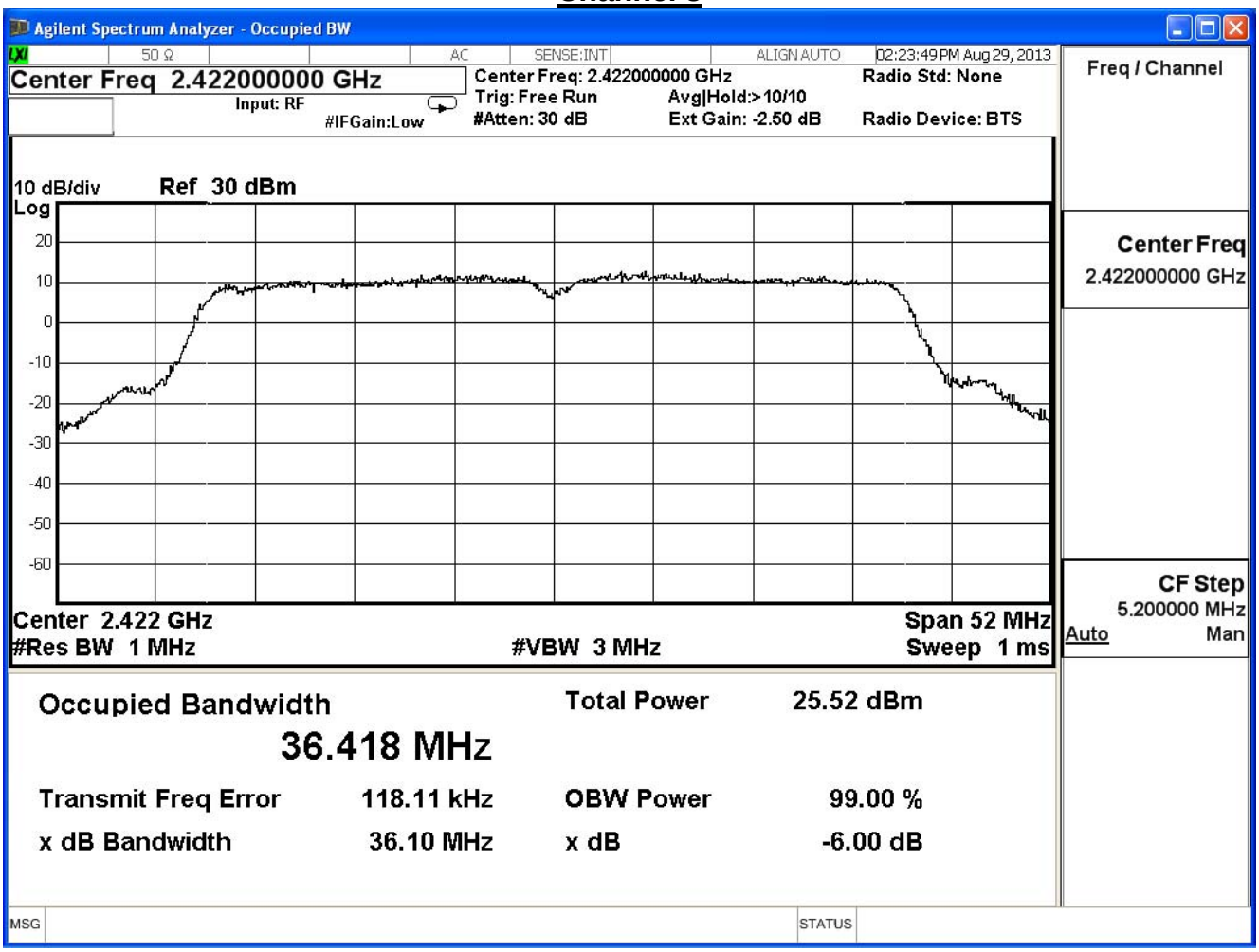
Channel 9


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:25:08 PM Aug 29, 2013
Center Freq 2.452000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.452000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.452000000 GHz
Center 2.452 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
CF Step
5.200000 MHz
Auto
Man
Occupied Bandwidth
36.392 MHz
Total Power
20.92 dBm
Transmit Freq Error
-7179 Hz
OBW Power
99.00 %
x dB Bandwidth
35.94 MHz
x dB
-6.00 dB
MSG
STATUS

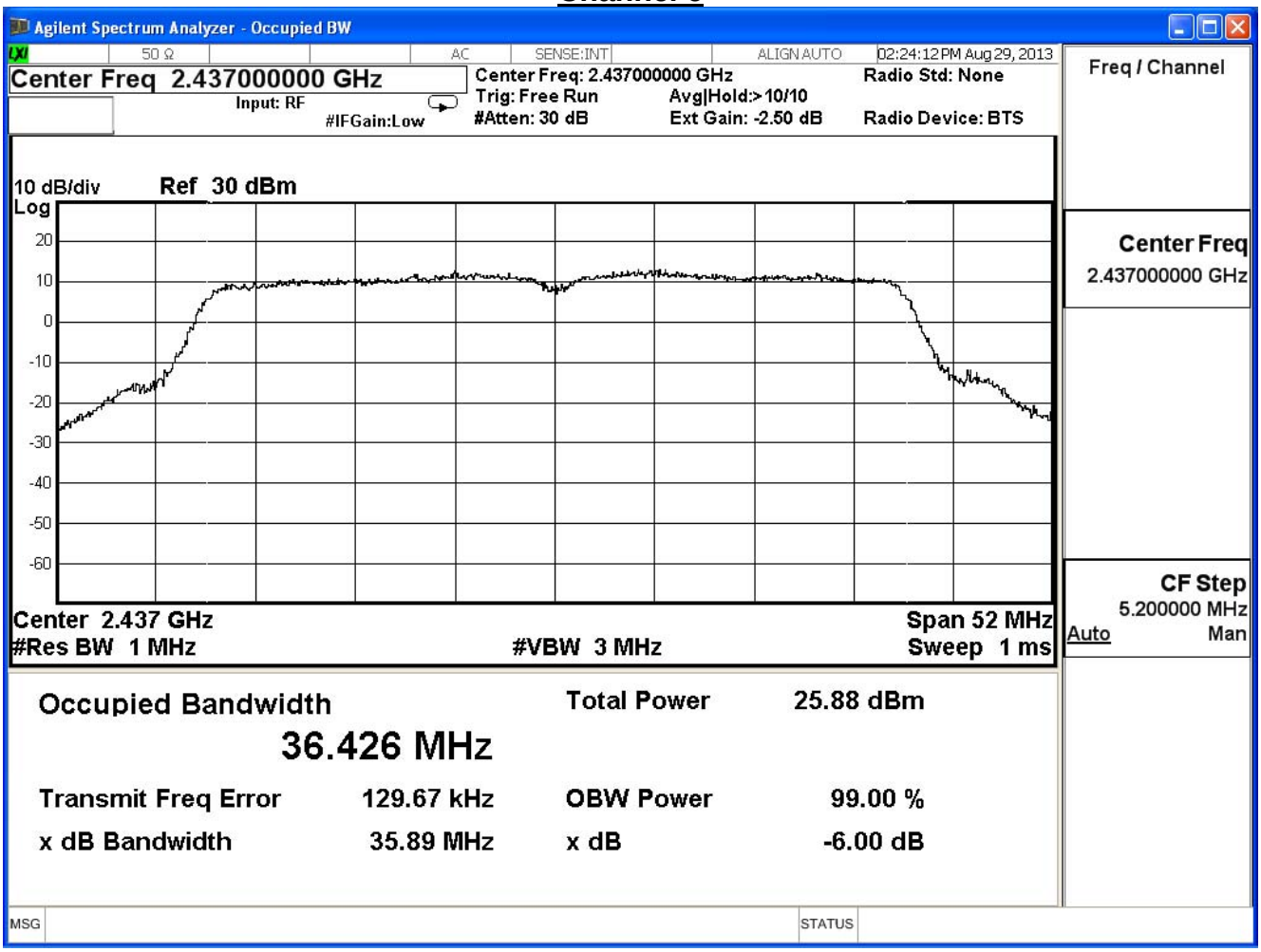
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11n (40MHz)(ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
3	2422	36.10	≧0.5	Pass
6	2437	35.89	≧0.5	Pass
9	2452	35.99	≧0.5	Pass

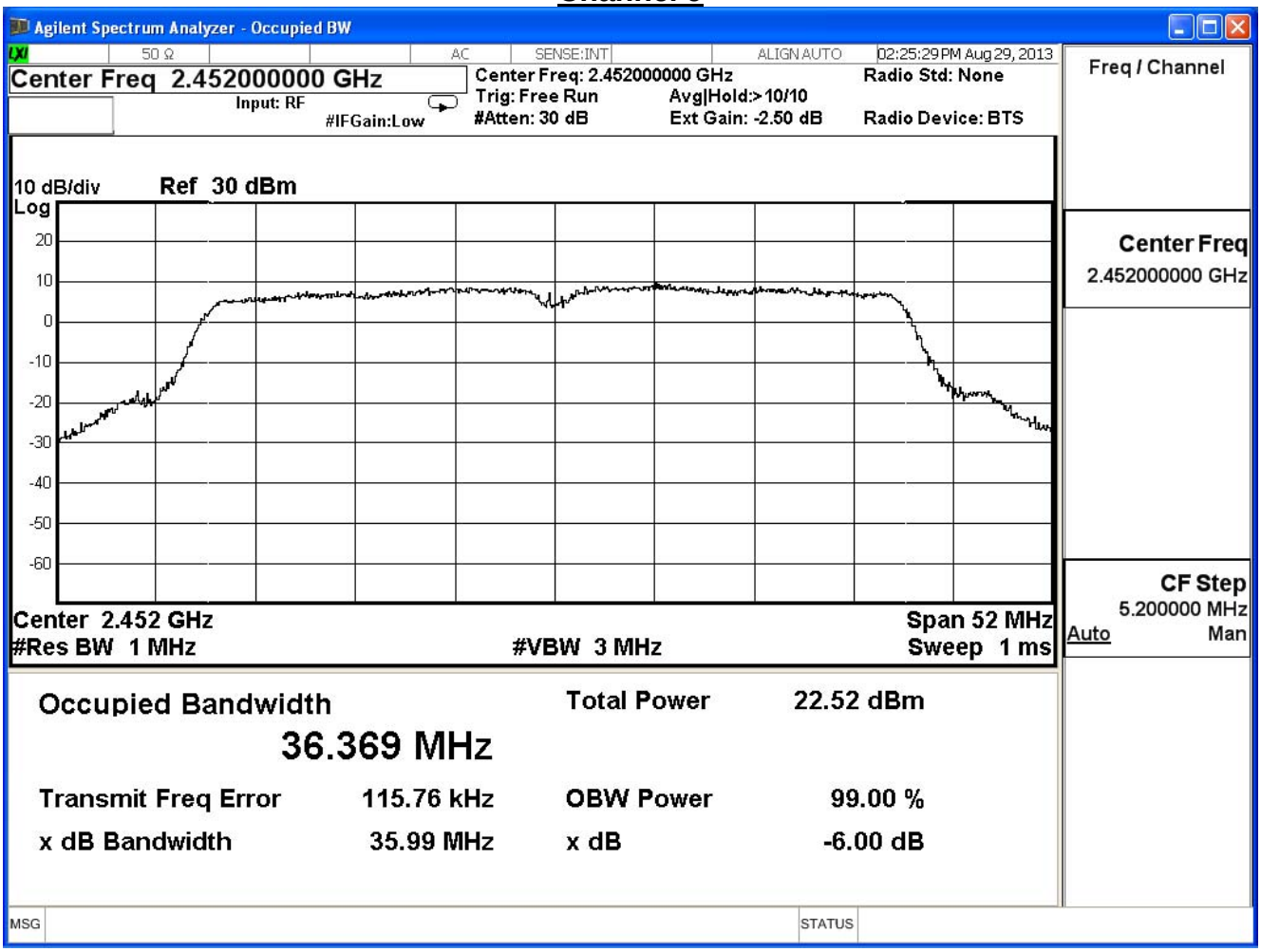
Channel 3



Channel 6


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:24:12 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.437000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.437000000 GHz
Center 2.437 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
CF Step
5.200000 MHz
Auto
Man
Occupied Bandwidth
36.426 MHz
Total Power
25.88 dBm
Transmit Freq Error
129.67 kHz
OBW Power
99.00 %
x dB Bandwidth
35.89 MHz
x dB
-6.00 dB
MSG
STATUS

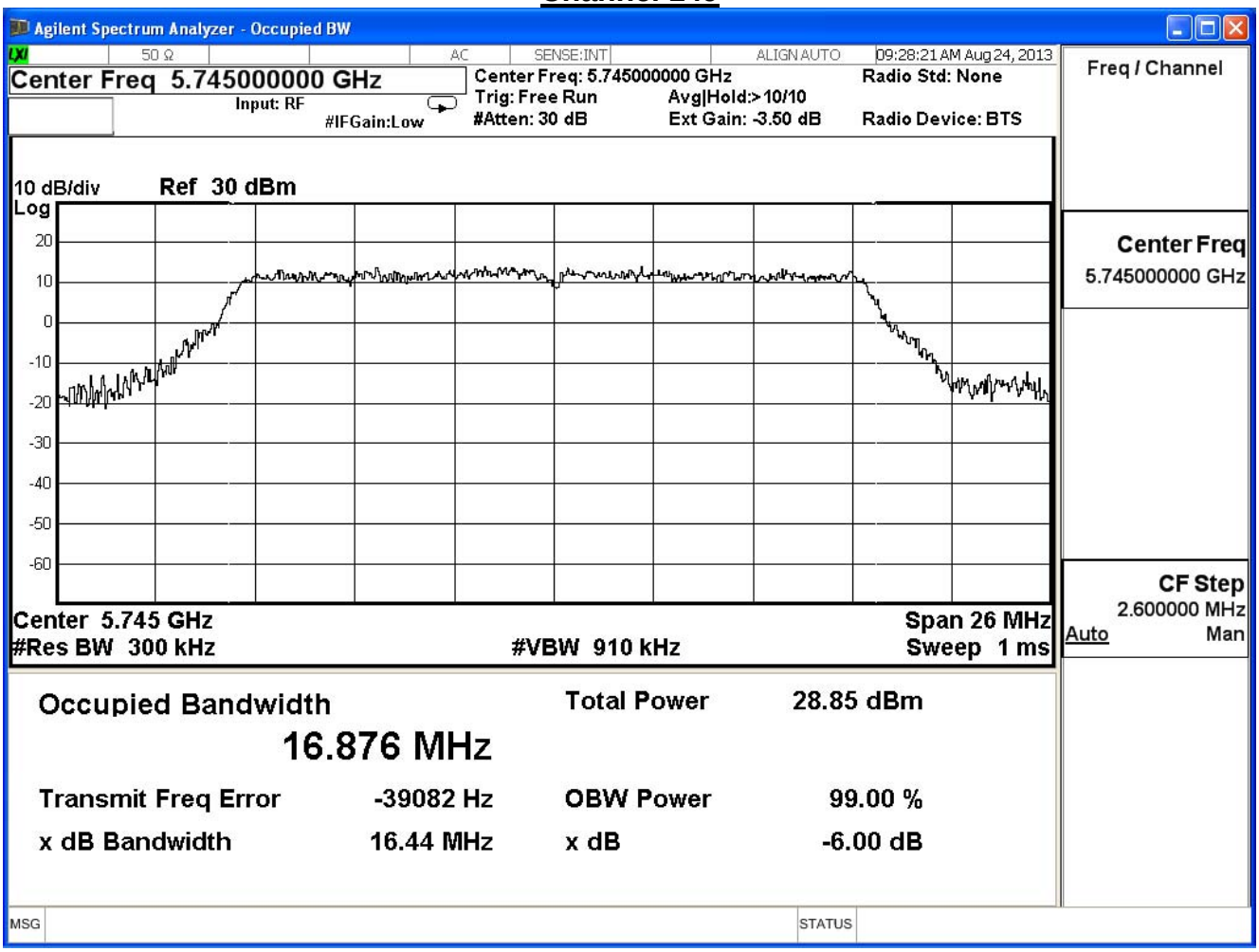
Channel 9


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:25:29 PM Aug 29, 2013
Center Freq 2.452000000 GHz
Input: RF
#IFGain:Low
Center Freq: 2.452000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
2.452000000 GHz
Center 2.452 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 52 MHz
Sweep 1 ms
CF Step
5.200000 MHz
Auto
Man
Occupied Bandwidth
36.369 MHz
Total Power
22.52 dBm
Transmit Freq Error
115.76 kHz
OBW Power
99.00 %
x dB Bandwidth
35.99 MHz
x dB
-6.00 dB
MSG
STATUS

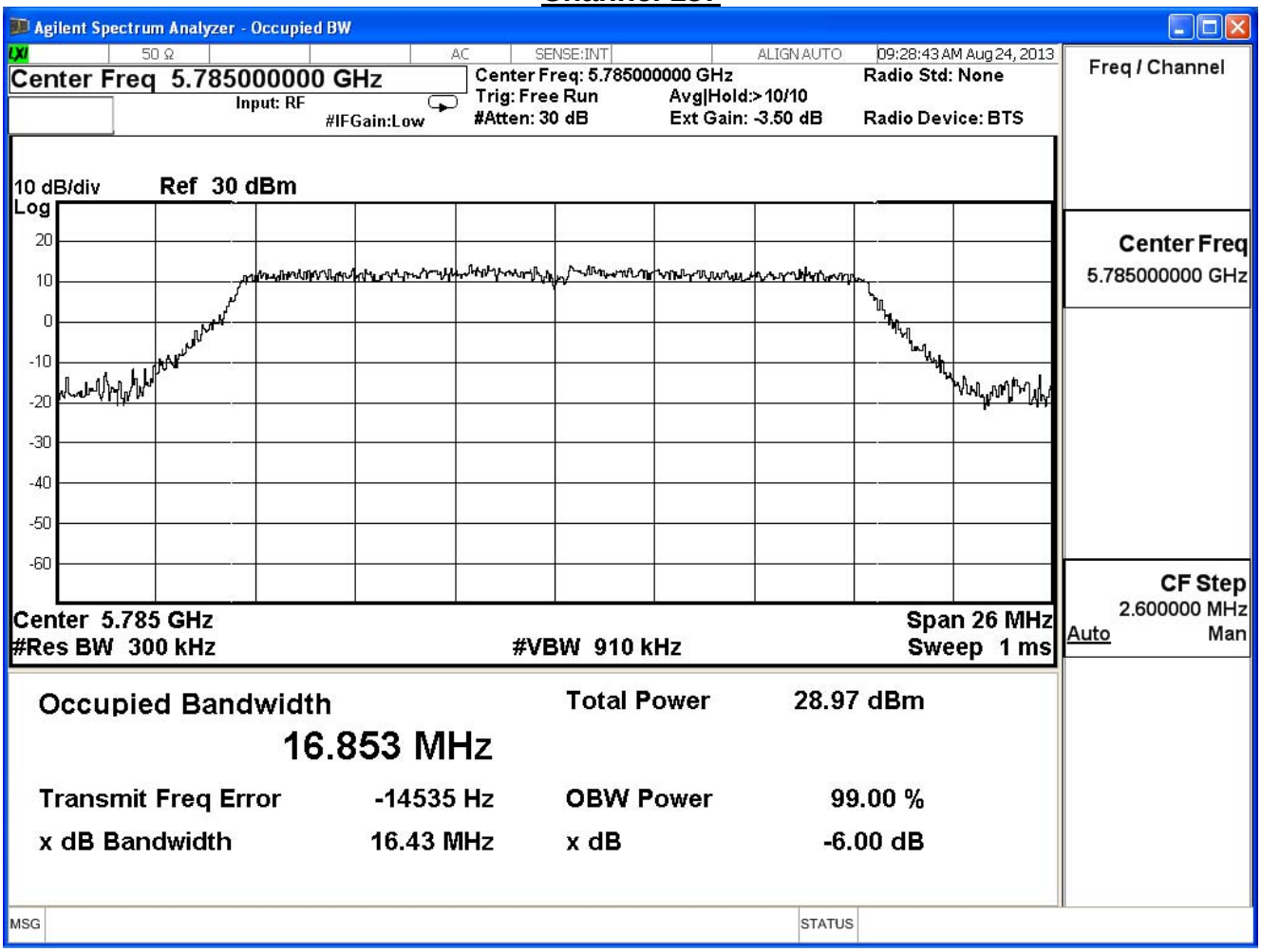
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

802.11 a (ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
149	5745	16.44	≧0.5	Pass
157	5785	16.43	≧0.5	Pass
165	5825	16.48	≧0.5	Pass

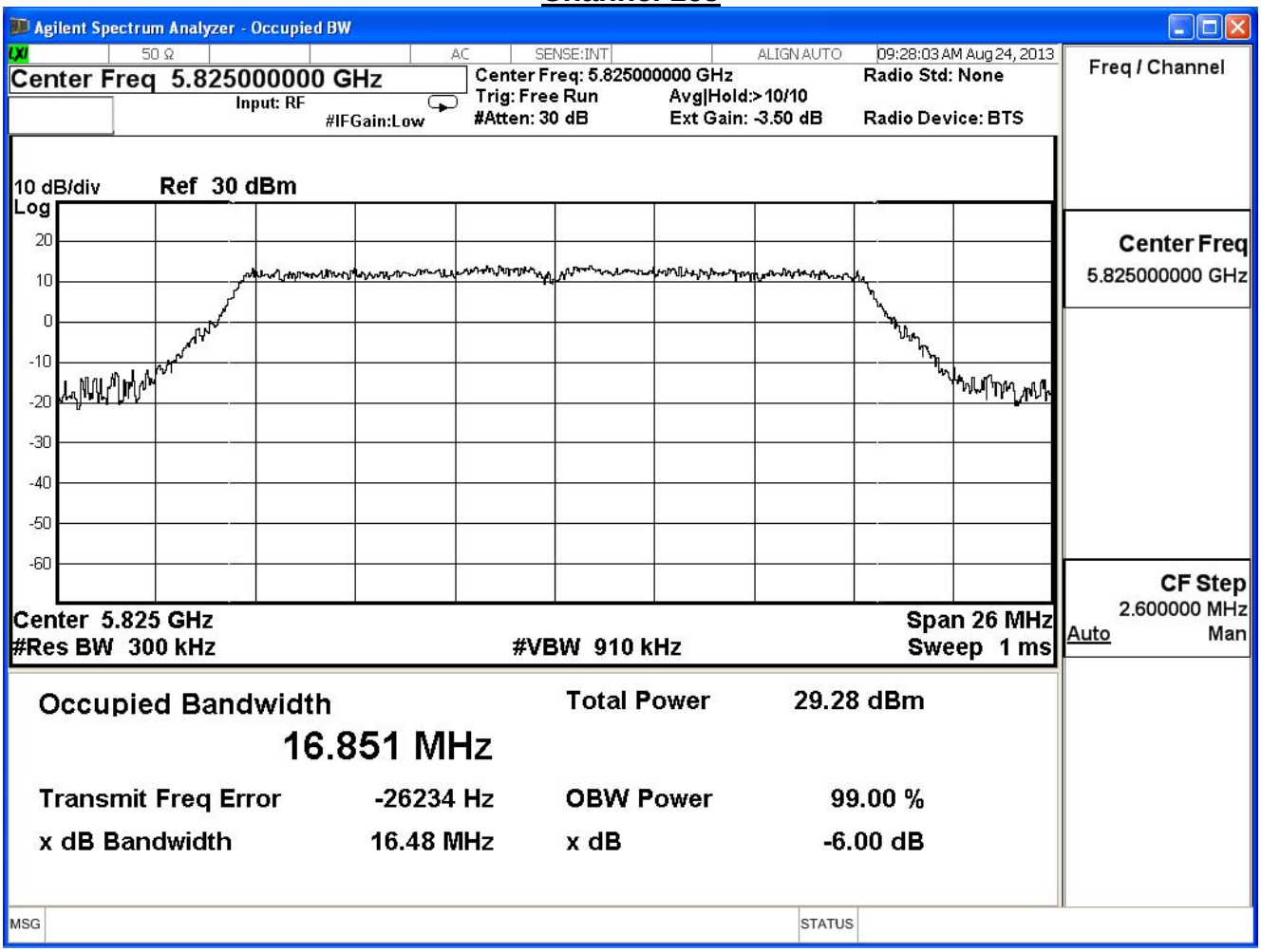
Channel 149



Channel 157


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:28:43 AM Aug 24, 2013
Center Freq 5.785000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.785000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
5.785000000 GHz
Center 5.785 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
16.853 MHz
Total Power
28.97 dBm
Transmit Freq Error
-14535 Hz
OBW Power
99.00 %
x dB Bandwidth
16.43 MHz
x dB
-6.00 dB
MSG
STATUS

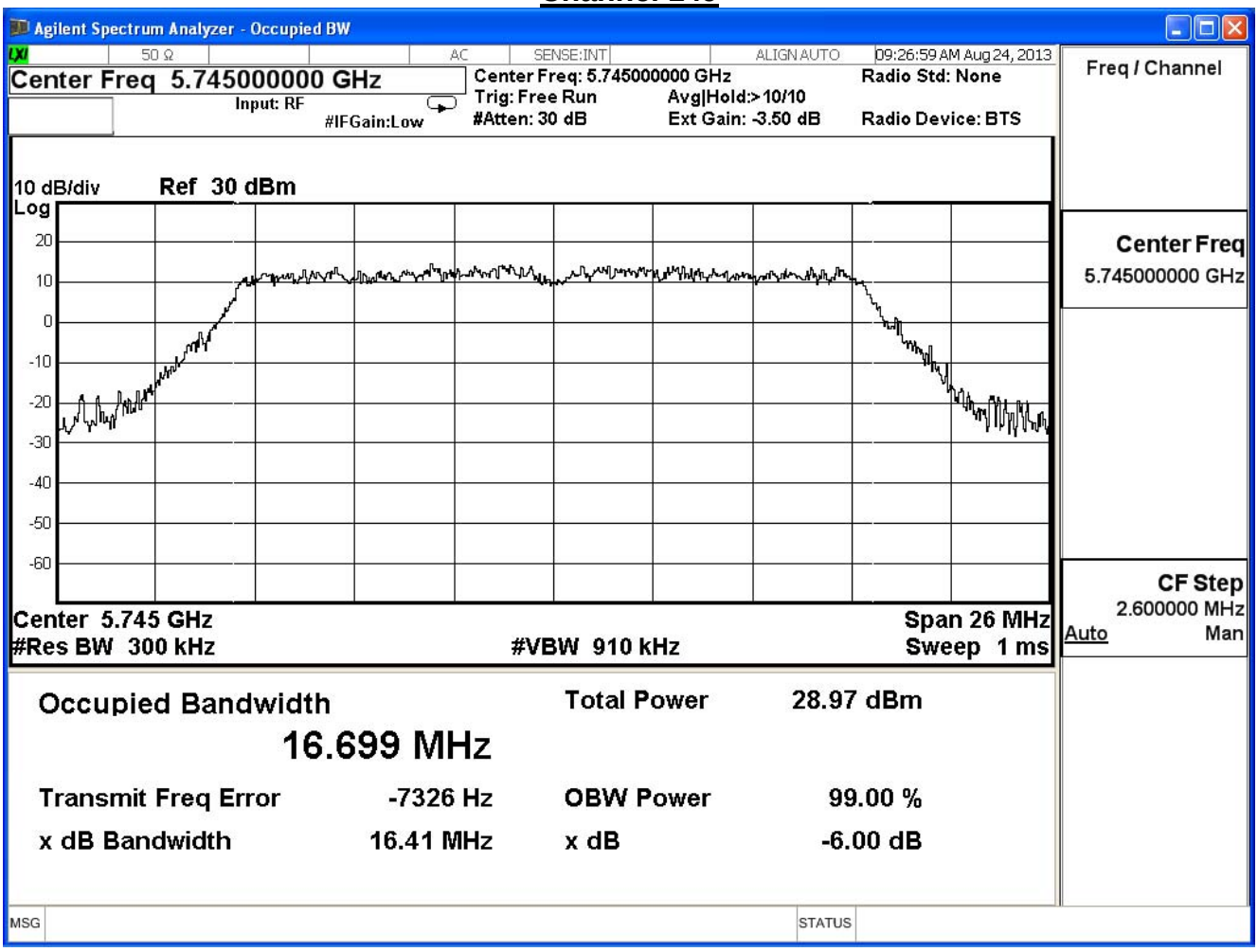
Channel 165


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:28:03 AM Aug 24, 2013
Center Freq 5.825000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.825000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
5.825000000 GHz
Center 5.825 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
16.851 MHz
Total Power
29.28 dBm
Transmit Freq Error
-26234 Hz
OBW Power
99.00 %
x dB Bandwidth
16.48 MHz
x dB
-6.00 dB
MSG
STATUS

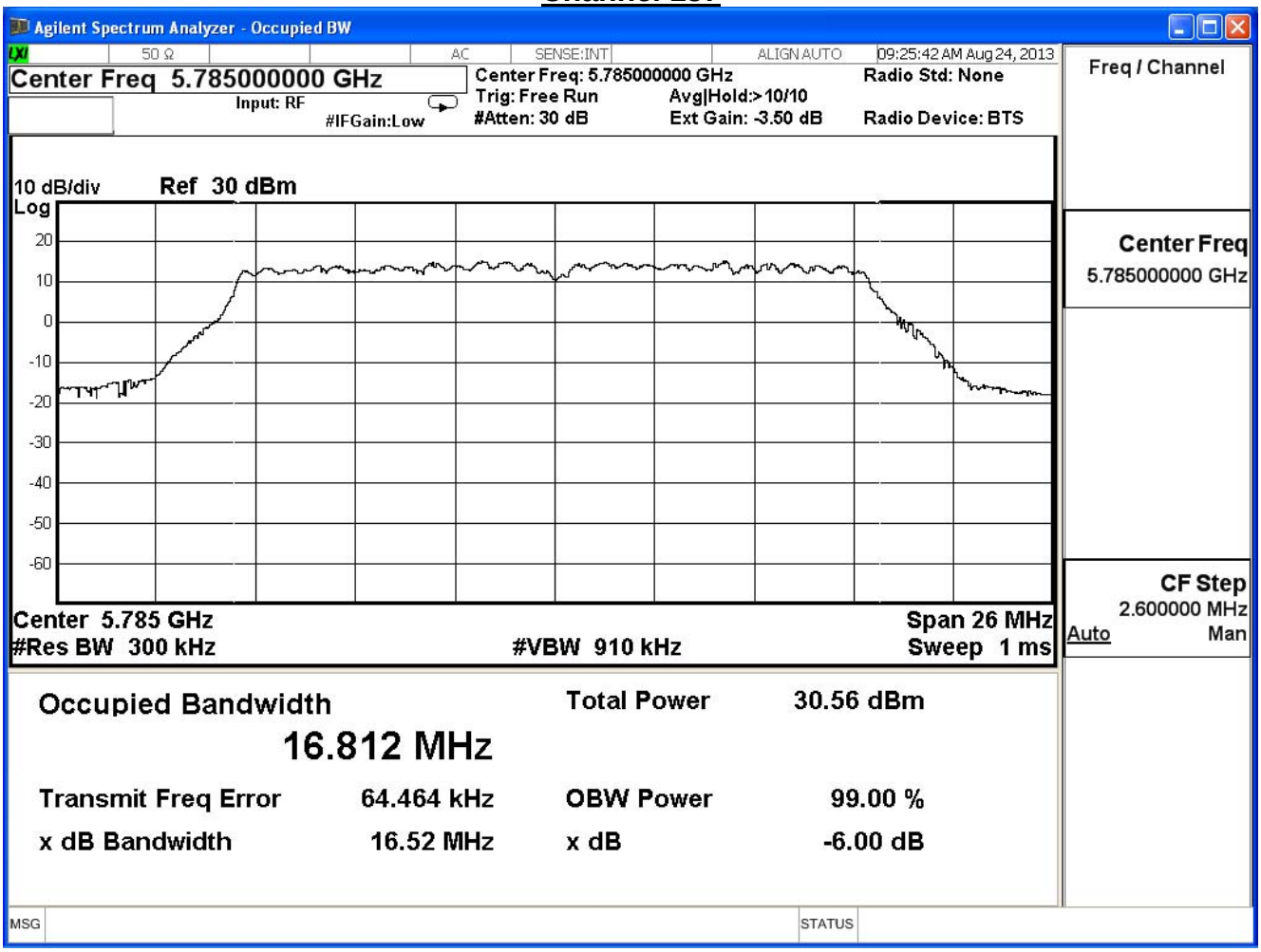
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

802.11 a (ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
149	5745	16.41	≧0.5	Pass
157	5785	16.52	≧0.5	Pass
165	5825	16.47	≧0.5	Pass

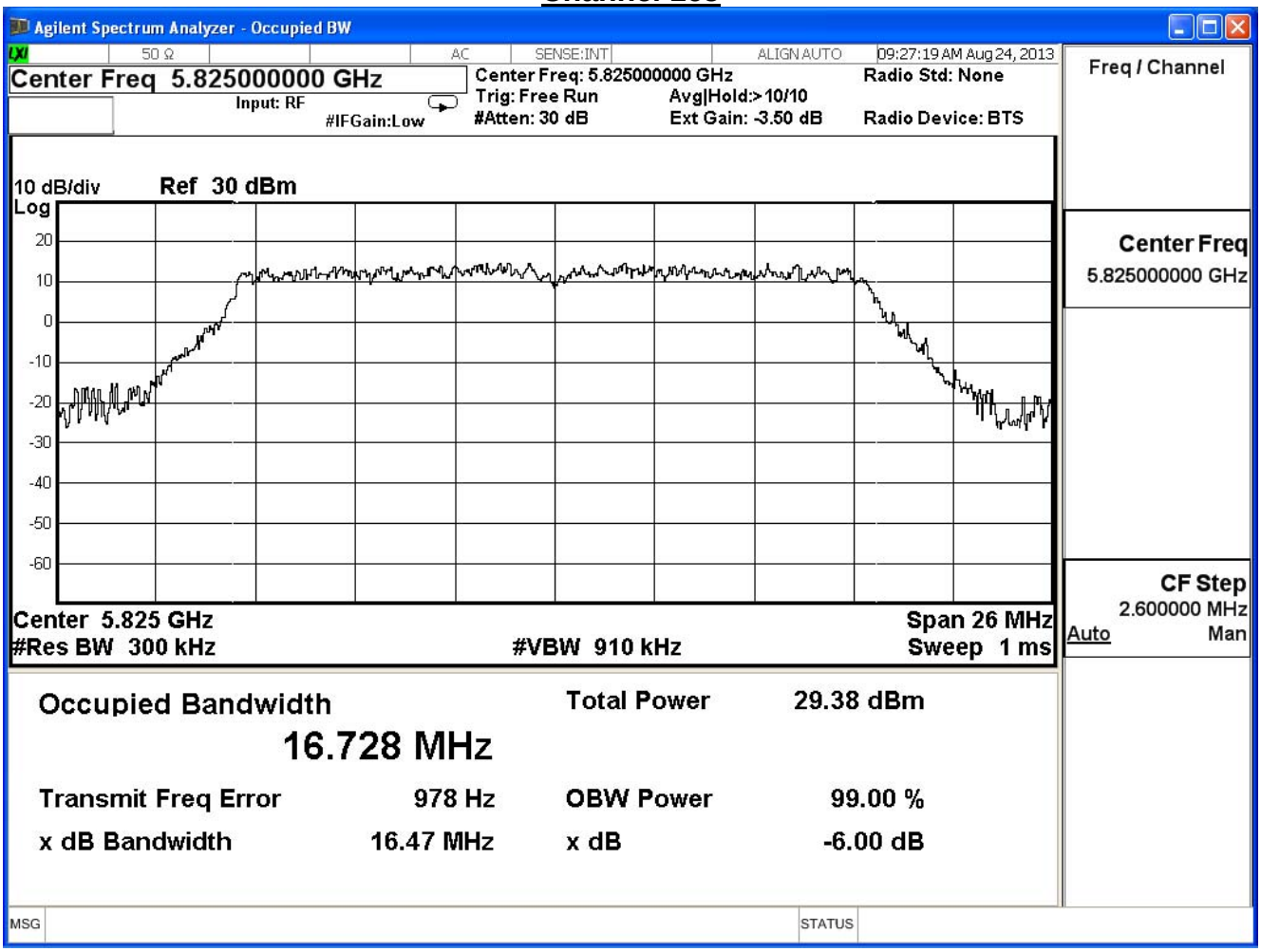
Channel 149



Channel 157


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:25:42 AM Aug 24, 2013
Center Freq 5.785000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.785000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
5.785000000 GHz
Center 5.785 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
16.812 MHz
Total Power
30.56 dBm
Transmit Freq Error
64.464 kHz
OBW Power
99.00 %
x dB Bandwidth
16.52 MHz
x dB
-6.00 dB
MSG
STATUS

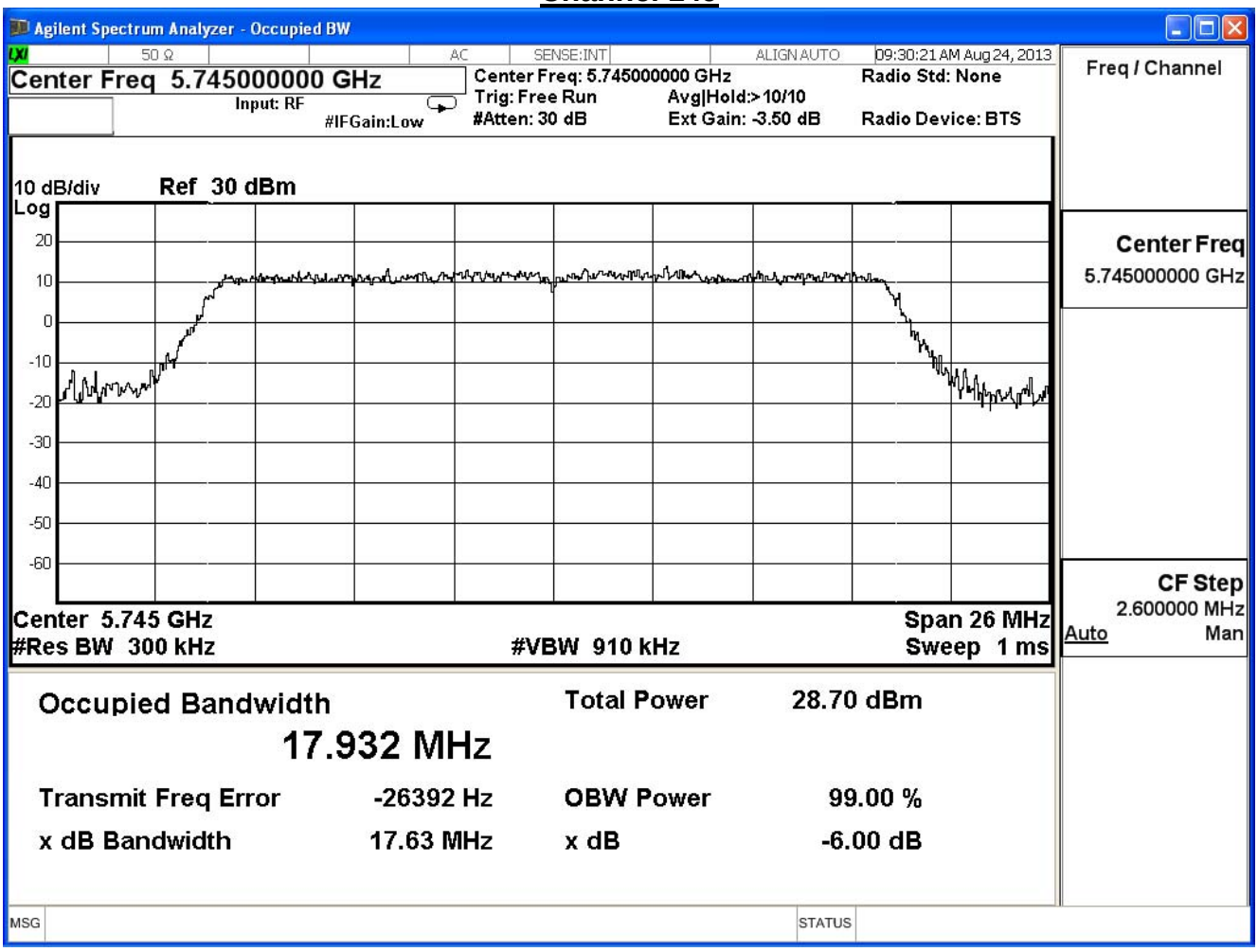
Channel 165


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:27:19 AM Aug 24, 2013
Center Freq 5.825000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.825000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
5.825000000 GHz
Center 5.825 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
16.728 MHz
Total Power
29.38 dBm
Transmit Freq Error
978 Hz
OBW Power
99.00 %
x dB Bandwidth
16.47 MHz
x dB
-6.00 dB
MSG
STATUS

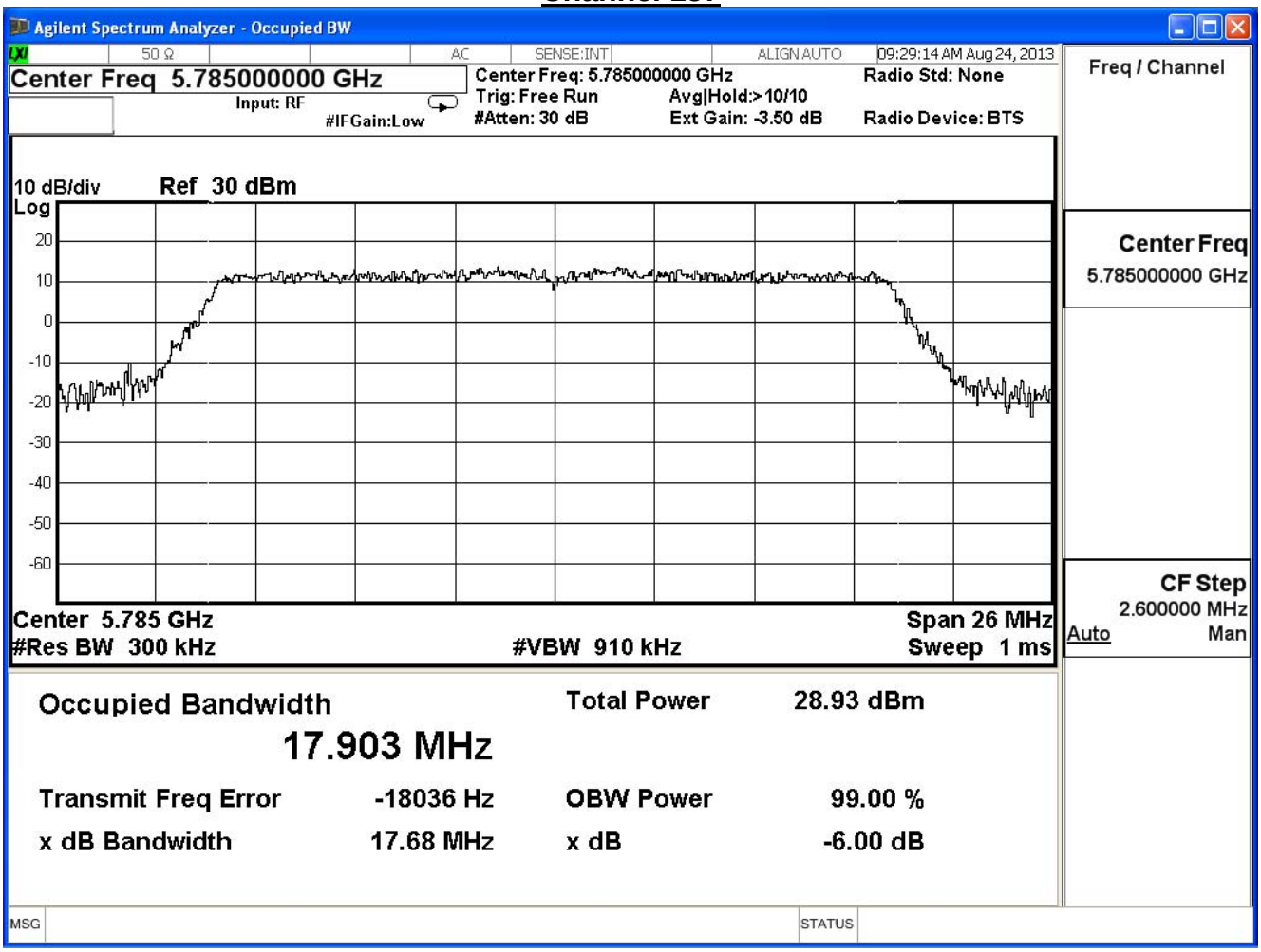
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11n (20MHz)(ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
149	5745	17.63	≧0.5	Pass
157	5785	17.68	≧0.5	Pass
165	5825	17.64	≧0.5	Pass

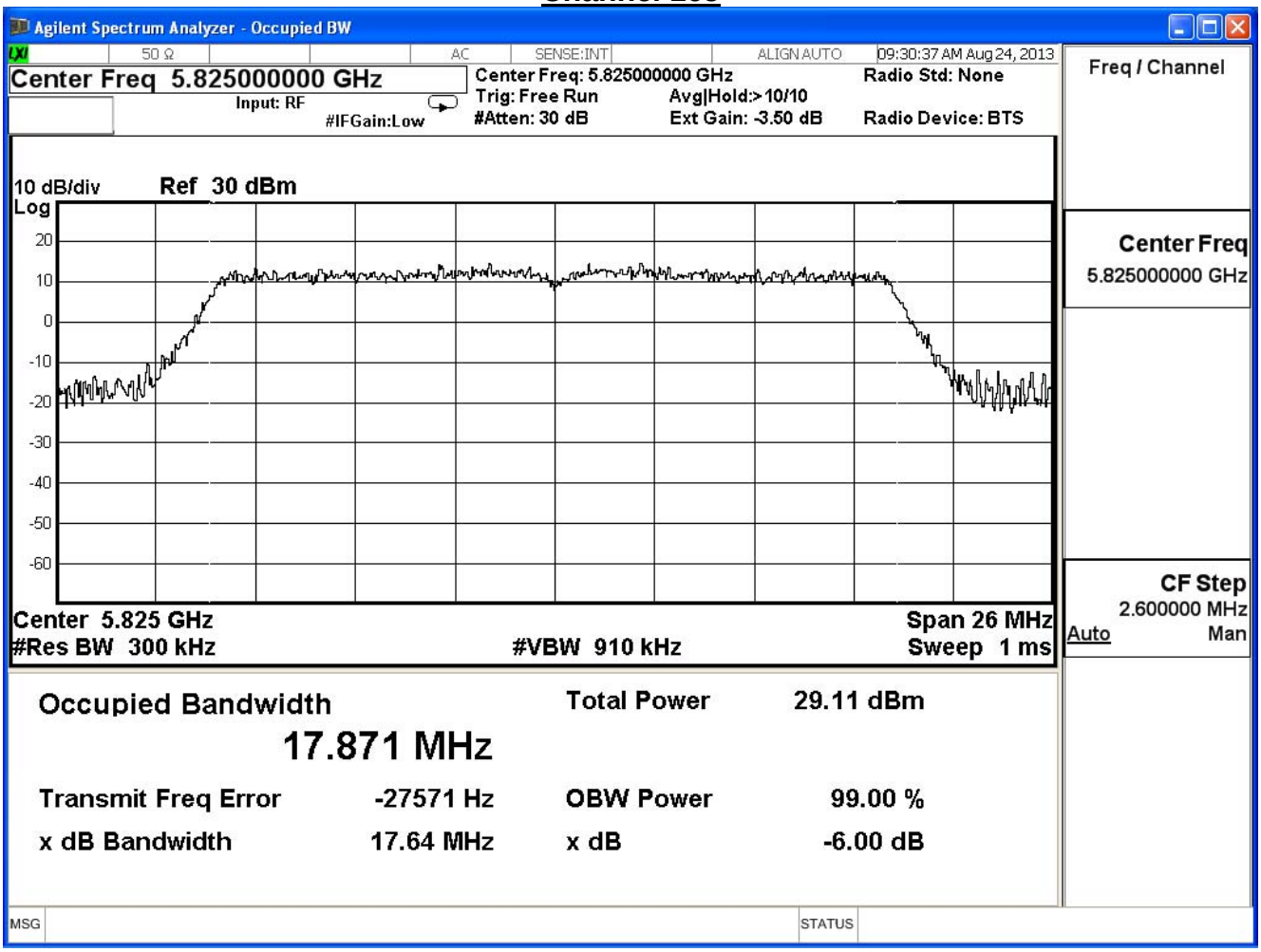
Channel 149



Channel 157


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:29:14 AM Aug 24, 2013
Center Freq 5.785000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.785000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
5.785000000 GHz
Center 5.785 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
17.903 MHz
Total Power
28.93 dBm
Transmit Freq Error
-18036 Hz
OBW Power
99.00 %
x dB Bandwidth
17.68 MHz
x dB
-6.00 dB
MSG
STATUS

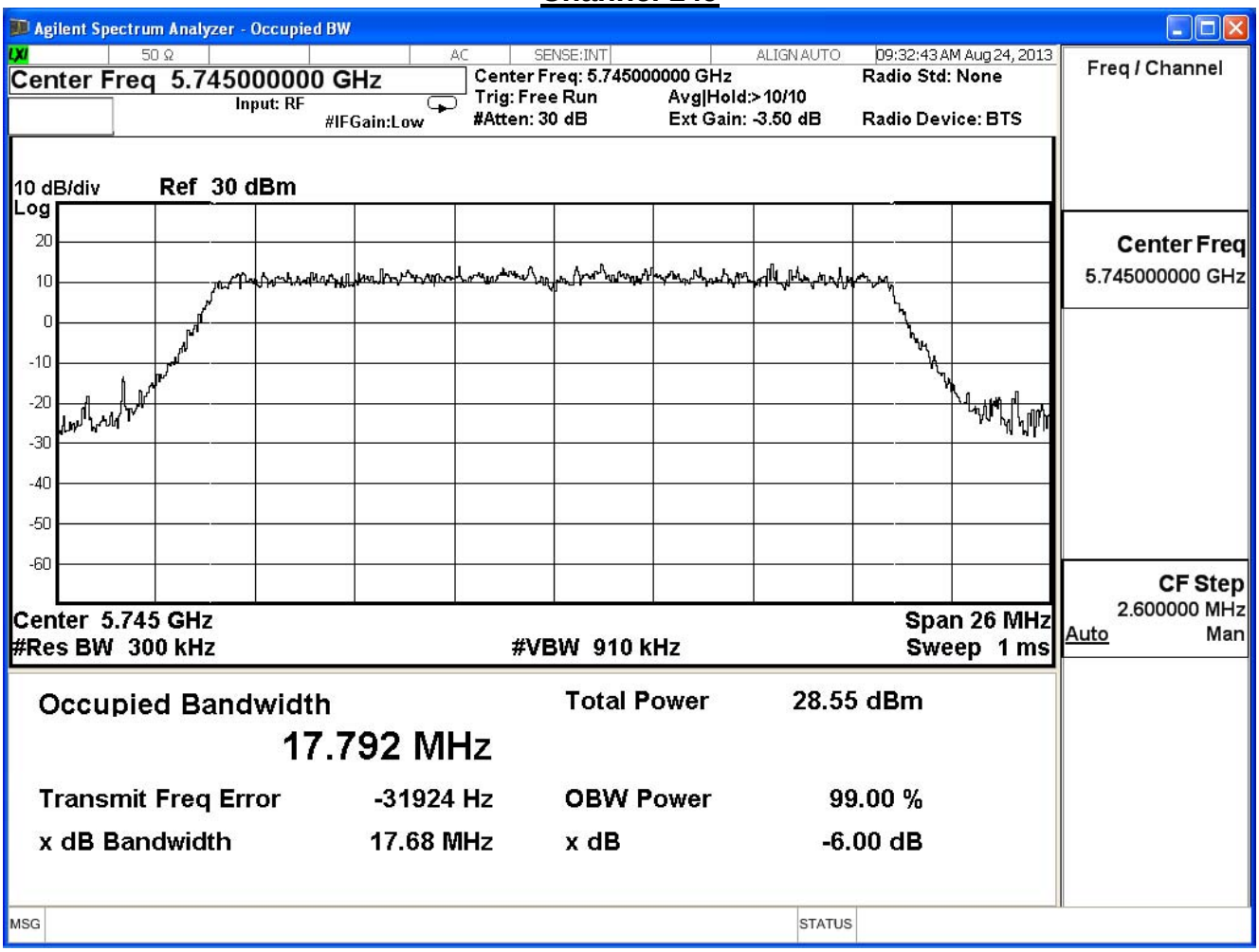
Channel 165


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:30:37 AM Aug 24, 2013
Center Freq 5.825000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.825000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
5.825000000 GHz
Center 5.825 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
17.871 MHz
Total Power
29.11 dBm
Transmit Freq Error
-27571 Hz
OBW Power
99.00 %
x dB Bandwidth
17.64 MHz
x dB
-6.00 dB
MSG
STATUS

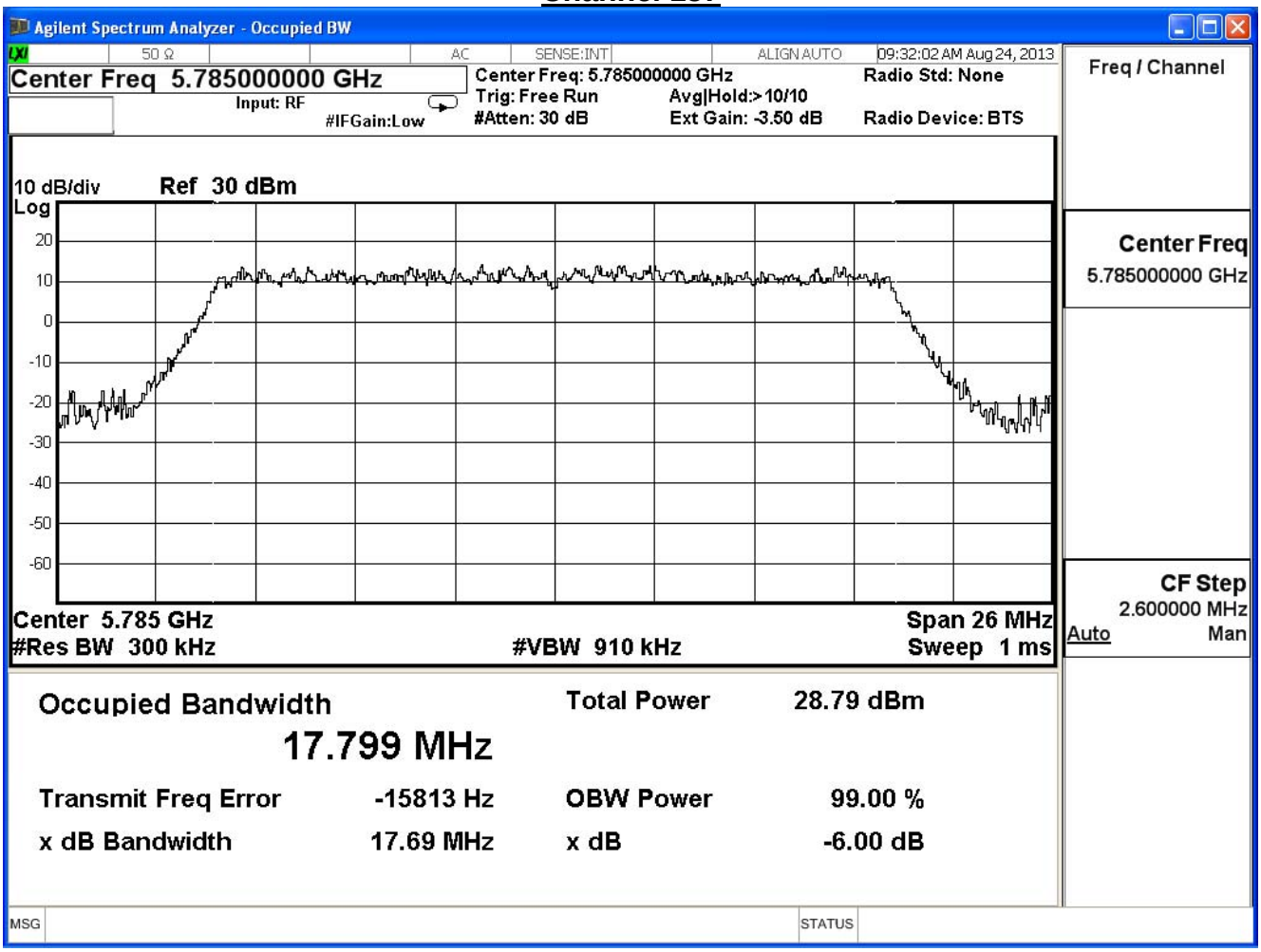
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11n (20MHz)(ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
149	5745	17.68	≧0.5	Pass
157	5785	17.69	≧0.5	Pass
165	5825	17.55	≧0.5	Pass

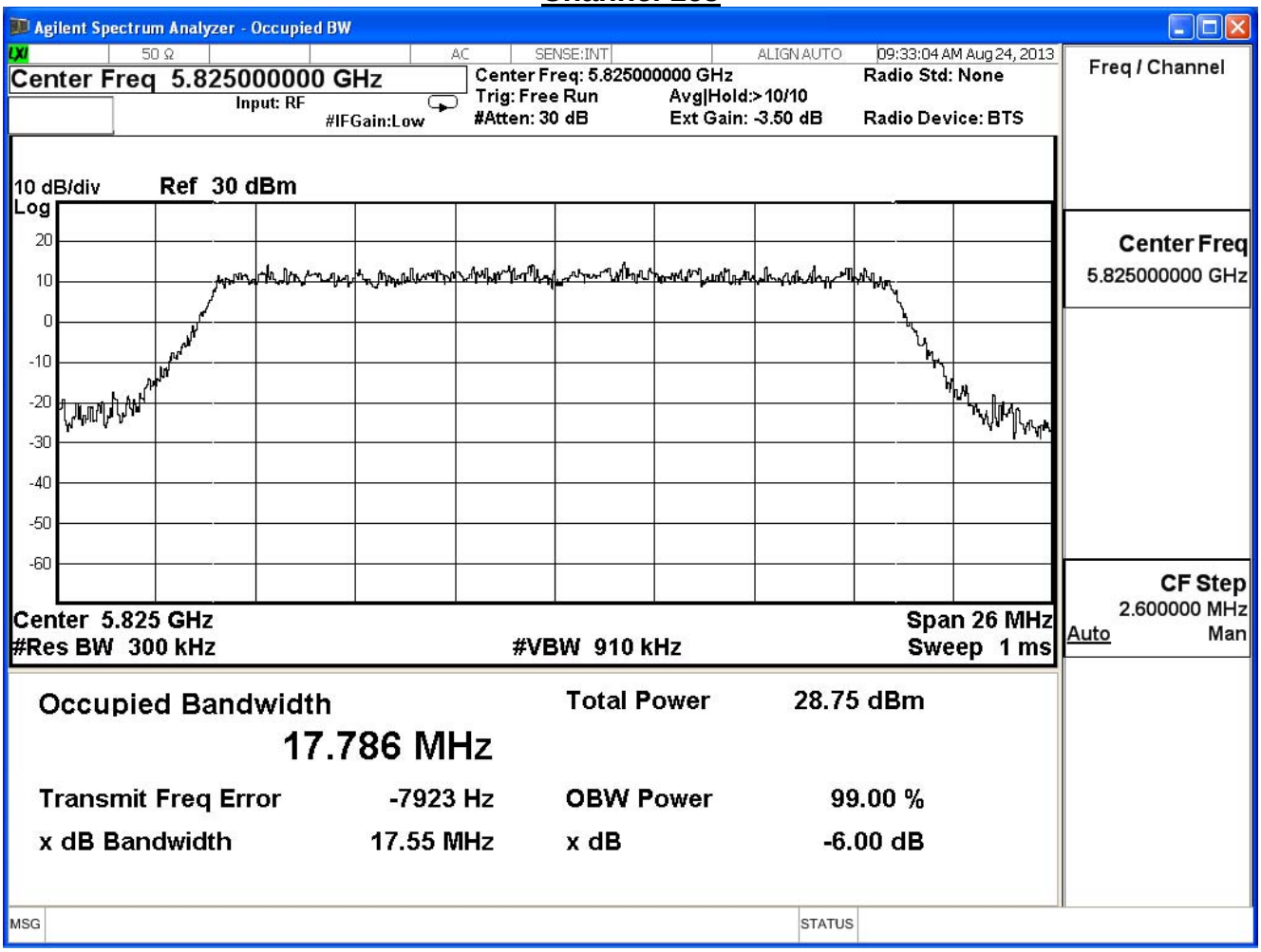
Channel 149



Channel 157


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:32:02 AM Aug 24, 2013
Center Freq 5.785000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.785000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
5.785000000 GHz
Center 5.785 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
17.799 MHz
Total Power
28.79 dBm
Transmit Freq Error
-15813 Hz
OBW Power
99.00 %
x dB Bandwidth
17.69 MHz
x dB
-6.00 dB
MSG
STATUS

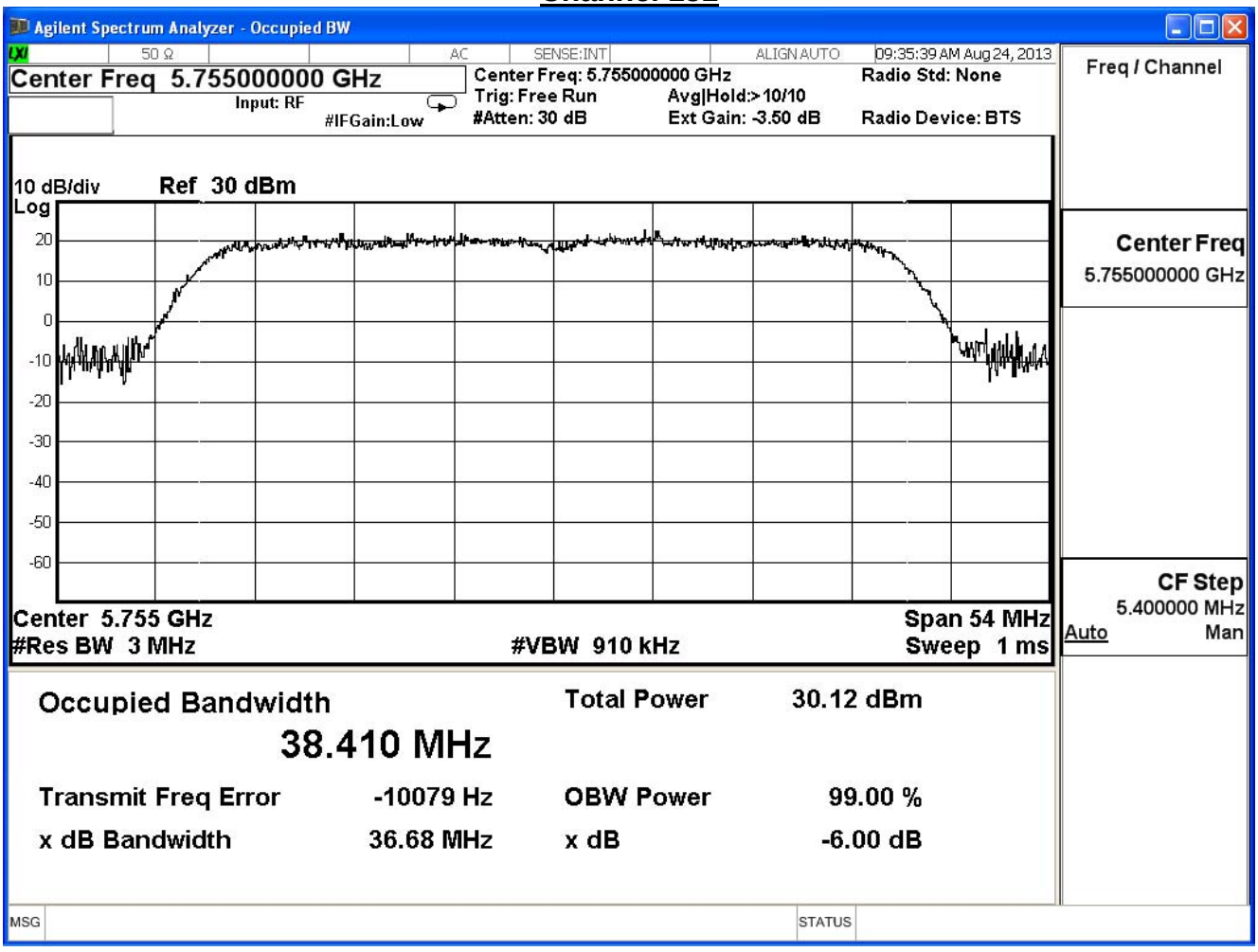
Channel 165


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:33:04 AM Aug 24, 2013
Center Freq 5.825000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.825000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 30 dBm
20
10
0
-10
-20
-30
-40
-50
-60
Center Freq
5.825000000 GHz
Center 5.825 GHz
#Res BW 300 kHz
#VBW 910 kHz
Span 26 MHz
Sweep 1 ms
CF Step
2.600000 MHz
Auto
Man
Occupied Bandwidth
17.786 MHz
Total Power
28.75 dBm
Transmit Freq Error
-7923 Hz
OBW Power
99.00 %
x dB Bandwidth
17.55 MHz
x dB
-6.00 dB
MSG
STATUS

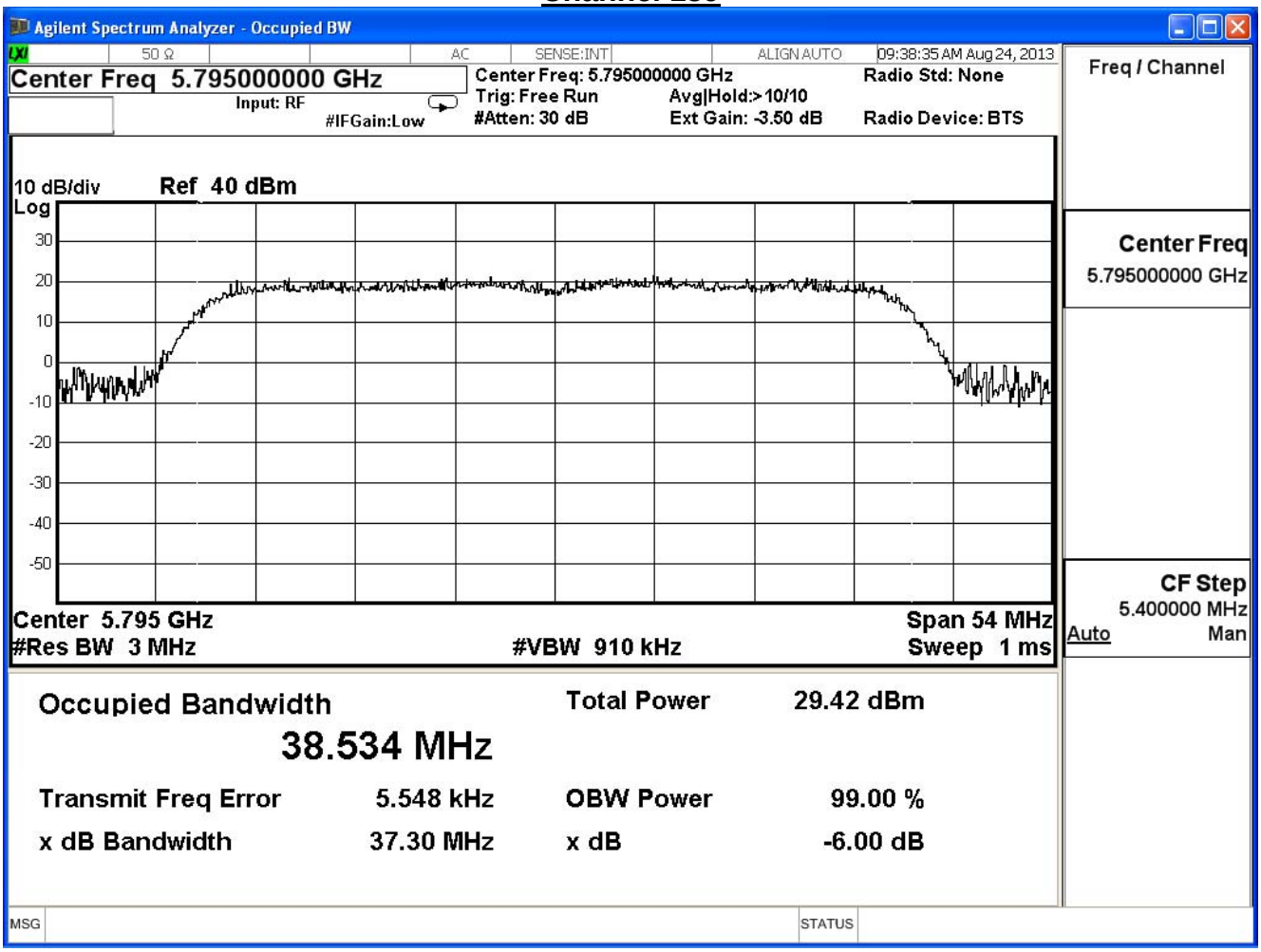
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11n (40MHz)(ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
151	5755	36.68	≧0.5	Pass
159	5795	37.30	≧0.5	Pass

Channel 151



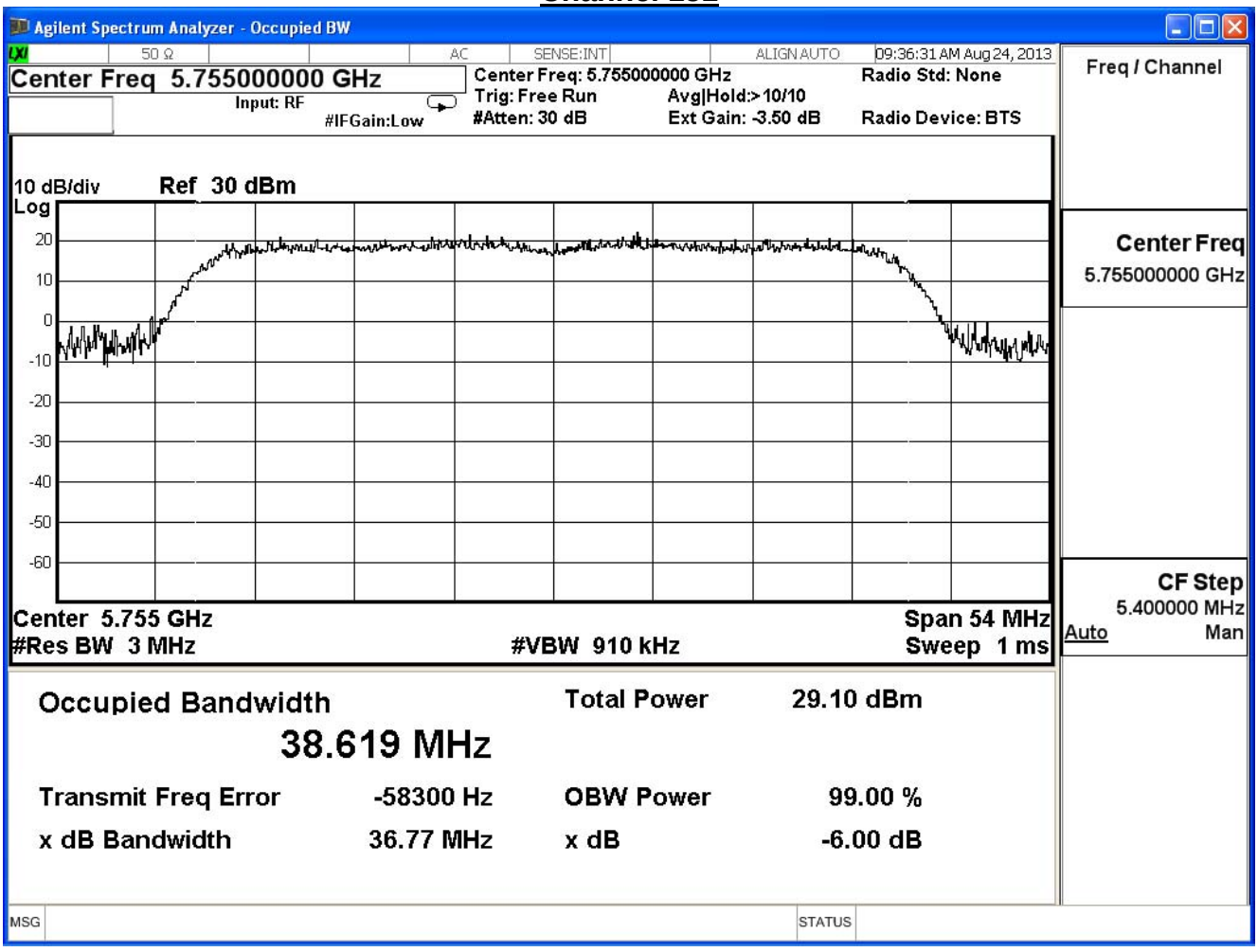
Channel 159


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:38:35 AM Aug 24, 2013
Center Freq 5.795000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.795000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 40 dBm
30
20
10
0
-10
-20
-30
-40
-50
Center Freq
5.795000000 GHz
Center 5.795 GHz
#Res BW 3 MHz
#VBW 910 kHz
Span 54 MHz
Sweep 1 ms
CF Step
5.400000 MHz
Auto
Man
Occupied Bandwidth
38.534 MHz
Total Power
29.42 dBm
Transmit Freq Error
5.548 kHz
OBW Power
99.00 %
x dB Bandwidth
37.30 MHz
x dB
-6.00 dB
MSG
STATUS

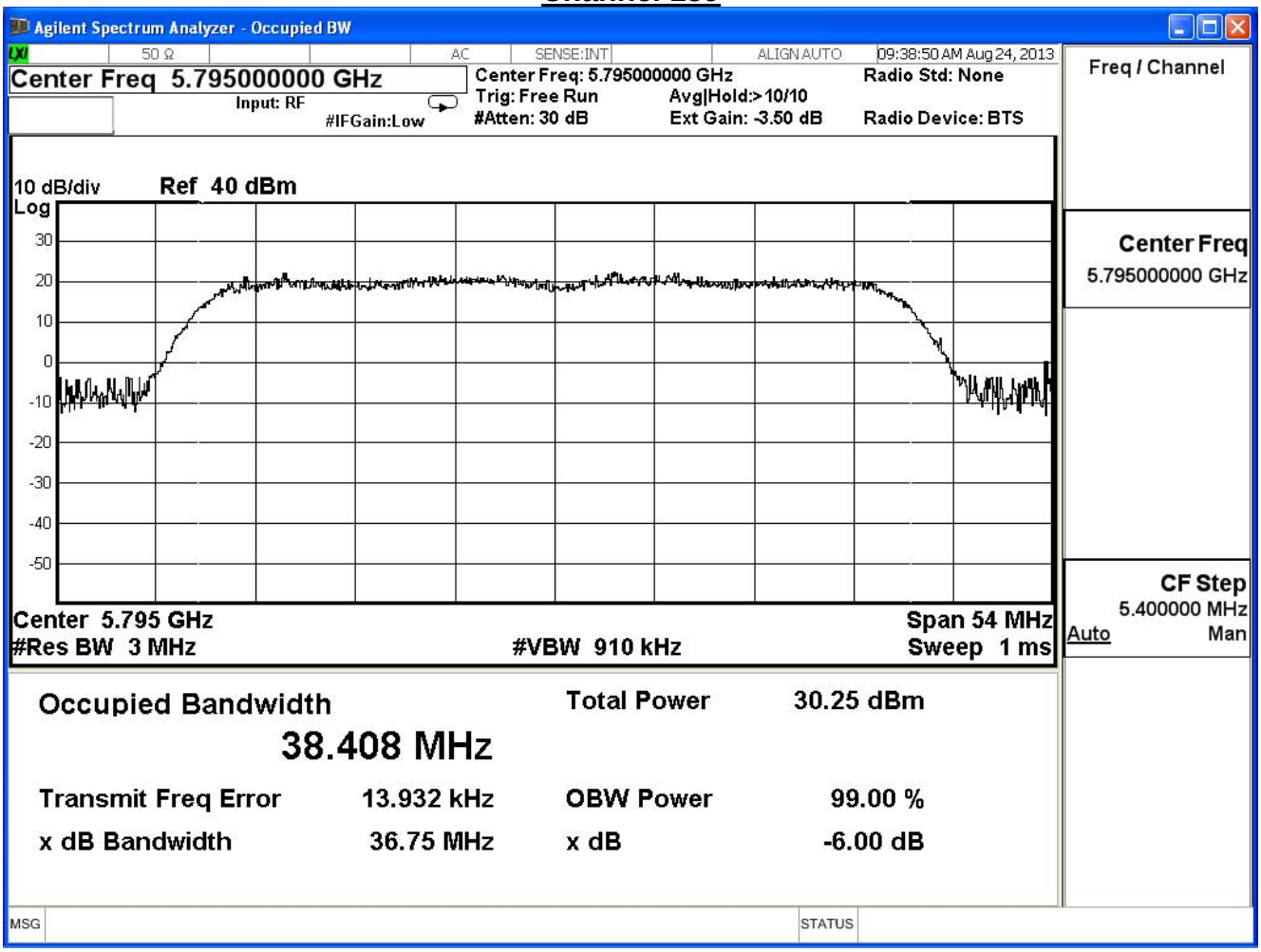
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11n (40MHz)(ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
151	5755	36.77	≧0.5	Pass
159	5795	36.75	≧0.5	Pass

Channel 151



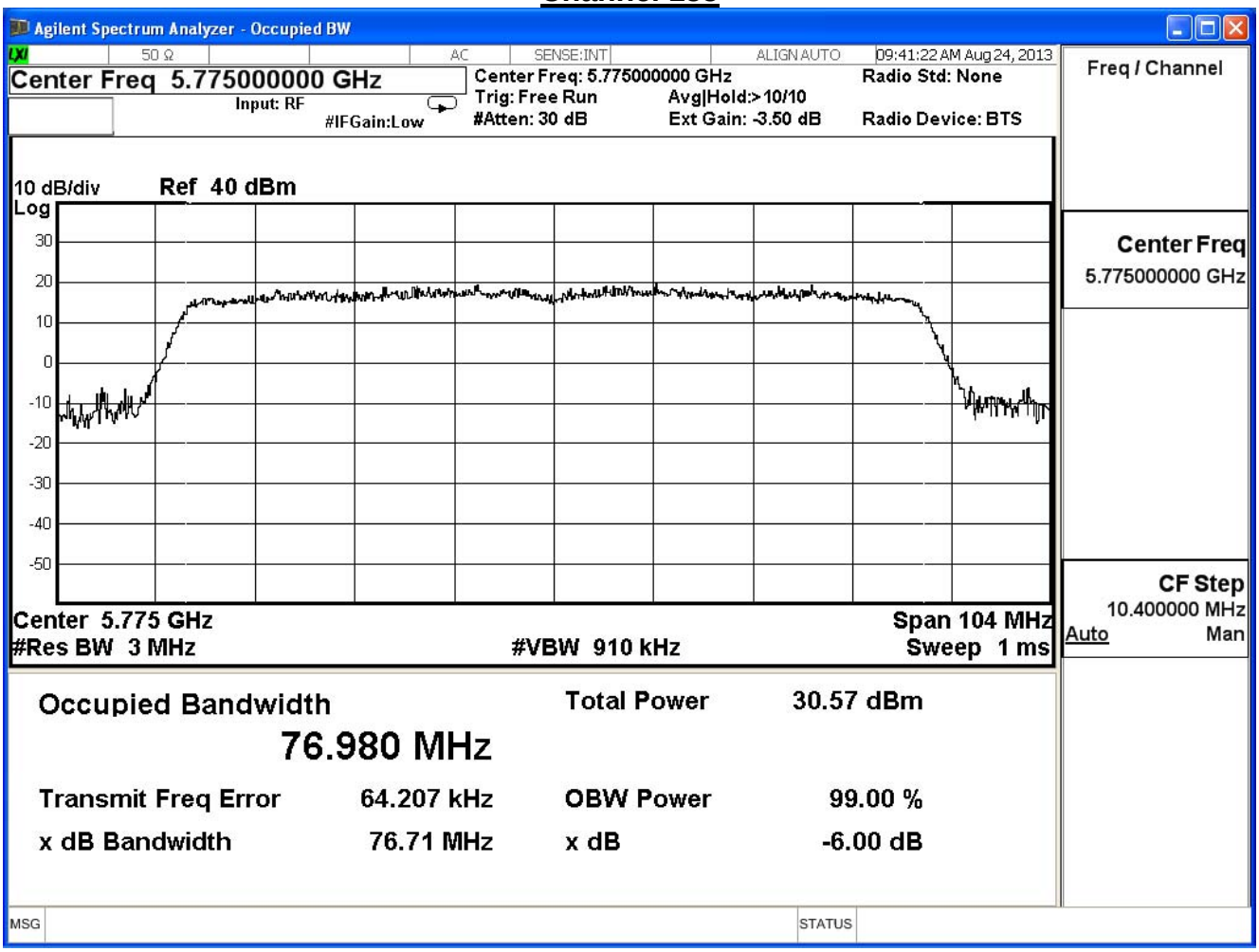
Channel 159


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:38:50 AM Aug 24, 2013
Center Freq 5.795000000 GHz
Input: RF
#IFGain:Low
Center Freq: 5.795000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Ext Gain: -3.50 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 40 dBm
30
20
10
0
-10
-20
-30
-40
-50
Center Freq
5.795000000 GHz
Center 5.795 GHz
#Res BW 3 MHz
#VBW 910 kHz
Span 54 MHz
Sweep 1 ms
CF Step
5.400000 MHz
Auto
Man
Occupied Bandwidth
38.408 MHz
Total Power
30.25 dBm
Transmit Freq Error
13.932 kHz
OBW Power
99.00 %
x dB Bandwidth
36.75 MHz
x dB
-6.00 dB
MSG
STATUS

Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11ac (80MHz)(ANT 0)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
155	5775	76.71	≧0.5	Pass

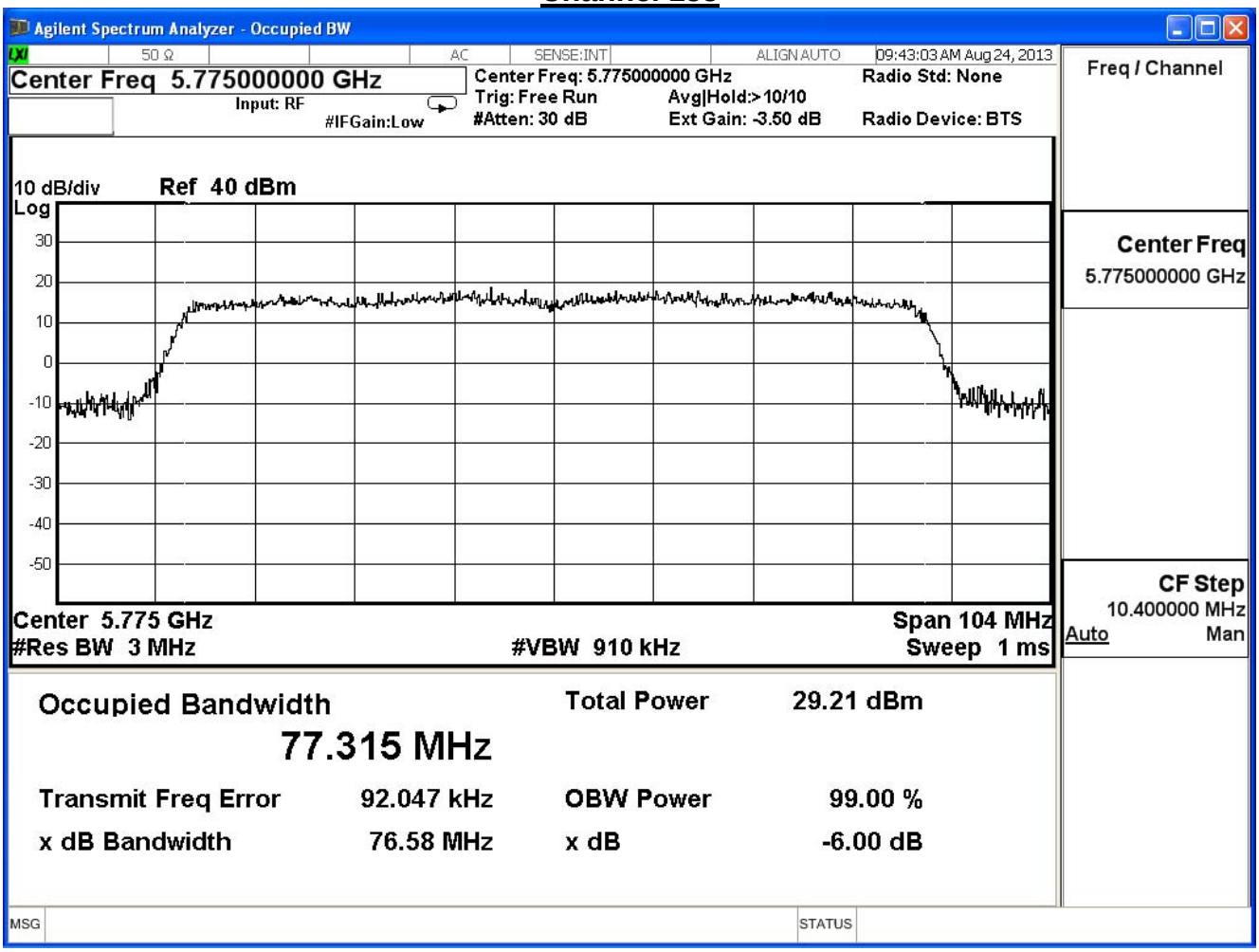
Channel 155



Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11ac (80MHz)(ANT 1)				
Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
155	5775	76.58	≧0.5	Pass

Channel 155



8. Power Density

8.1. Test Equipment

The following test equipment is used during the test:

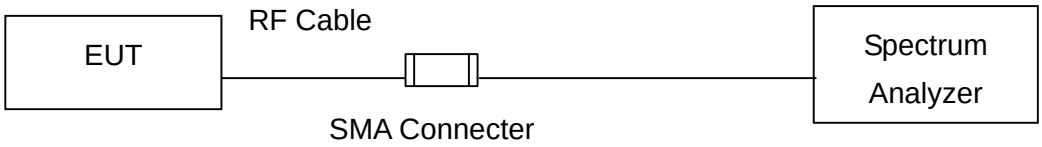
Power Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2014/08/05

Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

8.2. Test Setup

IEEE 802.11 b / g / n (20M / 40M) MODE



8.3. Limits

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8dBm in any 3kHz band during any time interval of continuous transmission.

8.4. Test Procedures

The EUT was setup according to ANSI C63.4: 2009; tested according to DTS test procedure of April 2013 KDB558074,Section 10.3 Measurement Procedure for compliance to FCC 47CFR 15.247 requirements.
Set RBW= 100 kHz, Set VBW= 300 kHz, Sweep time=Auto, Set detector=RMS detector. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).

8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

8.6. Uncertainty

The measurement uncertainty is defined as ±1.27dB.

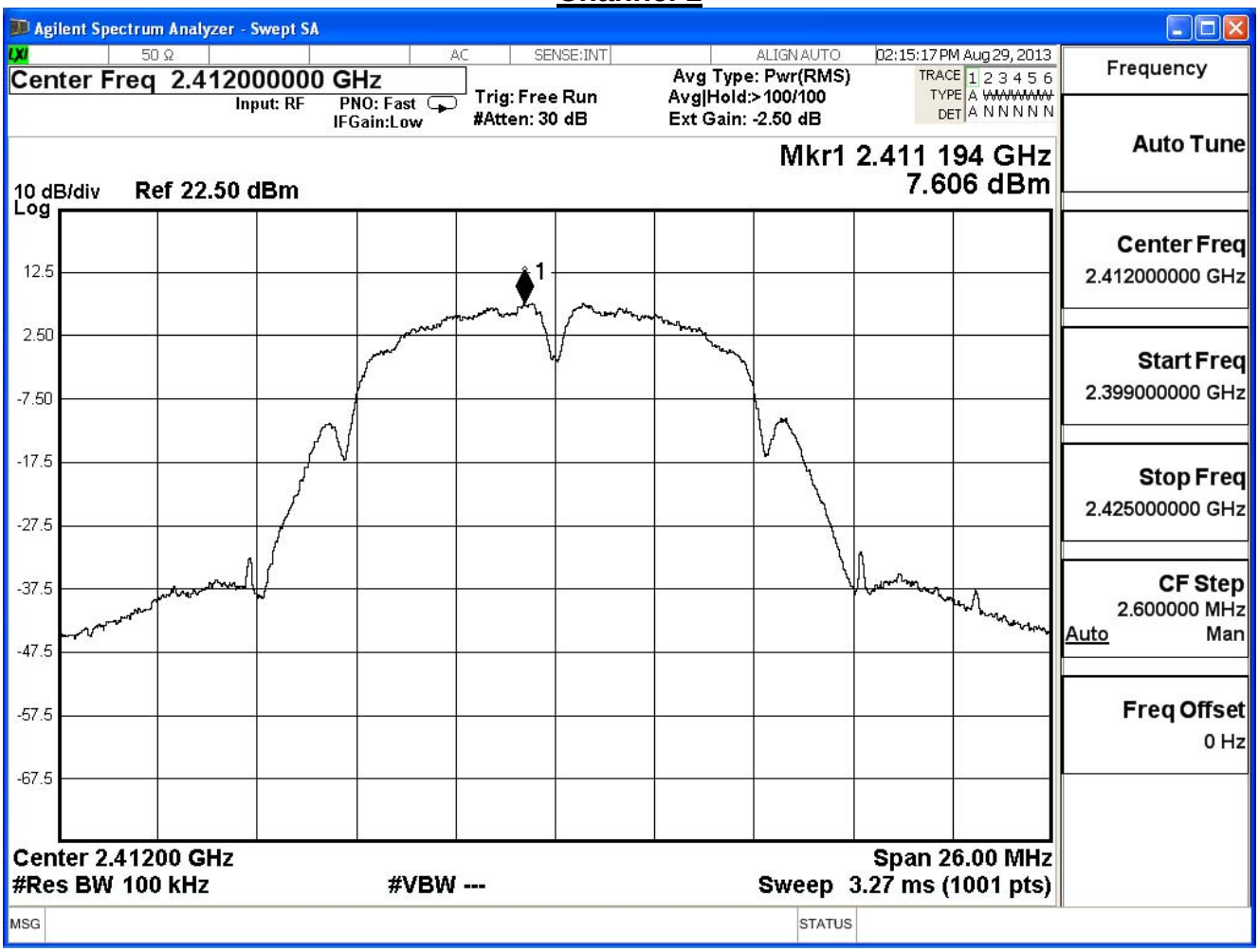
8.7. Test Result

Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Power Density		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

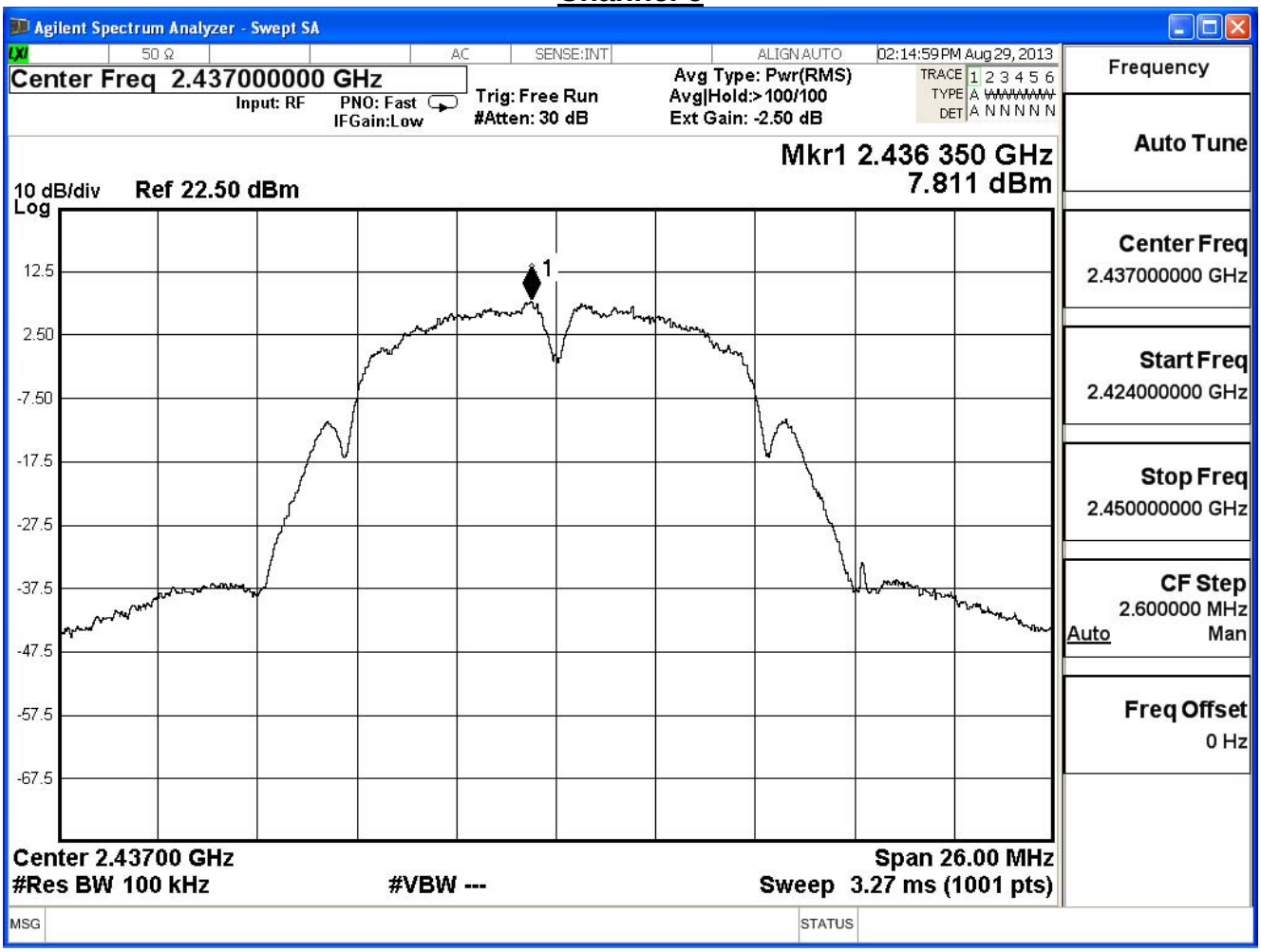
IEEE 802.11b					
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	7.61	-8.14	≦8	Pass
6	2437	7.81	-7.39	≦8	Pass
11	2462	7.81	-7.39	≦8	Pass

* Measure Level = Reading Level + BWCF = Reading Level + 10log(3kHz/100kHz)

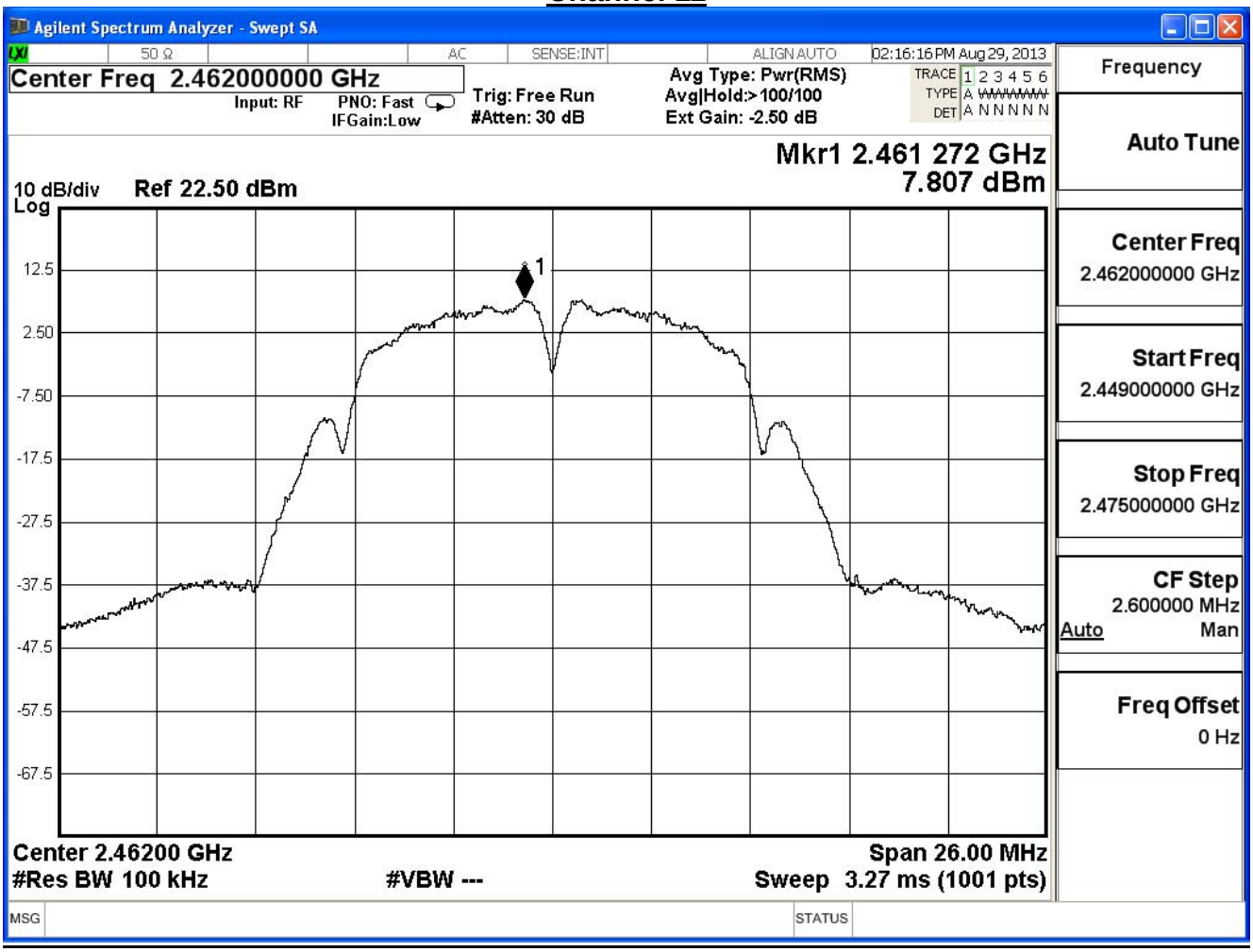
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:14:59 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Pwr(RMS)
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 2.436 350 GHz
7.811 dBm
10 dB/div
Log
Ref 22.50 dBm
12.5
2.50
-7.50
-17.5
-27.5
-37.5
-47.5
-57.5
-67.5
Center 2.43700 GHz
#Res BW 100 kHz
#VBW ---
Span 26.00 MHz
Sweep 3.27 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.424000000 GHz
Stop Freq
2.450000000 GHz
CF Step
2.600000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 11

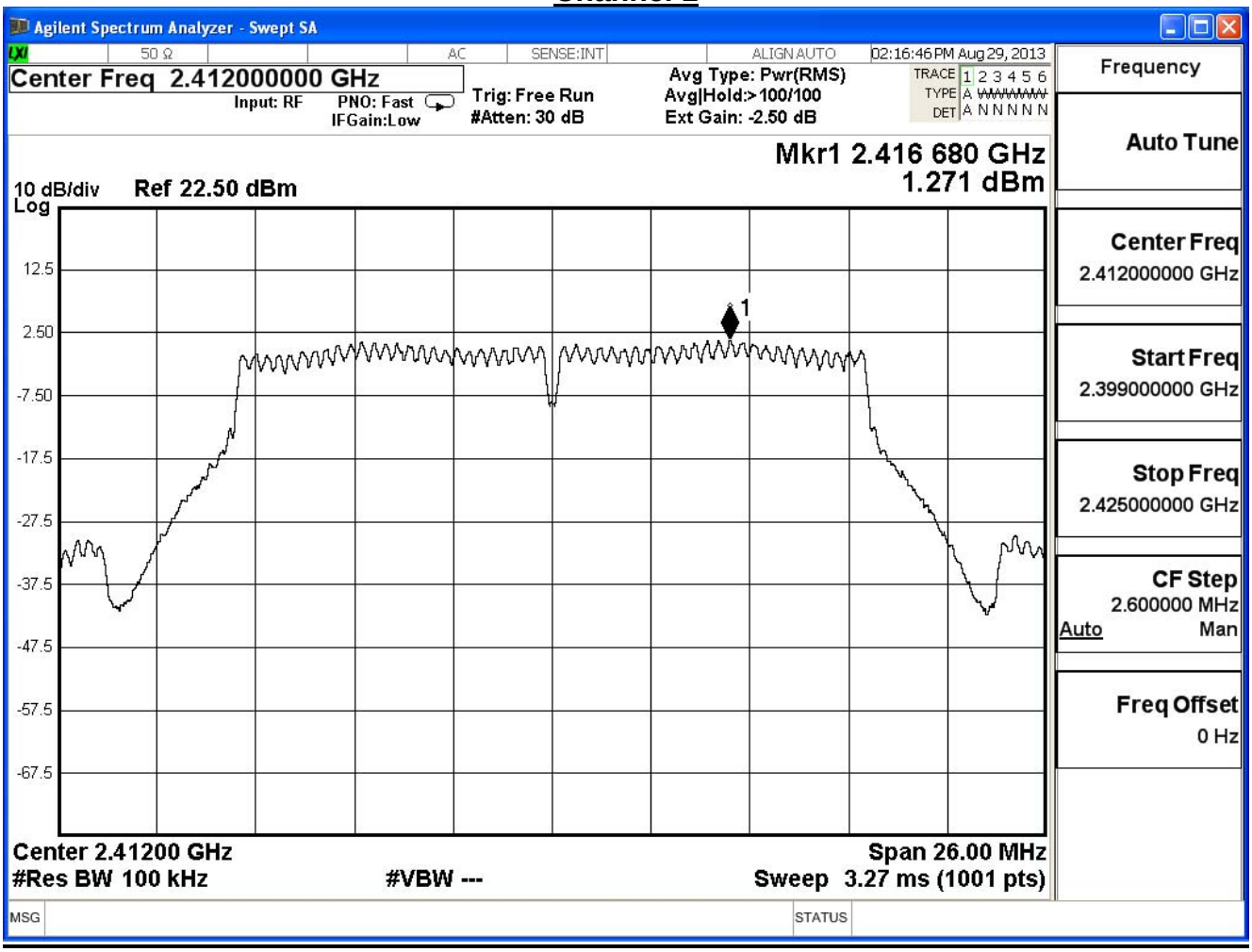

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:16:16 PM Aug 29, 2013
Center Freq 2.462000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Pwr(RMS)
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 2.461 272 GHz
7.807 dBm
10 dB/div
Log
Ref 22.50 dBm
12.5
2.50
-7.50
-17.5
-27.5
-37.5
-47.5
-57.5
-67.5
1
Center 2.46200 GHz
#Res BW 100 kHz
#VBW ---
Span 26.00 MHz
Sweep 3.27 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.449000000 GHz
Stop Freq
2.475000000 GHz
CF Step
2.600000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Power Density		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

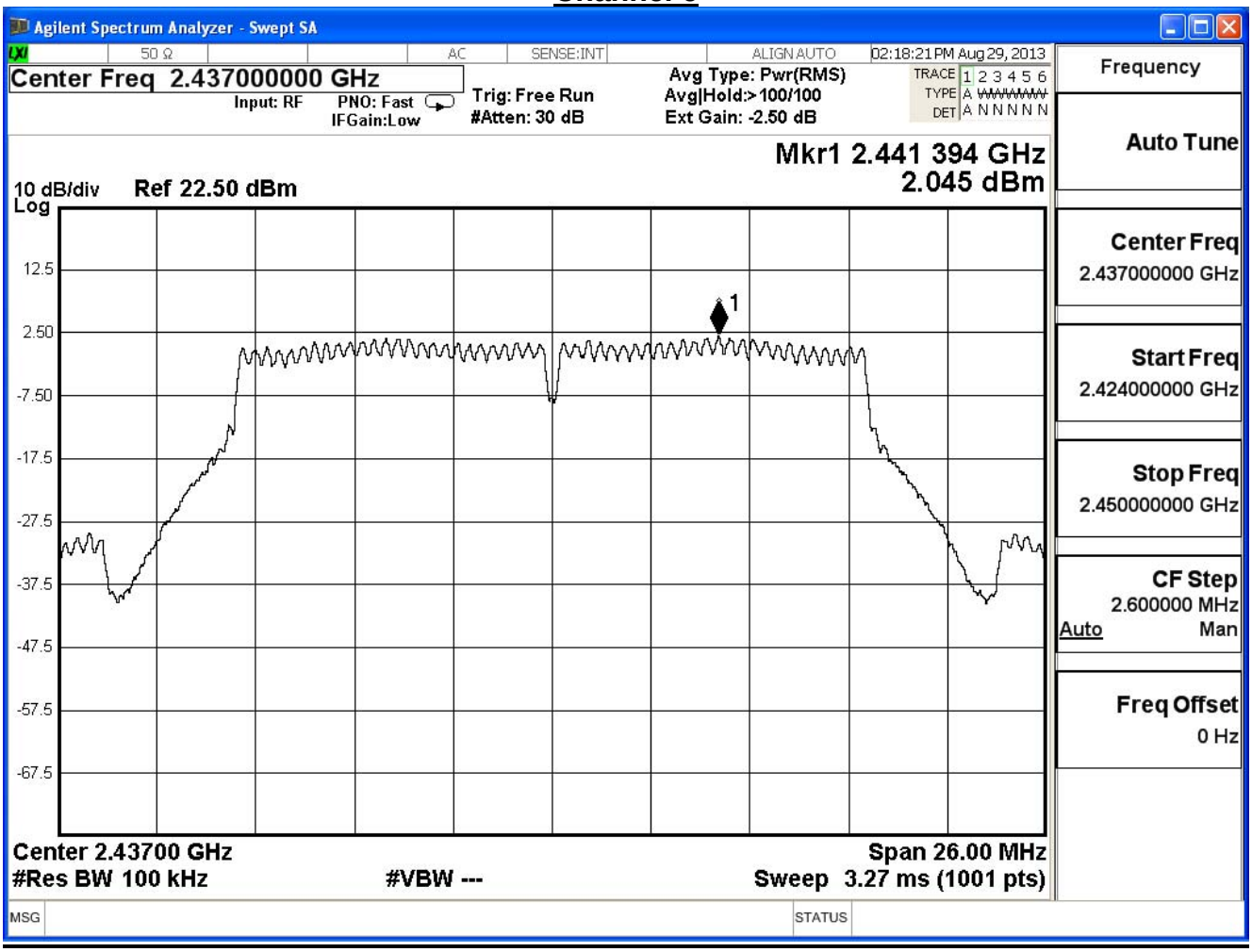
IEEE 802.11g(ANT 0)					
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	1.27	-13.93	≦7.28	Pass
6	2437	2.05	-13.16	≦7.28	Pass
11	2462	1.10	-14.10	≦7.28	Pass

* Measure Level = Reading Level + BWCF = Reading Level + 10log(3kHz/100kHz)
Note:
Total Gain = 10log(Ant N)+Max Gain = 10log(2)+3.71dBi=6.72dBi
Limit = 8dBm - (6.72dBi-6dB) = 7.28dBm

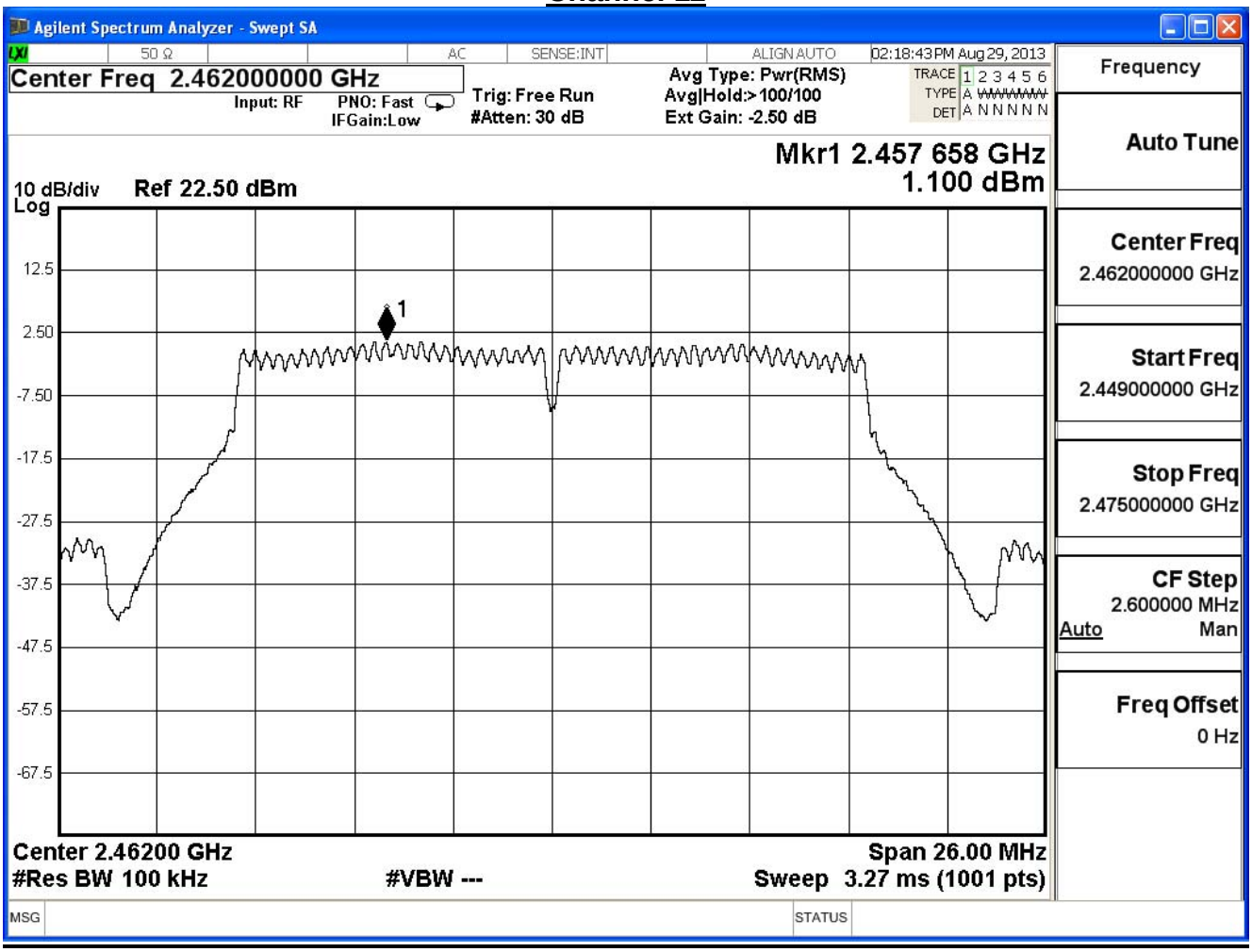
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:18:21 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Pwr(RMS)
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 2.441 394 GHz
2.045 dBm
10 dB/div
Log
Ref 22.50 dBm
12.5
2.50
-7.50
-17.5
-27.5
-37.5
-47.5
-57.5
-67.5
1
Center 2.43700 GHz
#Res BW 100 kHz
#VBW ---
Span 26.00 MHz
Sweep 3.27 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.424000000 GHz
Stop Freq
2.450000000 GHz
CF Step
2.600000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:18:43 PM Aug 29, 2013
Center Freq 2.462000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Pwr(RMS)
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 2.457 658 GHz
1.100 dBm
10 dB/div
Log
Ref 22.50 dBm
12.5
2.50
-7.50
-17.5
-27.5
-37.5
-47.5
-57.5
-67.5
1
Center 2.46200 GHz
#Res BW 100 kHz
#VBW ---
Span 26.00 MHz
Sweep 3.27 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.449000000 GHz
Stop Freq
2.475000000 GHz
CF Step
2.600000 MHz
Auto
Man
Freq Offset
0 Hz

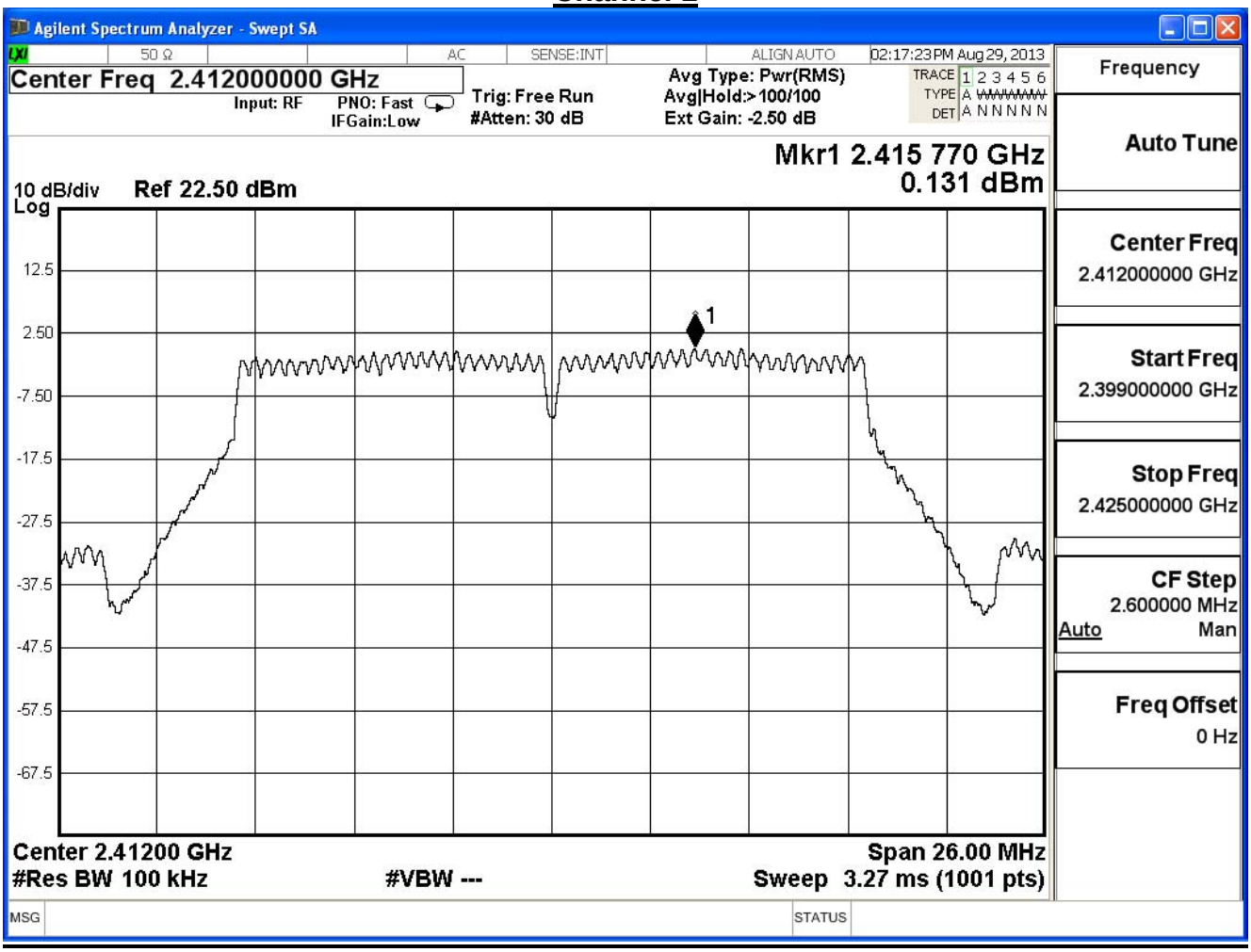
Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Power Density		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11g(ANT 1)

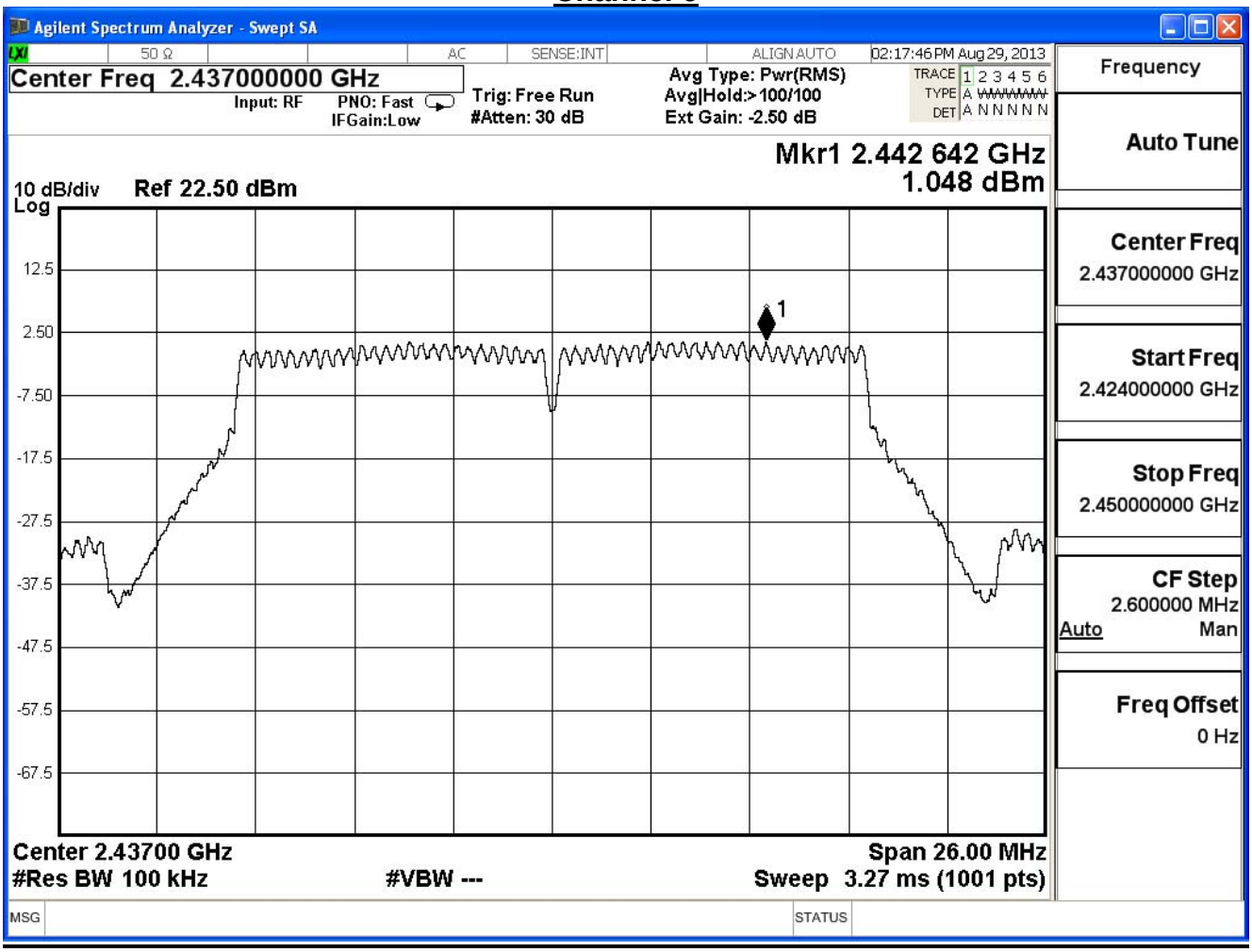
Channel No.	Frequency (MHz)	Reading Level(dBm)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	0.13	-15.07	≦7.28	Pass
6	2437	1.05	-14.15	≦7.28	Pass
11	2462	0.39	-14.81	≦7.28	Pass

* Measure Level = Reading Level + BWCF = Reading Level + 10log(3kHz/100kHz)
Note:
Total Gain = 10log(Ant N)+Max Gain = 10log(2)+3.71dBi=6.72dBi
Limit = 8dBm - (6.72dBi-6dB) = 7.28dBm

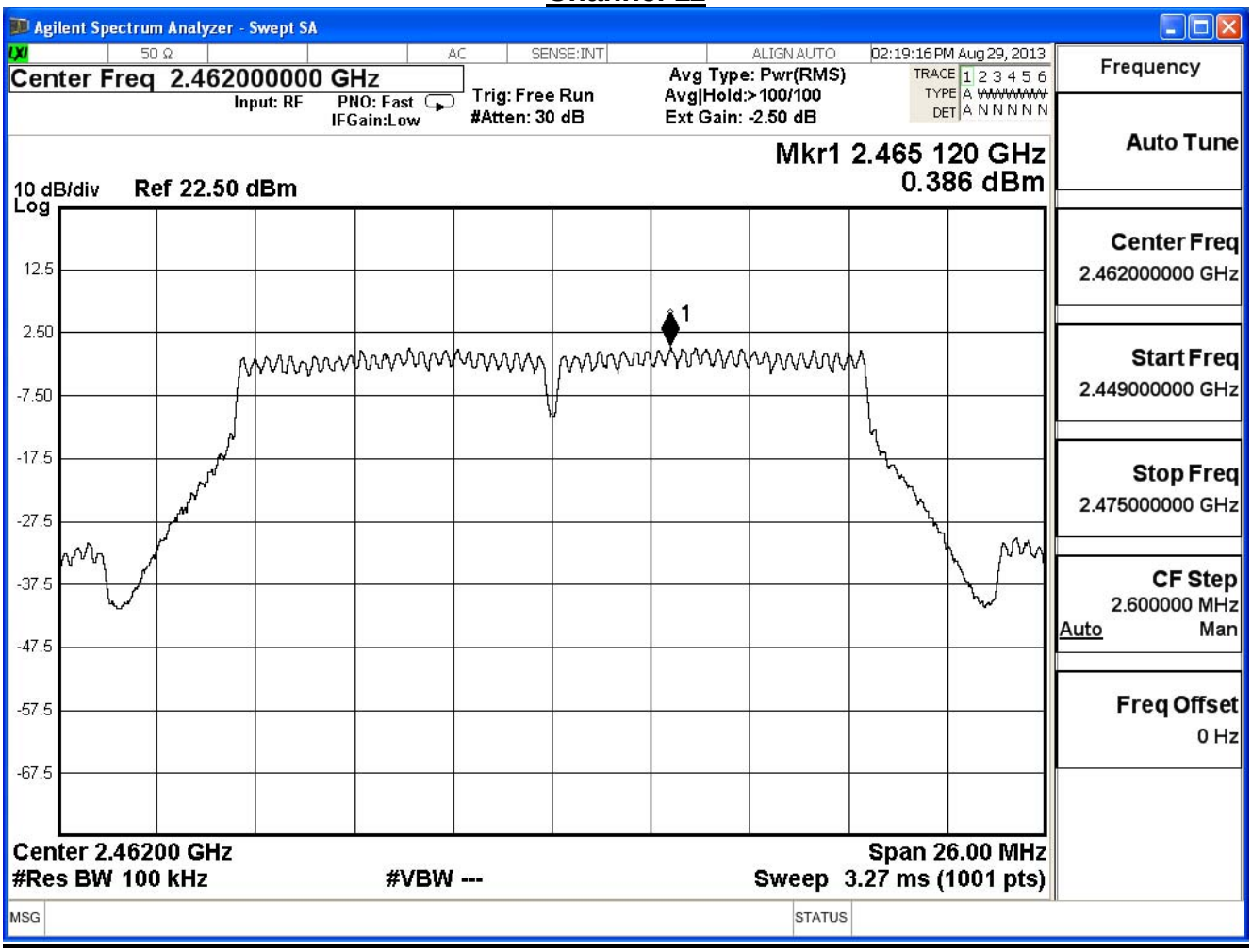
Channel 1



Channel 6


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:17:46 PM Aug 29, 2013
Center Freq 2.437000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Pwr(RMS)
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 2.442 642 GHz
1.048 dBm
10 dB/div
Log
Ref 22.50 dBm
12.5
2.50
-7.50
-17.5
-27.5
-37.5
-47.5
-57.5
-67.5
1
Center 2.43700 GHz
#Res BW 100 kHz
#VBW ---
Span 26.00 MHz
Sweep 3.27 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.437000000 GHz
Start Freq
2.424000000 GHz
Stop Freq
2.450000000 GHz
CF Step
2.600000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 11


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:19:16 PM Aug 29, 2013
Center Freq 2.462000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Pwr(RMS)
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 2.465 120 GHz
0.386 dBm
10 dB/div
Log
Ref 22.50 dBm
12.5
2.50
-7.50
-17.5
-27.5
-37.5
-47.5
-57.5
-67.5
1
Center 2.46200 GHz
#Res BW 100 kHz
#VBW ---
Span 26.00 MHz
Sweep 3.27 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.462000000 GHz
Start Freq
2.449000000 GHz
Stop Freq
2.475000000 GHz
CF Step
2.600000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Dual-band Wireless-AC1200 Gigabit Router		
Test Item	Power Density		
Test Mode	Mode 1:Transmit (CDD mode)_Adapter: EXA1206UH_LAN1		
Date of Test	2013/08/29	Test Site	SR7

IEEE 802.11g(ANT 0+1)				
Channel No.	Frequency (MHz)	Measure Level(dBm)	Limit (dBm)	Result
1	2412	-11.45	≦7.28	Pass
6	2437	-10.61	≦7.28	Pass
11	2462	-11.43	≦7.28	Pass

* Measure Level = Reading Level + BWCF = Reading Level + 10log(3kHz/100kHz)
Note:
Total Gain = 10log(Ant N)+Max Gain = 10log(2)+3.71dBi=6.72dBi
Limit = 8dBm - (6.72dBi-6dB) = 7.28dBm