



## Test Report

Product Name : PowerLine AV 500 Wireless N Mini Extender/  
PowerLine AV+ Wireless N Mini Extender  
Model No. : DHP-W310AV  
FCC ID. : KA2HPW310AVA1

Applicant : D-Link Corporation  
Address : No.289, Sinhu 3rd Rd., Neihu District, Taipei City 114,  
Taiwan, R.O.C.

Date of Receipt : 2012/08/13  
Issued Date : 2012/09/20  
Report No. : 128260R-RFUSP42V01  
Report Version : V1.0

The test results relate only to the samples tested.  
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

# Test Report Certification

Issued Date : 2012/09/20

Report No. : 128260R-RFUSP42V01



Product Name : PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender

Applicant : D-Link Corporation

Address : No.289, Sinhu 3rd Rd., Neihu District, Taipei City 114, Taiwan, R.O.C.

Manufacturer : D-Link Corporation

Model No. : DHP-W310AV

FCC ID. : KA2HPW310AVA1

EUT Test Voltage : AC 100-240V, 50-60Hz

Trade Name : D-Link

Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2011  
ANSI C63.4: 2009

Test Result : Complied

The test results relate only to the samples tested.

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Documented By : Demi Chang  
(Demi Chang / Engineering Adm. Specialist)

Reviewed By : Quale Tang  
( Quale Tang / Engineer )

Approved By : Roy Wang  
( Roy Wang / Manager )

## TABLE OF CONTENTS

Description	Page
1. General Information.....	5
1.1. EUT Description .....	5
1.2. Operational Description.....	9
1.3. Test Mode .....	10
1.4. Tested System Details.....	11
1.5. Configuration of tested System .....	11
1.6. EUT Exercise Software .....	11
1.7. Test Facility.....	12
2. Conducted Emission .....	14
2.1. Test Equipment.....	14
2.2. Test Setup .....	14
2.3. Limits .....	15
2.4. Test Procedure .....	15
2.5. Test Specification.....	15
2.6. Uncertainty .....	15
2.7. Test Result.....	16
2.8. Test Photo .....	18
3. Peak Power Output .....	19
3.1. Test Equipment.....	19
3.2. Test Setup .....	19
3.3. Test procedures.....	19
3.4. Limits .....	19
3.5. Test Specification.....	19
3.6. Uncertainty .....	19
3.7. Test Result.....	20
4. Radiated Emission .....	46
4.1. Test Equipment.....	46
4.2. Test Setup .....	46
4.3. Limits .....	47
4.4. Test Procedure .....	47
4.5. Test Specification.....	47
4.6. Uncertainty .....	47
4.7. Test Result.....	48
4.8. Test Photo .....	80

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5.	RF antenna conducted test .....	82
5.1.	Test Equipment.....	82
5.2.	Test Setup .....	82
5.3.	Limits .....	83
5.4.	Test Procedure .....	83
5.5.	Test Specification.....	83
5.6.	Uncertainty .....	83
5.7.	Test Result.....	84
6.	Radiated Emission Band Edge.....	102
6.1.	Test Equipment.....	102
6.2.	Test Setup .....	102
6.3.	Limits .....	103
6.4.	Test Procedure .....	103
6.5.	Test Specification.....	103
6.6.	Uncertainty .....	103
6.7.	Test Result.....	104
7.	Occupied Bandwidth .....	136
7.1.	Test Equipment.....	136
7.2.	Test Setup .....	136
7.3.	Test Procedures .....	136
7.4.	Limits .....	136
7.5.	Test Specification.....	136
7.6.	Uncertainty .....	136
7.7.	Test Result.....	137
8.	Power Density .....	155
8.1.	Test Equipment.....	155
8.2.	Test Setup .....	155
8.3.	Limits .....	155
8.4.	Test Procedures .....	155
8.5.	Test Specification.....	155
8.6.	Uncertainty .....	155
8.7.	Test Result.....	156
Attachement.....		176
	EUT Photograph.....	176

## 1. General Information

### 1.1. EUT Description

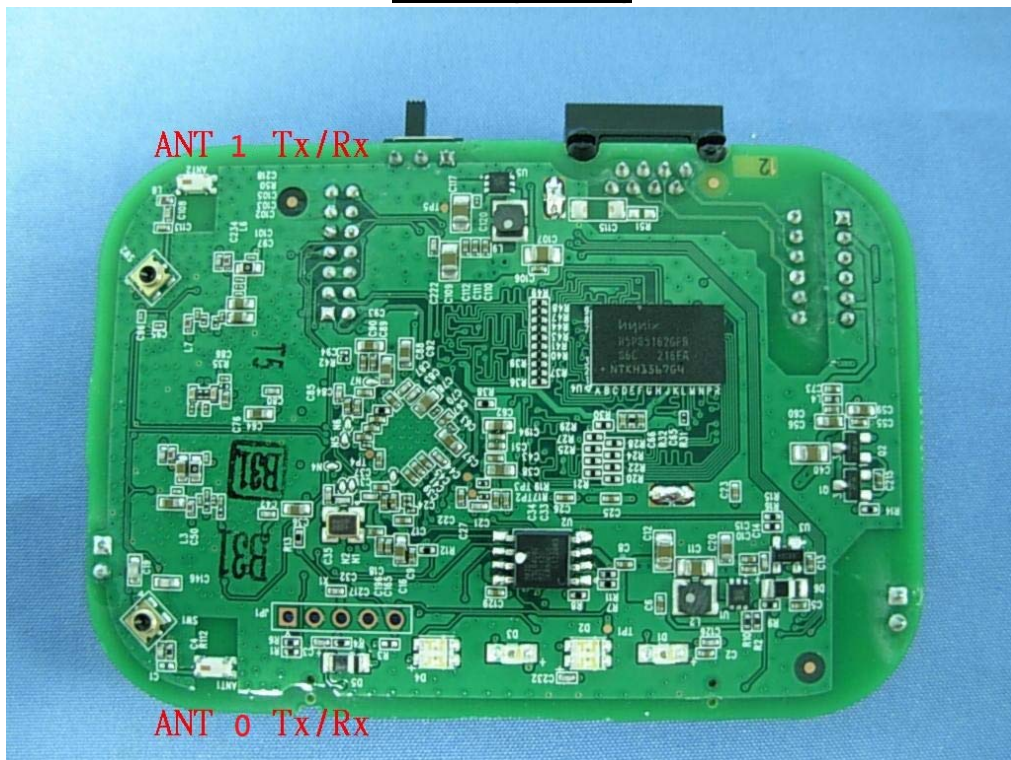
Product Name	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender
Product Type	WLAN (2TX, 2RX)
Trade Name	D-Link
Model No.	DHP-W310AV
Frequency Range -IEEE 802.11b/g & IEEE 802.11n (20MHz)	2412~2462MHz
Frequency Range- IEEE 802.11n (40MHz)	2422~2452MHz
Channel Number (IEEE 802.11b/g & IEEE 802.11n (20MHz))	11
Channel Number- IEEE 802.11n (40MHz)	7
Type of Modulation (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Type of Modulation (IEEE 802.11g/n)	Orthogonal Frequency Division Multiplexing (OFDM)
Data Speed (IEEE 802.11b)	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data Speed (IEEE 802.11g)	6Mbps,9Mbps,12Mbps,18Mbps,24Mbps,36Mbps,48Mbps,54Mbps
Data Speed (IEEE 802.11n)	Support a subset of the combination of GI, MCS 0~MCS 15 and bandwidth defined in 802.11n
Antenna Gain	1.5dBi
Channel Control	Manual and Auto
Antenna Type	Soldered on PCB

Component	
LAN Cable	Non-Shielded, 1m

ANT-TX / Rx & Bandwidth

ANT-TX / RX	SINGLE-TX		TWO-TX		RX	
	20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
IEEE802.11b	✓				✓	
IEEE802.11g	✓					
IEEE802.11n			✓	✓	✓	✓

ANT 0/1 (TX / RX)



**IEEE 802.11n**

MCS Index	Modulation	R	N <sub>BPSCS</sub>	N <sub>CBPS</sub>		N <sub>DBPS</sub>		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI (Note1)	
								20MHz	40MHz	20MHz	40MHz
0	BPSK	1/2	1	52	108	26	54	6.5	13.5	7.2	15.0
1	QPSK	1/2	2	104	216	52	108	13.0	27.0	14.4	30.0
2	QPSK	3/4	2	104	216	78	162	19.5	40.5	21.7	45.0
3	16-QAM	1/2	4	208	432	104	216	26.0	54.0	28.9	60.0
4	16-QAM	3/4	4	208	432	156	324	39.0	81.0	43.3	90.0
5	64-QAM	2/3	6	312	648	208	432	52.0	108.0	57.8	120.0
6	64-QAM	3/4	6	312	648	234	486	58.5	121.5	65.0	135.0
7	64-QAM	5/6	6	312	648	260	540	65.0	135.0	72.2	150.0

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 1 – MCS parameters for TX Antenna number = 1

MCS Index	Modulation	R	N <sub>BPSCS</sub>	N <sub>CBPS</sub>		N <sub>DBPS</sub>		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI (Note1)	
								20MHz	40MHz	20MHz	40MHz
8	BPSK	1/2	1	104	216	52	108	13.0	27.0	14.4	30.0
9	QPSK	1/2	2	208	432	104	216	26.0	54.0	28.9	60.0
10	QPSK	3/4	2	208	432	156	324	39.0	81.0	43.3	90.0
11	16-QAM	1/2	4	416	864	208	432	52.0	108.0	57.8	120.0
12	16-QAM	3/4	4	416	864	312	648	78.0	162.0	86.7	180.0
13	64-QAM	2/3	6	624	1296	416	864	104.0	216.0	115.6	240.0
14	64-QAM	3/4	6	624	1296	468	972	117.0	243.0	130.0	270.0
15	64-QAM	5/6	6	624	1296	520	1080	130.0	270.0	144.4	300.0

Note 1: Support of 400ns GI is optional on transmit and receive.

Table 2 – MCS parameters for TX Antenna number = 2

Symbol	Explanation
R	Code rate
$N_{BPSC}$	Number of coded bits per single carrier
$N_{CBPS}$	Number of coded bits per symbol
$N_{DBPS}$	Number of data bits per symbol
GI	guard interval

IEEE 802.11b/g & IEEE 802.11n (20MHz) - 2.4GHz

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
001	2412 MHz	002	2417 MHz	003	2422 MHz	004	2427 MHz
005	2432 MHz	006	2437 MHz	007	2442 MHz	008	2447 MHz
009	2452 MHz	010	2457 MHz	011	2462 MHz		

IEEE 802.11n (40MHz) - 2.4GHz

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
003	2422 MHz	004	2427 MHz	005	2432 MHz	006	2437 MHz
007	2442 MHz	008	2447 MHz	009	2452 MHz		

Note:

1. This device is a PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender including 2.4GHz b/g/n (2x2) transmitting and receiving function.
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with Part 15 Subpart C Paragraph 15.247.
3. Regards to the frequency band operation; the lowest , middle and highest frequency of channel were selected to perform the test, and then shown on this report.
4. This device is a composite device in accordance with Part 15 regulations. The receiving function receiving was tested and its test report number is 128260R-RFUSP37V02 under Declaration of Conformity.



**1.3. Test Mode**

Quietek has verified the construction and function in typical operation. The preliminary tests were performed in different data rate, and to find the worst condition, which was shown in this test report. The following table is the final test mode.

TX	Mode 1: Transmit
----	------------------

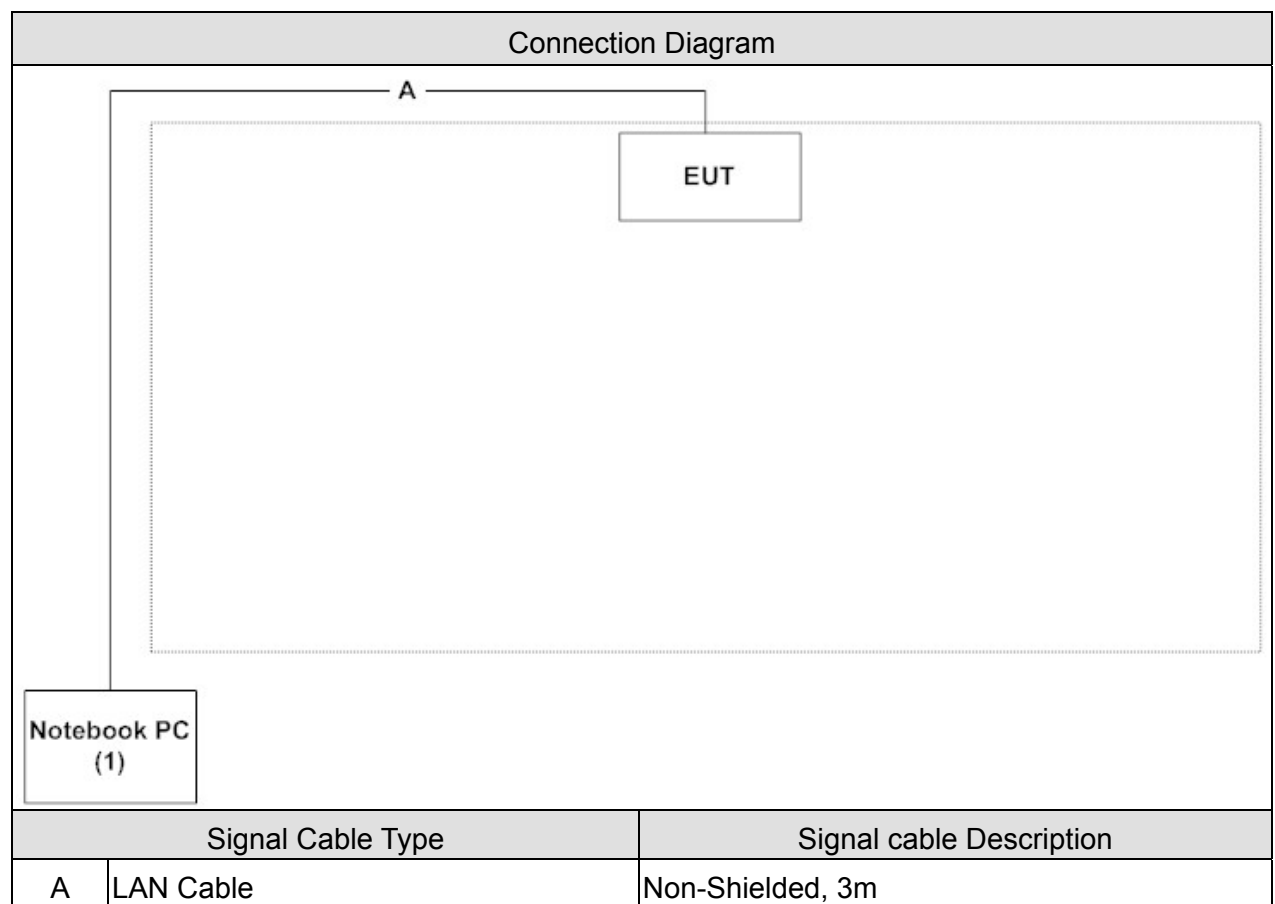
Test Items	Mode	Channel	Antenna	Result
Conducted Emission	11n(40MHz)	6	0+1	Complies
Peak Power Output	b/g	1/ 6/ 11	0	Complies
	11n(20MHz)	1/ 6/ 11	0+1	Complies
	11n(40MHz)	3/ 6/ 9	0+1	Complies
Radiated Emission	b/g	1/ 6/ 11	0	Complies
	11n(20MHz)	1/ 6/ 11	0+1	Complies
	11n(40MHz)	3/ 6/ 9	0+1	Complies
RF antenna conducted test	b/g	1/ 11	0	Complies
	11n(20MHz)	1/ 11	0/1	Complies
	11n(40MHz)	3/ 9	0/1	Complies
Radiated Emission Band Edge	b/g	1/ 11	0	Complies
	11n(20MHz)	1/ 11	0+1	Complies
	11n(40MHz)	3/ 9	0+1	Complies
Occupied Bandwidth	b/g	1/ 6/ 11	0	Complies
	11n(20MHz)	1/ 6/ 11	0/1	Complies
	11n(40MHz)	3/ 6/ 9	0/1	Complies
Power Density	b/g	1/ 6/ 11	0	Complies
	11n(20MHz)	1/ 6/ 11	0+1	Complies
	11n(40MHz)	3/ 6/ 9	0+1	Complies

### 1.4. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	DELL	PP26L	66TLZ1S	DoC	Non-Shielded, 1.8m

### 1.5. Configuration of tested System



### 1.6. EUT Exercise Software

1	Setup the EUT as shown in Section 1.5.
2	Execute the test program "Atheros Radio Test 2 <ART2-GUI>" on the notebook.
3	Configure the test mode, the test channel, and the data rate.
4	Press "Start TX" to start the continuous transmitting.
5	Verify that the EUT works properly.

**1.7. Test Facility**

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output (DSSS)	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission (DSSS)	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 RF antenna conducted test (DSSS)	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge (DSSS)	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth (DSSS)	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Power Density (DSSS)	15 - 35	20
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000

Site Description: September 27, 2010 File on  
Federal Communications Commission  
Laboratory Division  
7435 Oakland Mills Road  
Columbia, MD 21046  
Registration Number: 365520



Accredited by TAF  
Accreditation Number: 1313  
Effective through: December 27, 2013



Accredited by NVLAP  
NVLAP Lab Code: 200347-0  
Effective through: September 30, 2012



Site Name: Quietek Corporation  
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**2. Conducted Emission**

**2.1. Test Equipment**

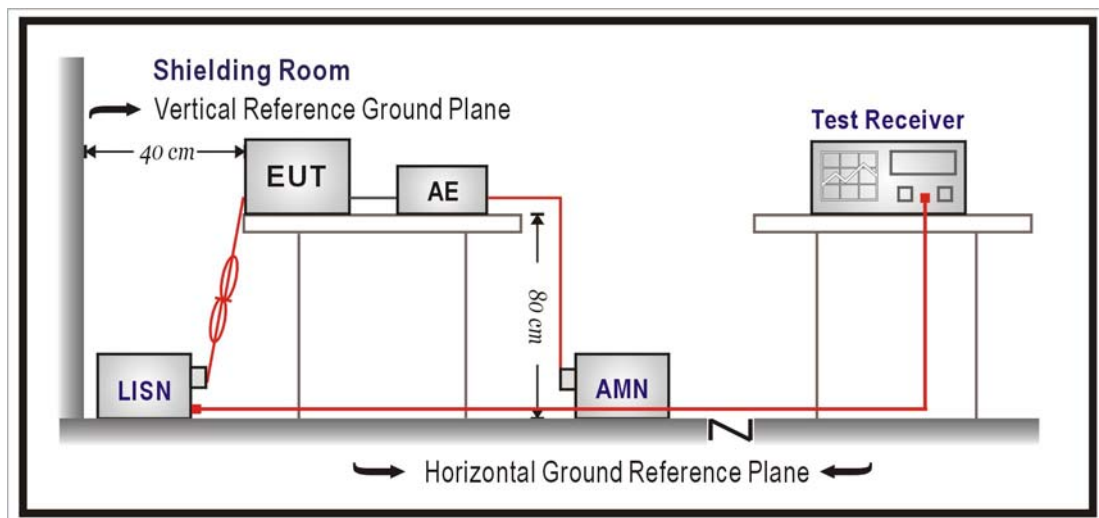
The following test equipments are used during the test:

Conducted Emission / SR3

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
LISN	R&S	ENV216	100096	2013/08/12
LISN	R&S	ESH3-Z5	836679/022	2013/02/06
Test Receiver	R&S	ESCS 30	825442/017	2013/01/01

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

**2.2. Test Setup**



**2.3. Limits**

<b>FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)</b>		
Frequency MHz	QP	AV
0.15 - 0.50	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

**2.4. Test Procedure**

The EUT was setup according to ANSI C63.4: 2009 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs.) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

**2.5. Test Specification**

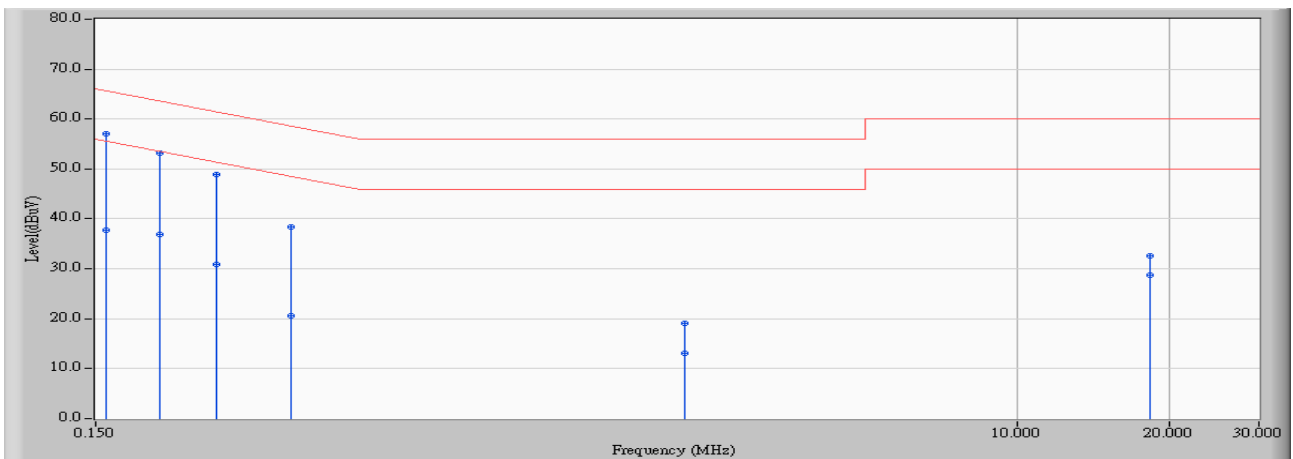
According to FCC Part 15 Subpart C Paragraph 15.207: 2011

**2.6. Uncertainty**

The measurement uncertainty is defined as  $\pm 2.26$  dB.

2.7. Test Result

Site : SR3	Time : 2012/09/06 - 14:39
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-1_0907 - Line1	Power : AC 120V / 60Hz
EUT : PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender	Note : Mode 1: Transmit _802.11n(40MHz)

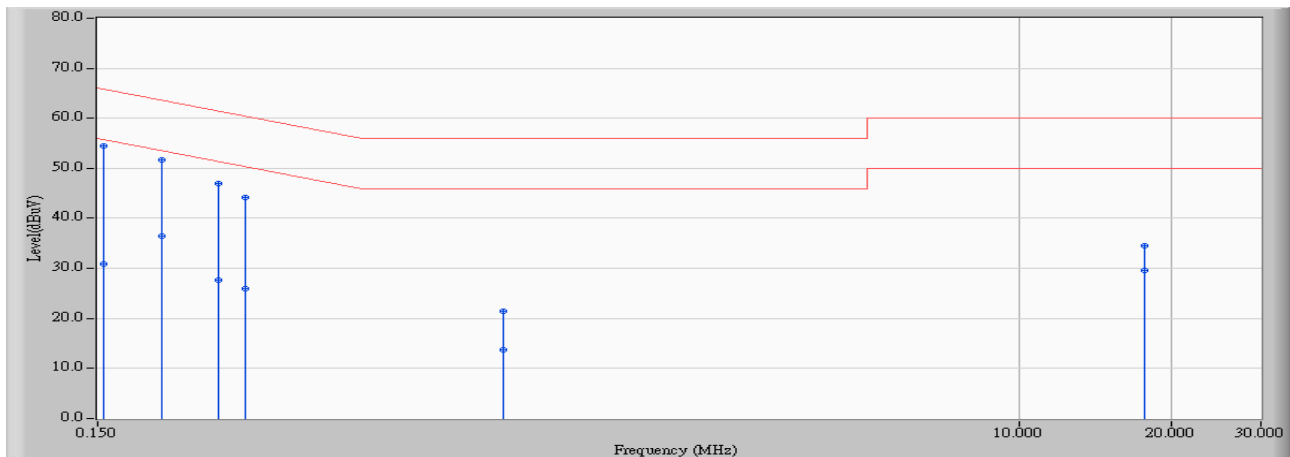


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.158	9.655	47.330	56.985	-8.593	65.578	QUASPEAK
2		0.158	9.655	28.070	37.725	-17.853	55.578	AVERAGE
3		0.201	9.658	43.490	53.148	-10.430	63.578	QUASPEAK
4		0.201	9.658	27.140	36.798	-16.780	53.578	AVERAGE
5		0.259	9.665	39.280	48.945	-12.506	61.451	QUASPEAK
6		0.259	9.665	21.180	30.845	-20.606	51.451	AVERAGE
7		0.365	9.681	28.670	38.351	-20.267	58.617	QUASPEAK
8		0.365	9.681	10.860	20.541	-28.077	48.617	AVERAGE
9		2.193	9.938	9.150	19.088	-36.912	56.000	QUASPEAK
10		2.193	9.938	3.160	13.098	-32.902	46.000	AVERAGE
11		18.302	10.286	22.360	32.646	-27.354	60.000	QUASPEAK
12		18.302	10.286	18.530	28.816	-21.184	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR3	Time : 2012/09/06 - 14:42
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-1_0907 - Line2	Power : AC 120V / 60Hz
EUT : PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender	Note : Mode 1: Transmit _802.11n(40MHz)



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.154	9.665	44.720	54.385	-11.402	65.786	QUASPEAK
2		0.154	9.665	21.230	30.895	-24.892	55.786	AVERAGE
3		0.201	9.668	41.950	51.618	-11.960	63.578	QUASPEAK
4		0.201	9.668	26.830	36.498	-17.080	53.578	AVERAGE
5		0.259	9.675	37.260	46.935	-14.516	61.451	QUASPEAK
6		0.259	9.675	17.970	27.645	-23.806	51.451	AVERAGE
7		0.295	9.680	34.530	44.210	-16.185	60.396	QUASPEAK
8		0.295	9.680	16.280	25.960	-24.435	50.396	AVERAGE
9		0.951	9.773	11.760	21.533	-34.467	56.000	QUASPEAK
10		0.951	9.773	4.000	13.773	-32.227	46.000	AVERAGE
11		17.693	10.446	24.120	34.565	-25.435	60.000	QUASPEAK
12		17.693	10.446	19.150	29.595	-20.405	50.000	AVERAGE

**Note:**

1. All Reading Levels are Quasi-Peak and average value.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.



**3. Peak Power Output**

**3.1. Test Equipment**

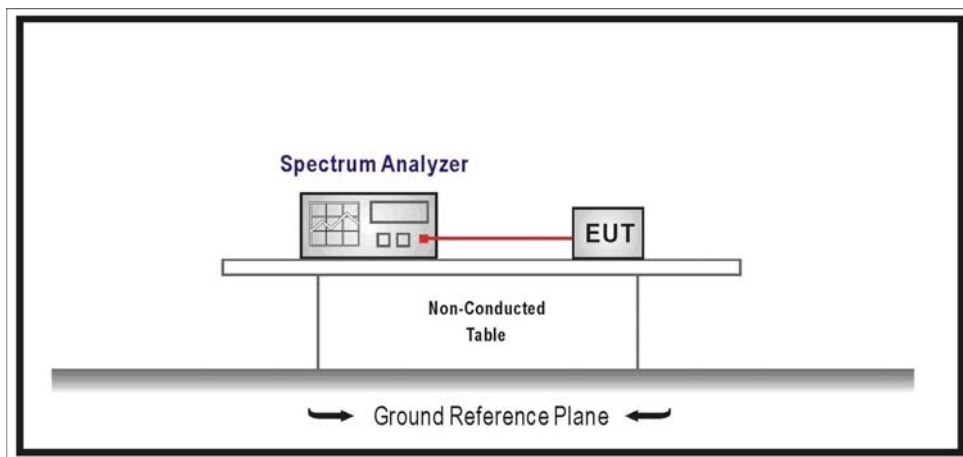
The following test equipments are used during the test:

Peak Power / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	R&S	FSP	100561	2013/02/19

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

**3.2. Test Setup**



**3.3. Test procedures**

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074, Section 5.2.1.2 Measurement Procedure PK2 for compliance to FCC 47CFR 15.247 requirements.

**3.4. Limits**

The maximum peak power shall be less 1 Watt.

**3.5. Test Specification**

According to FCC Part 15 Subpart C Paragraph 15.247: 2011

**3.6. Uncertainty**

The measurement uncertainty is defined as  $\pm 1.27$  dB.

3.7. Test Result

Product	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2012/08/30	Test Site	SR7

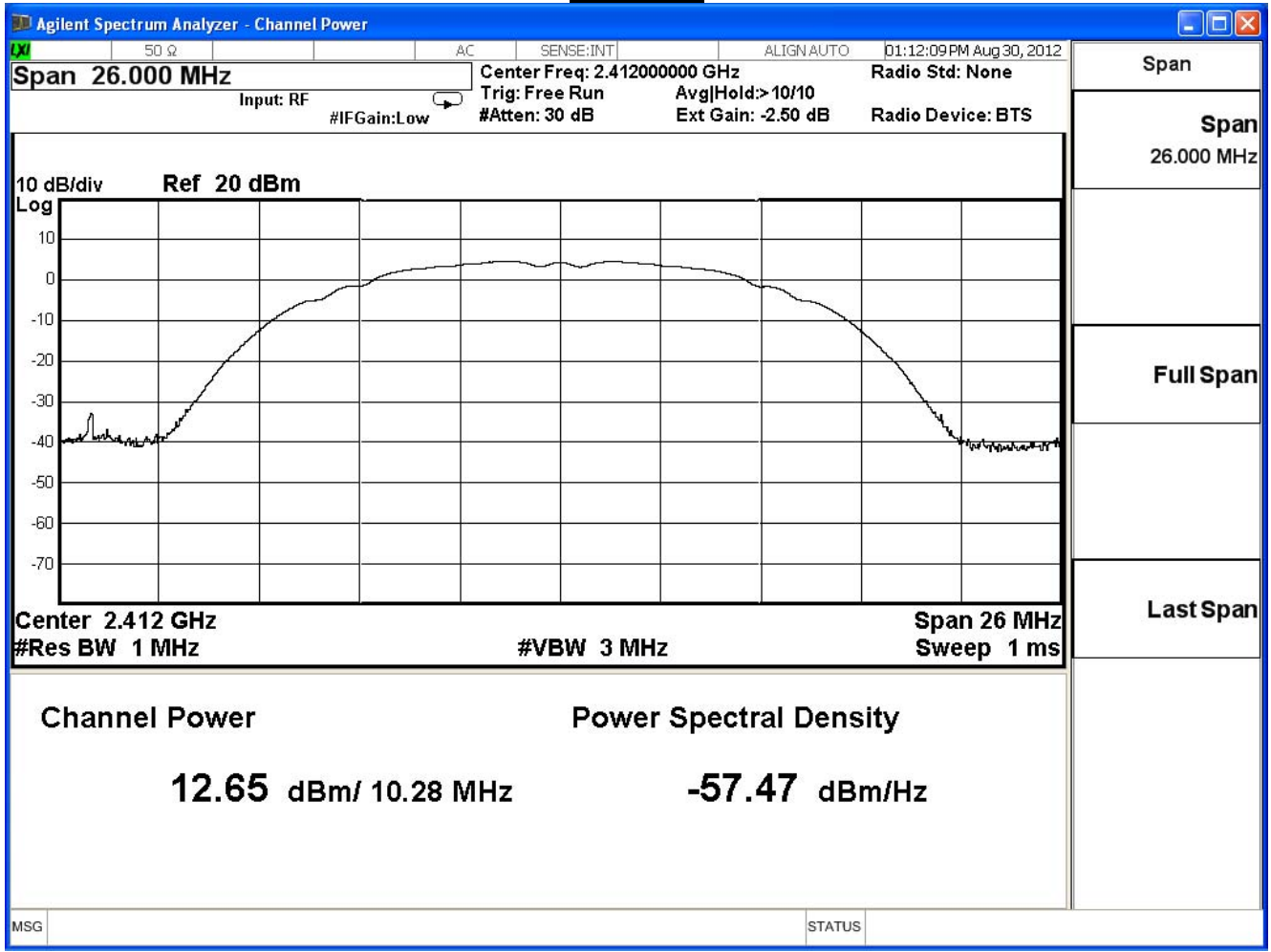
IEEE 802.11b				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	12.650	1Watt= 30 dBm	Pass
6	2437	12.570	1Watt= 30 dBm	Pass
11	2462	12.380	1Watt= 30 dBm	Pass

The worst emission of data rate is 1Mbps.

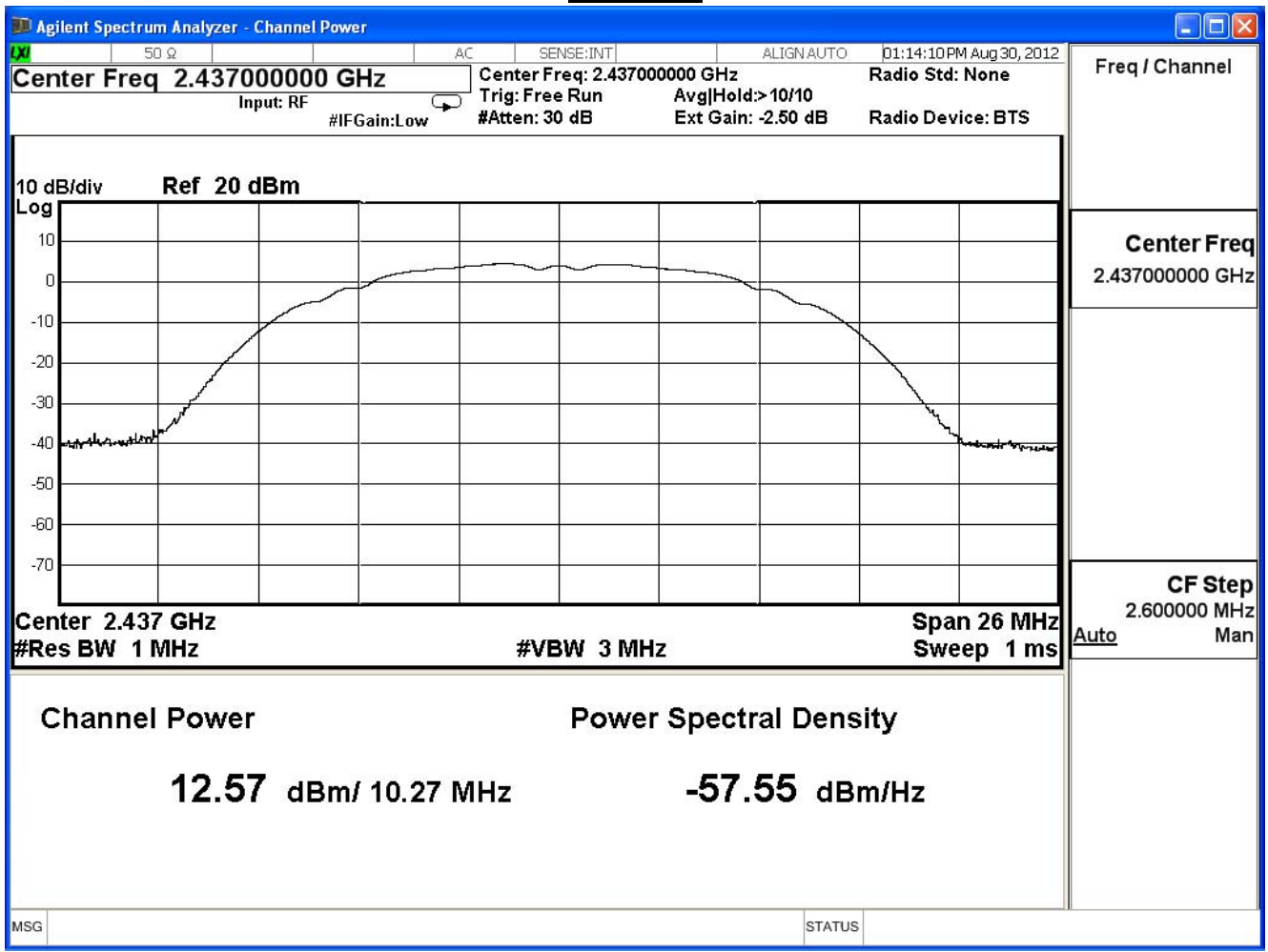
Peak Power Output Value (dBm)						
Channel No.	Frequency (MHz)	Data Rate				Required Limit
		1	2	5.5	11	
1	2412	12.650	--	--	-	30 dBm
6	2437	12.570	12.490	12.420	12.301	30 dBm
11	2462	12.380	--	--	-	30 dBm

Note: Measure Level =Reading value + cable loss

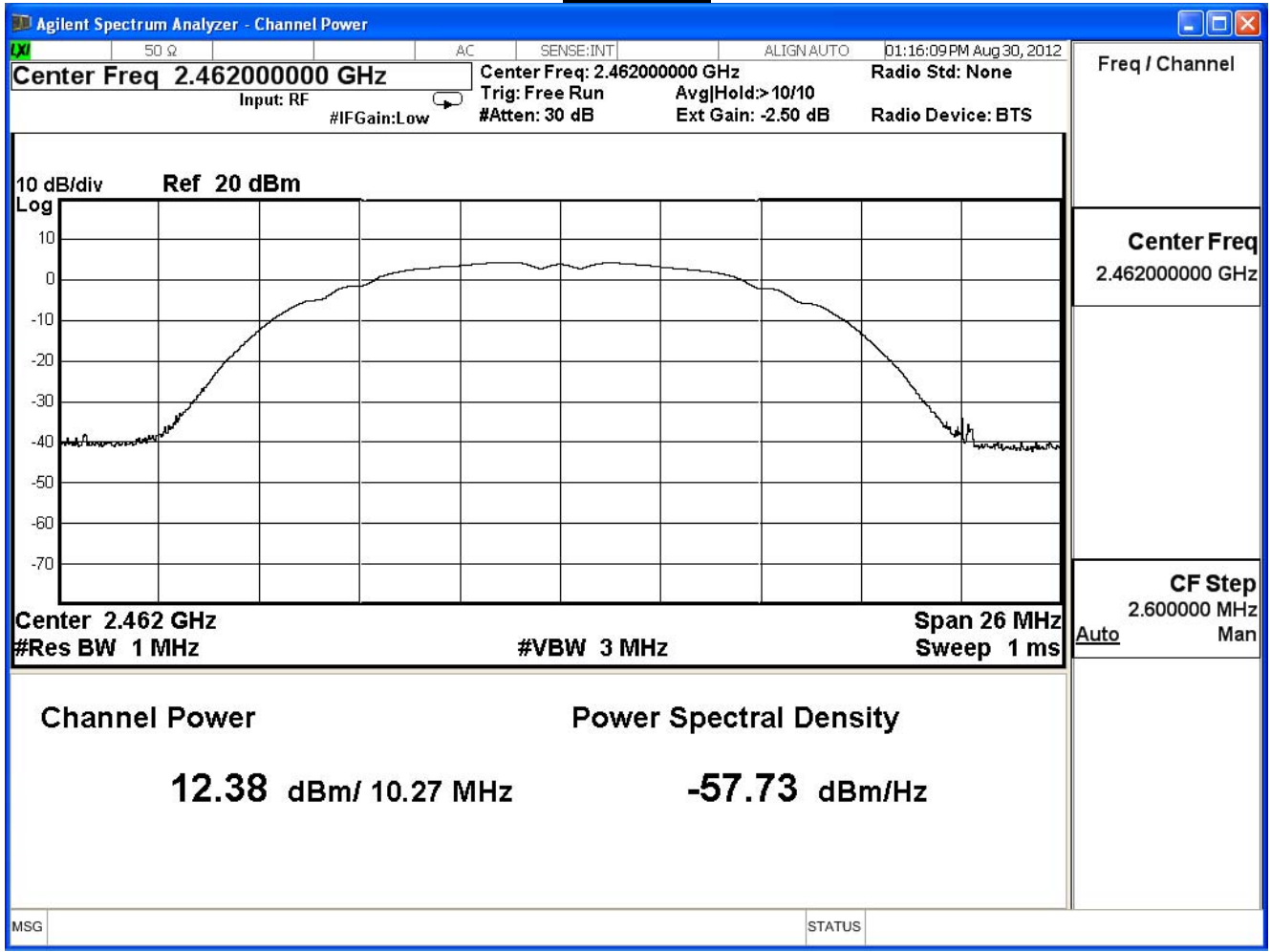
Channel 1



**Channel 6**



Channel 11



Product	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2012/08/30	Test Site	SR7

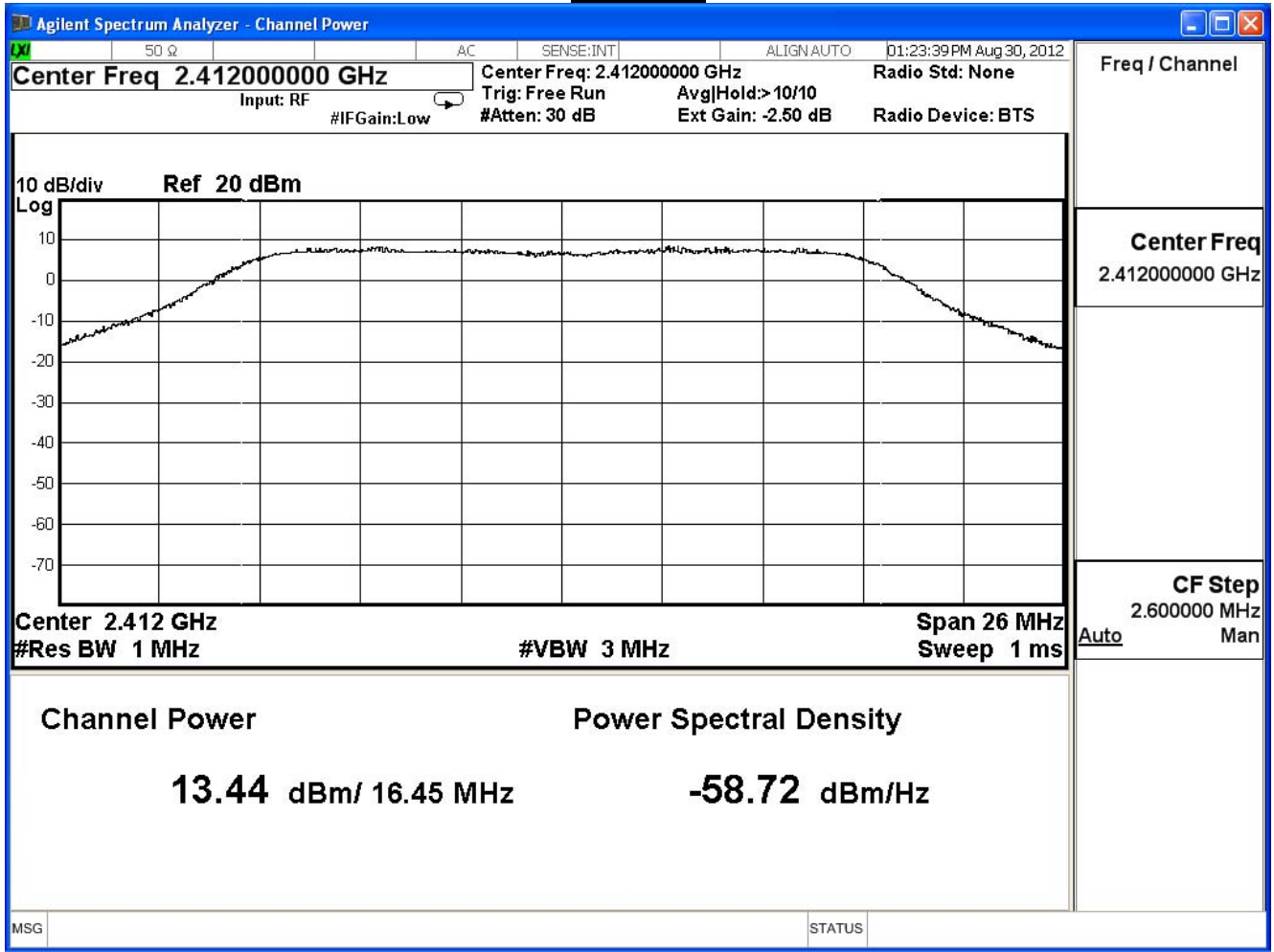
IEEE 802.11g				
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	13.440	1Watt= 30 dBm	Pass
6	2437	13.340	1Watt= 30 dBm	Pass
11	2462	13.030	1Watt= 30 dBm	Pass

The worst emission of data rate is 6Mbps.

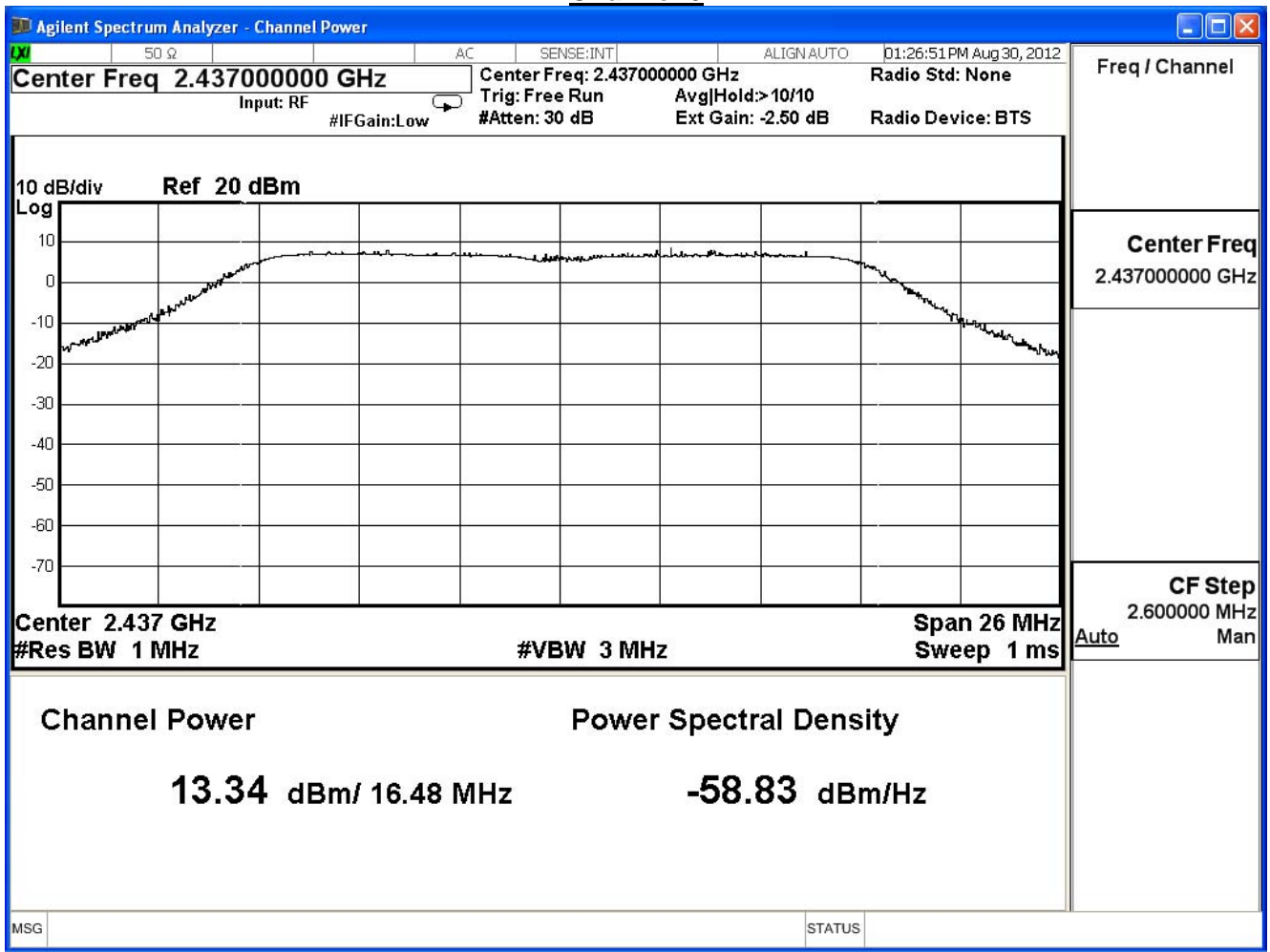
Peak Power Output Value(dBm)									
Channel No.	Frequency (MHz)	Data Rate (Mbps)							Required Limit
		6	12	18	24	36	48	54	
1	2412	13.440	--	--	-	--	--	-	30 dBm
6	2437	13.340	13.290	13.240	13.190	13.110	13.060	13.010	30 dBm
11	2462	13.030	--	--	-	--	--	-	30 dBm

Note: Measure Level =Reading value + cable loss

Channel 1

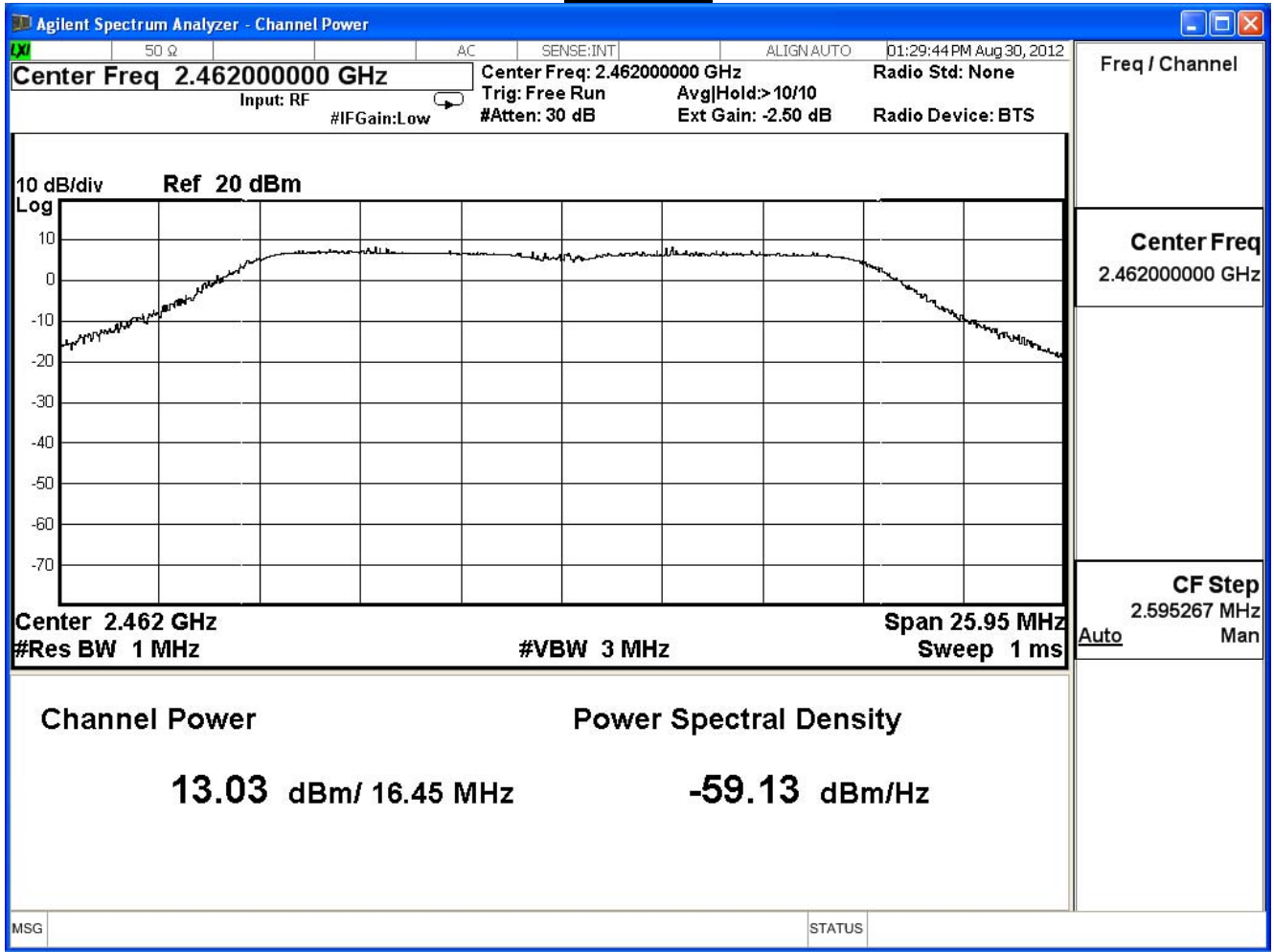


Channel 6





Channel 11



Product	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2012/08/30	Test Site	SR7

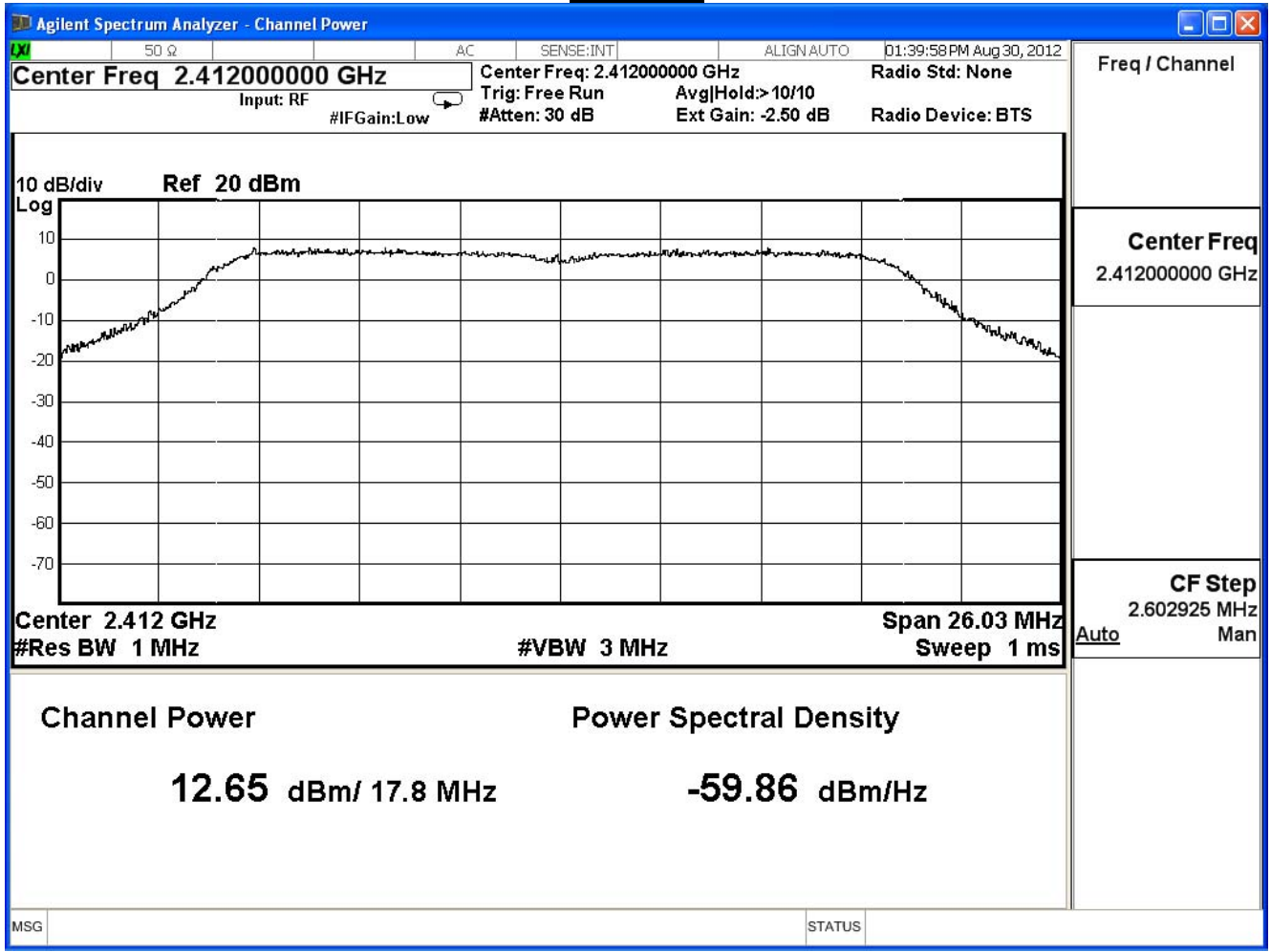
IEEE 802.11n 20MHz (ANT 0)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	12.650	1Watt= 30 dBm	Pass
6	2437	11.970	1Watt= 30 dBm	Pass
11	2462	12.820	1Watt= 30 dBm	Pass

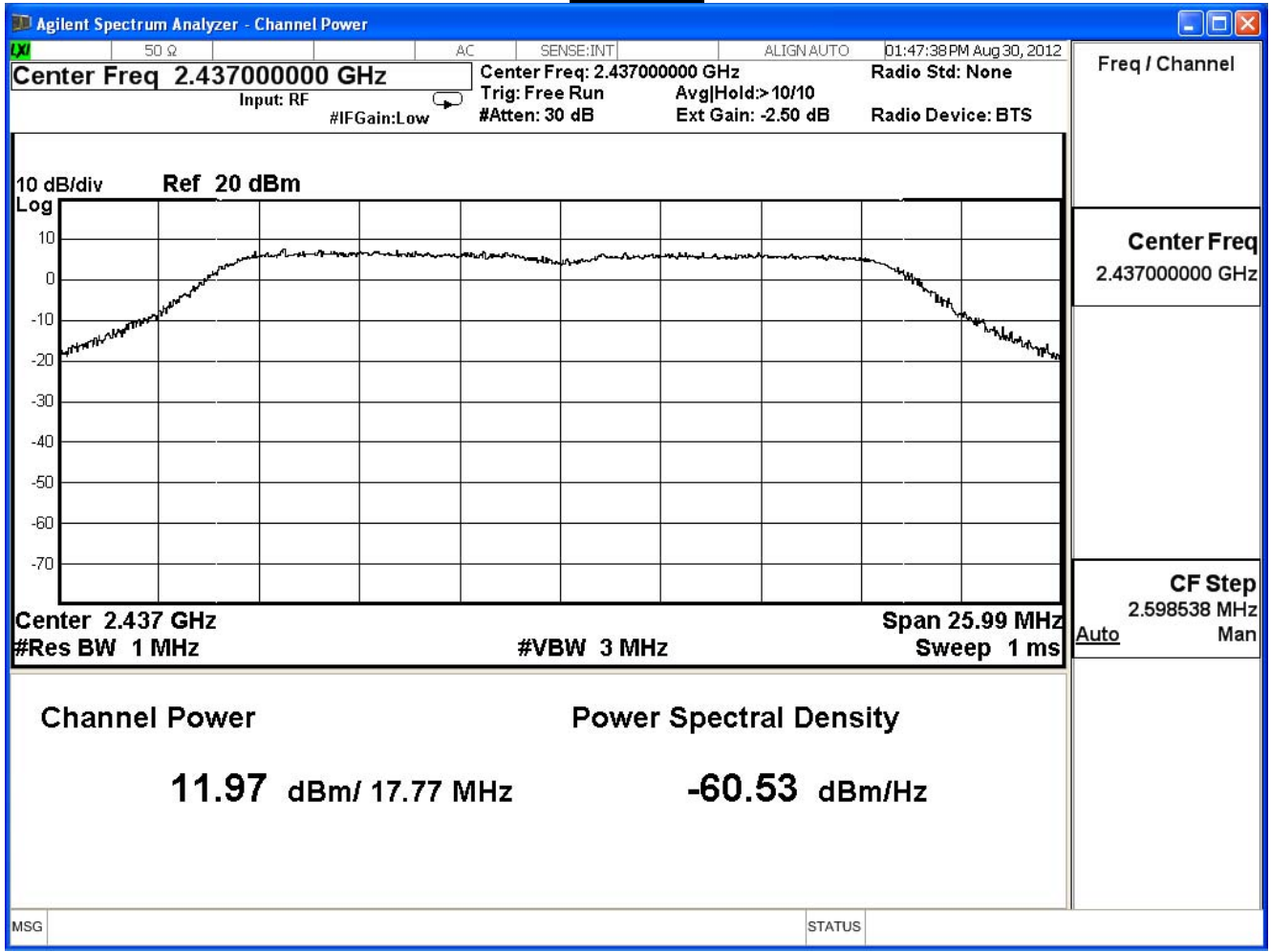
The worst emission of data rate is 13 Mbps.

Peak Power Output (dBm)										
MCS Index		8	9	10	11	12	13	14	15	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		13	26	39	52	78	104	117	130	
1	2412	12.650	--	--	-	--	--	-	--	30dBm
6	2437	11.970	11.920	11.850	11.740	11.650	11.570	11.440	11.370	30dBm
11	2462	12.820	--	--	-	--	--	-	--	30dBm

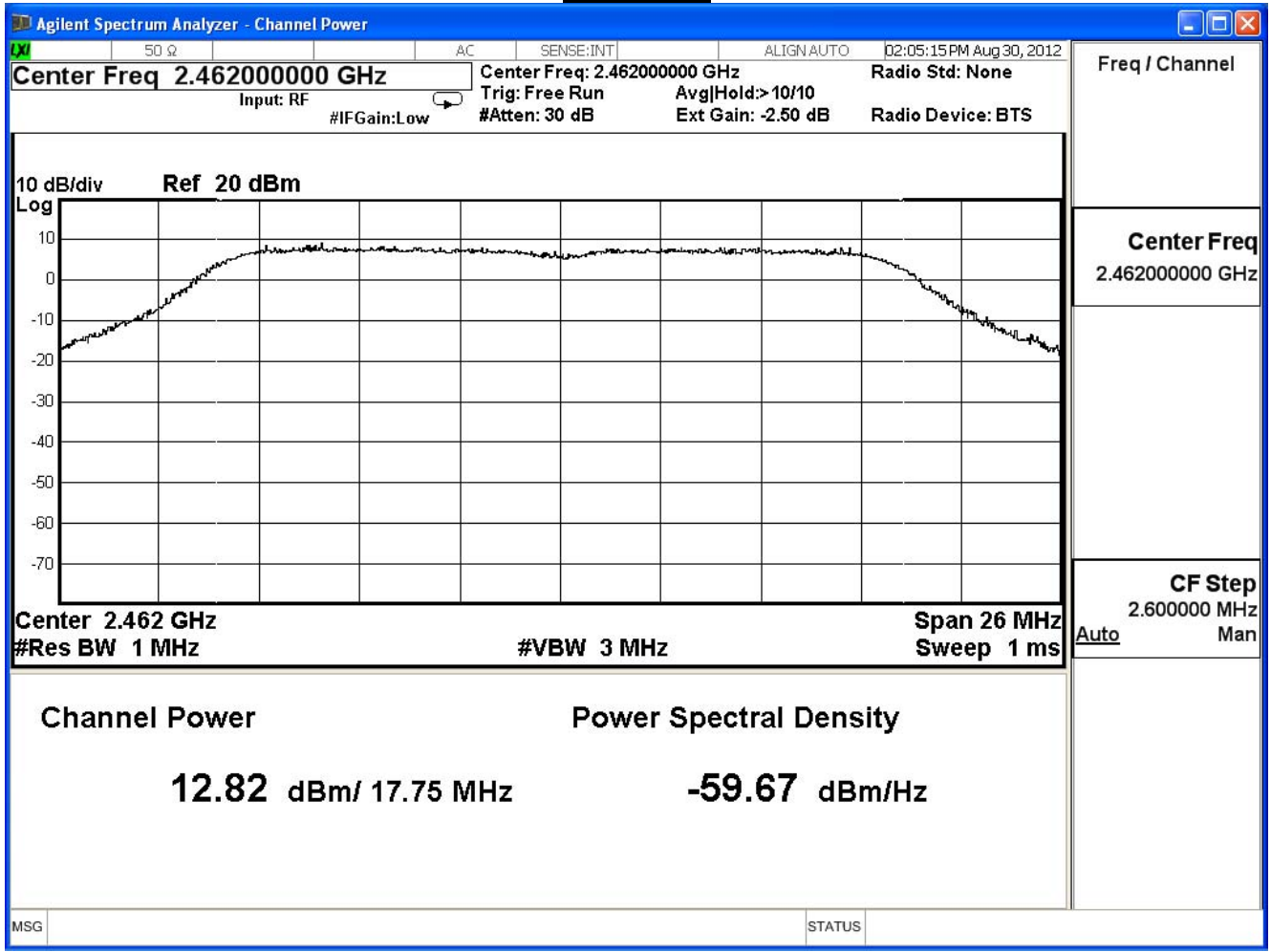
Channel 1



Channel 6



Channel 11



Product	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2012/08/30	Test Site	SR7

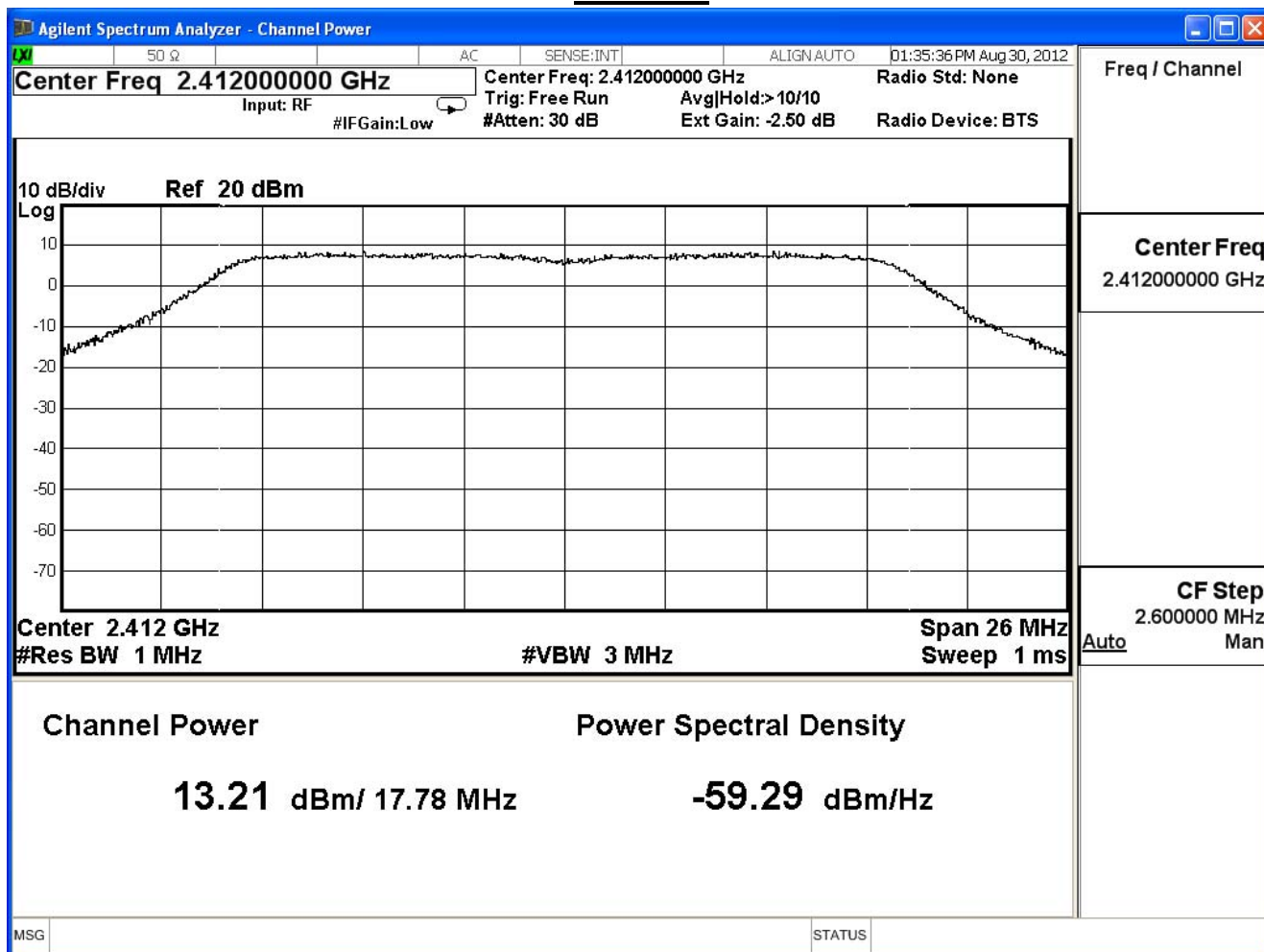
IEEE 802.11n 20MHz (ANT 1)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	13.210	1Watt= 30 dBm	Pass
6	2437	12.870	1Watt= 30 dBm	Pass
11	2462	12.780	1Watt= 30 dBm	Pass

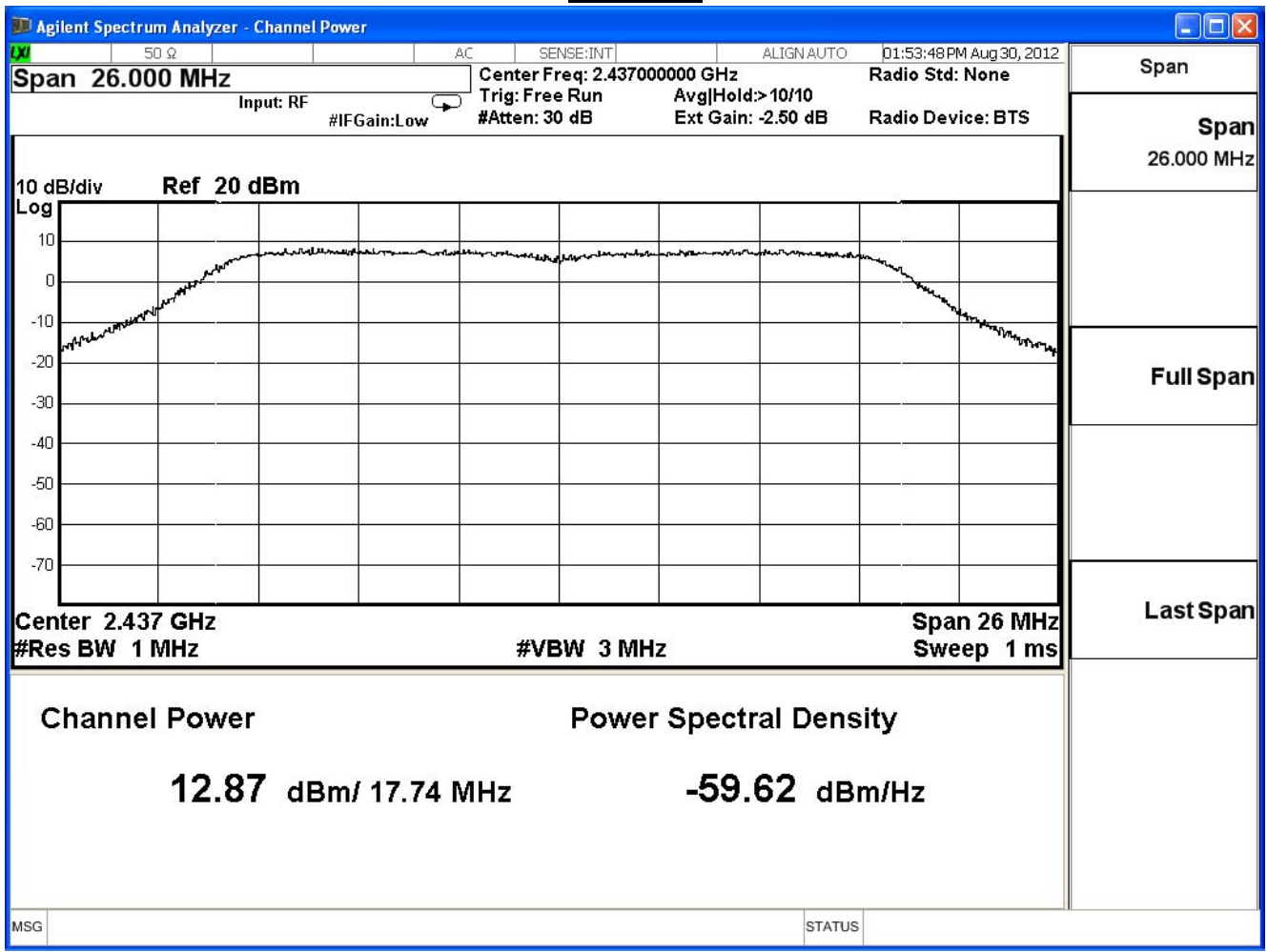
The worst emission of data rate is 13 Mbps.

Peak Power Output (dBm)										
MCS Index		8	9	10	11	12	13	14	15	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		13	26	39	52	78	104	117	130	
1	2412	13.210	--	--	-	--	--	-	--	30dBm
6	2437	12.870	12.810	12.740	12.650	12.570	12.490	12.410	12.360	30dBm
11	2462	12.780	--	--	-	--	--	-	--	30dBm

## Channel 1

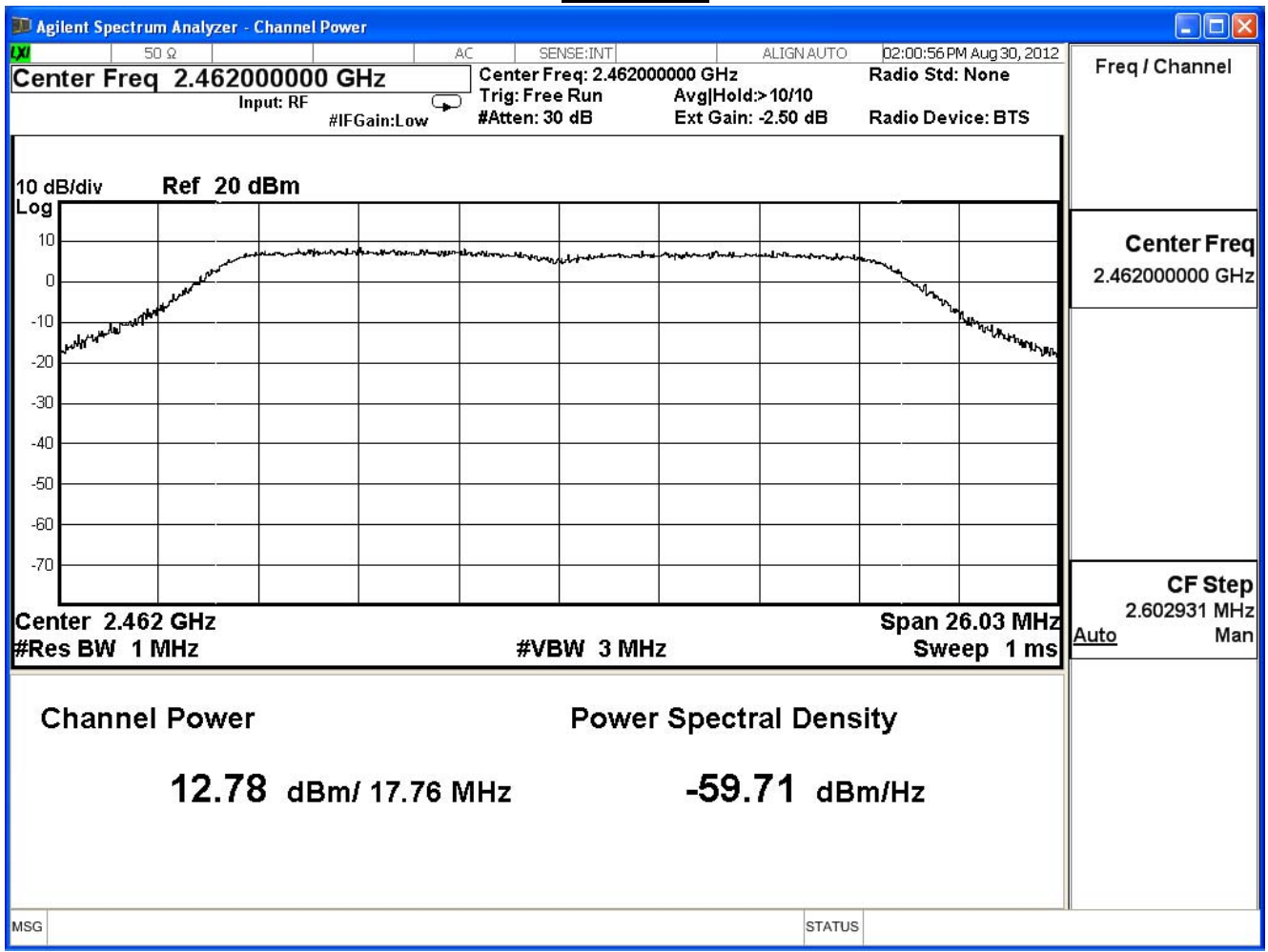


**Channel 6**





Channel 11



Product	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2012/08/30	Test Site	SR7

IEEE 802.11n 20MHz (ANT 0+1)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	15.950	1Watt= 30 dBm	Pass
6	2437	15.450	1Watt= 30 dBm	Pass
11	2462	15.810	1Watt= 30 dBm	Pass

Product	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2012/08/30	Test Site	SR7

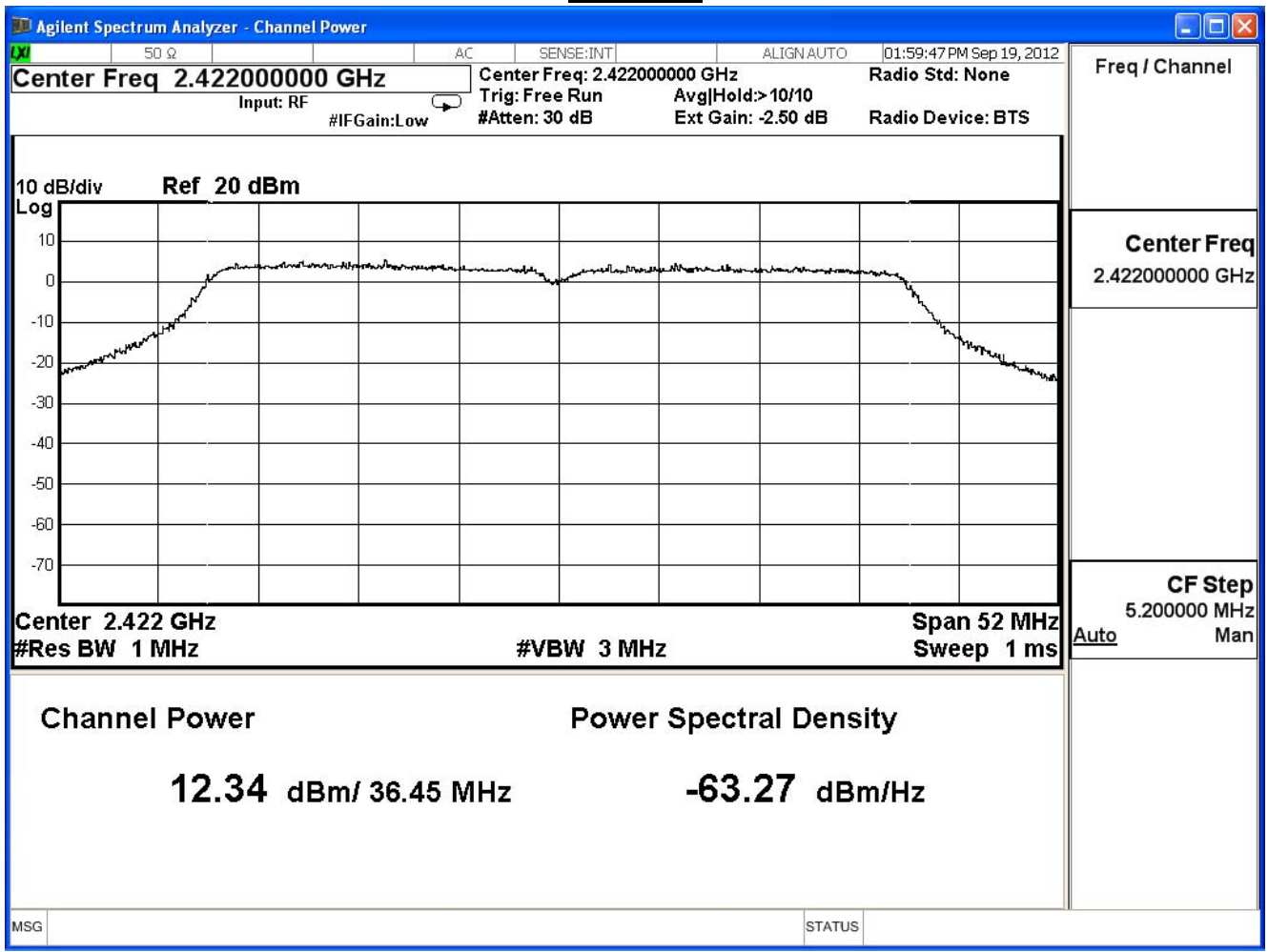
IEEE802.11n 40MHz (ANT 0)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
3	2422	12.340	1Watt= 30 dBm	Pass
6	2437	12.320	1Watt= 30 dBm	Pass
9	2452	12.380	1Watt= 30 dBm	Pass

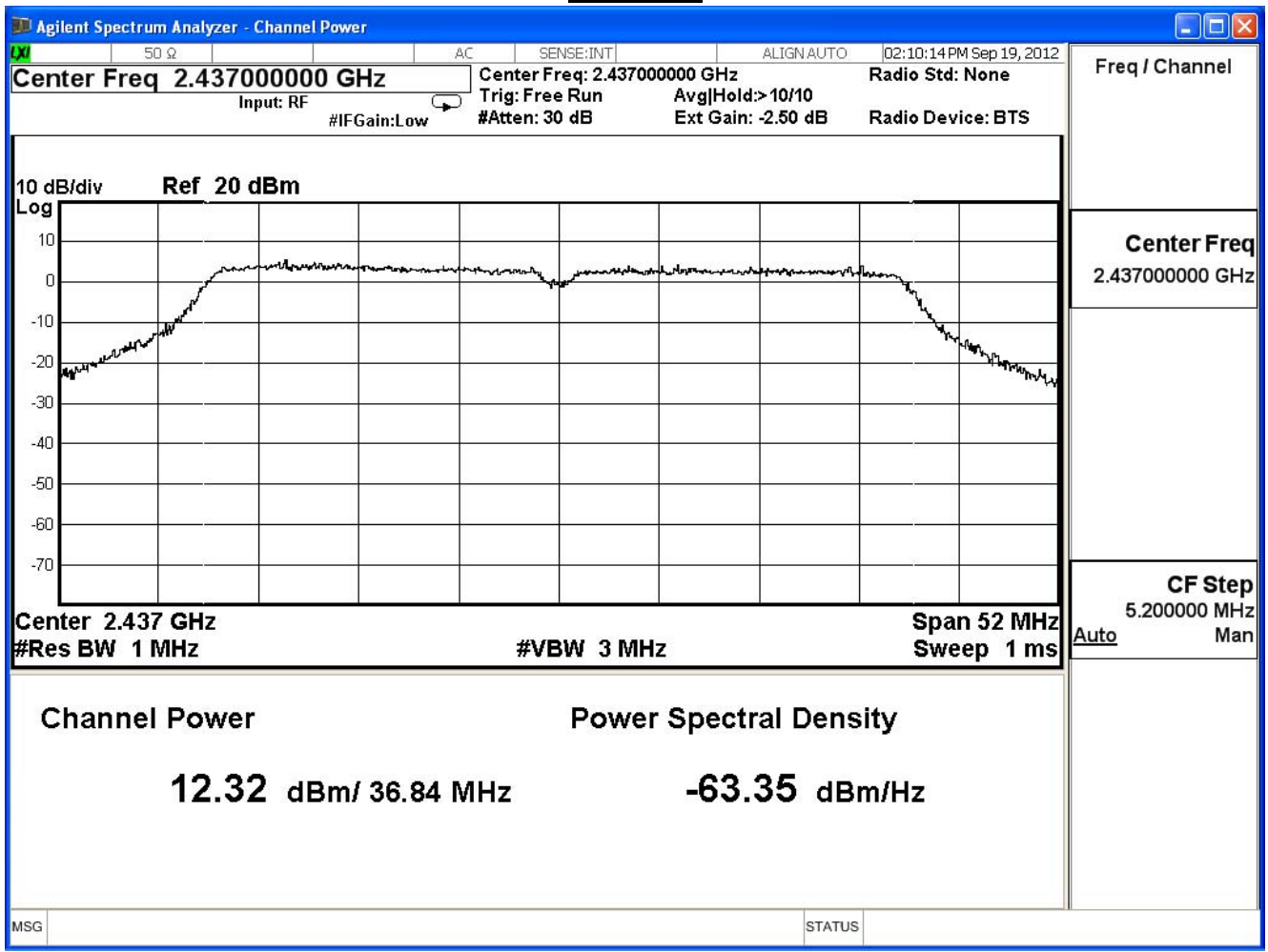
The worst emission of data rate is 27Mbps

Peak Power Output (dBm)										
MCS Index		8	9	10	11	12	13	14	15	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		27	54	81	108	162	216	243	270	
3	2422	12.340	--	--	-	--	--	-	--	30dBm
6	2437	12.320	12.240	12.150	12.030	11.970	11.900	11.820	11.750	30dBm
9	2452	12.380	--	--	-	--	--	-	--	30dBm

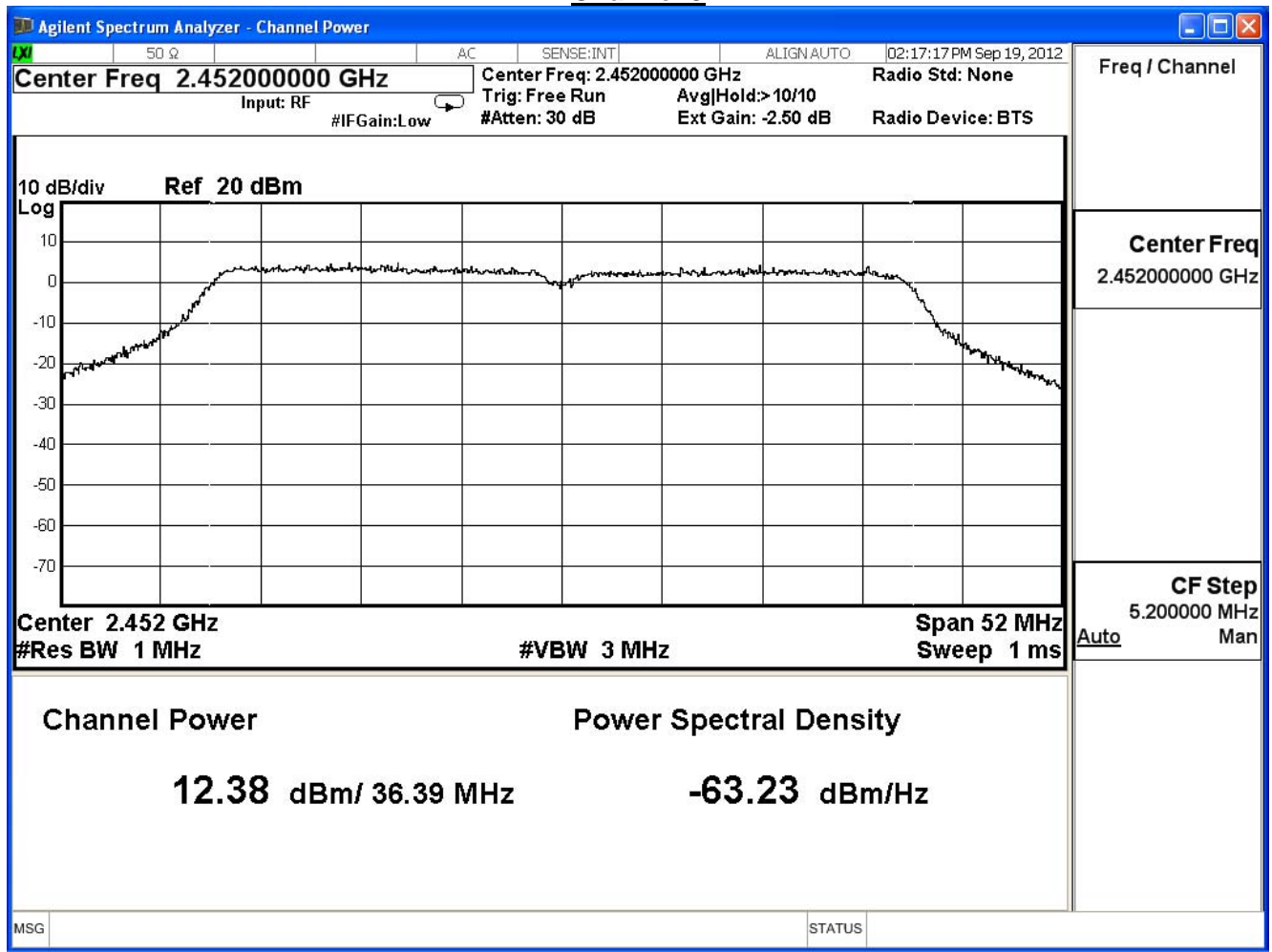
**Channel 3**



**Channel 6**



## Channel 9



Product	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2012/08/30	Test Site	SR7

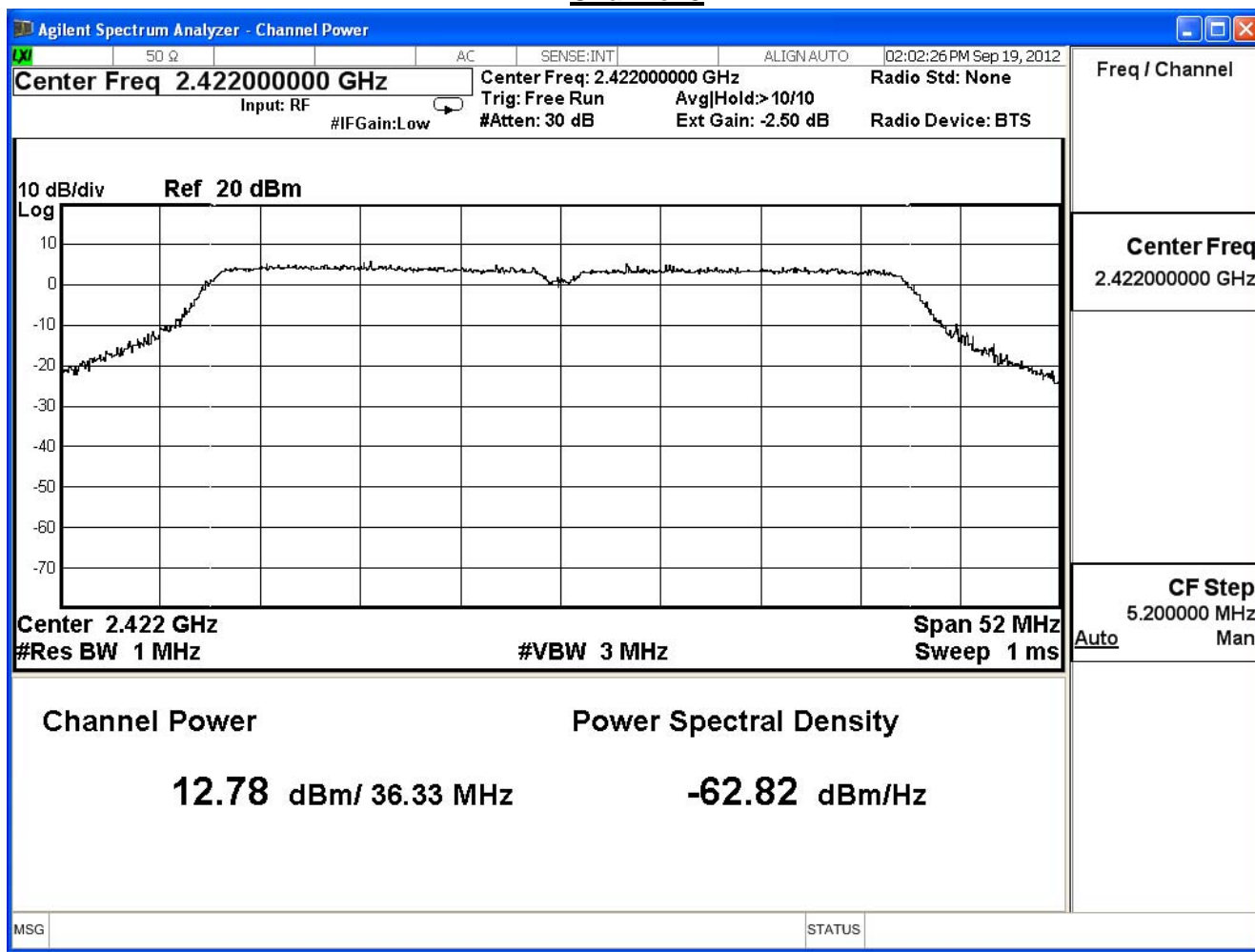
IEEE802.11n 40MHz (ANT 1)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
3	2422	12.780	1Watt= 30 dBm	Pass
6	2437	12.670	1Watt= 30 dBm	Pass
9	2452	12.170	1Watt= 30 dBm	Pass

The worst emission of data rate is 27Mbps

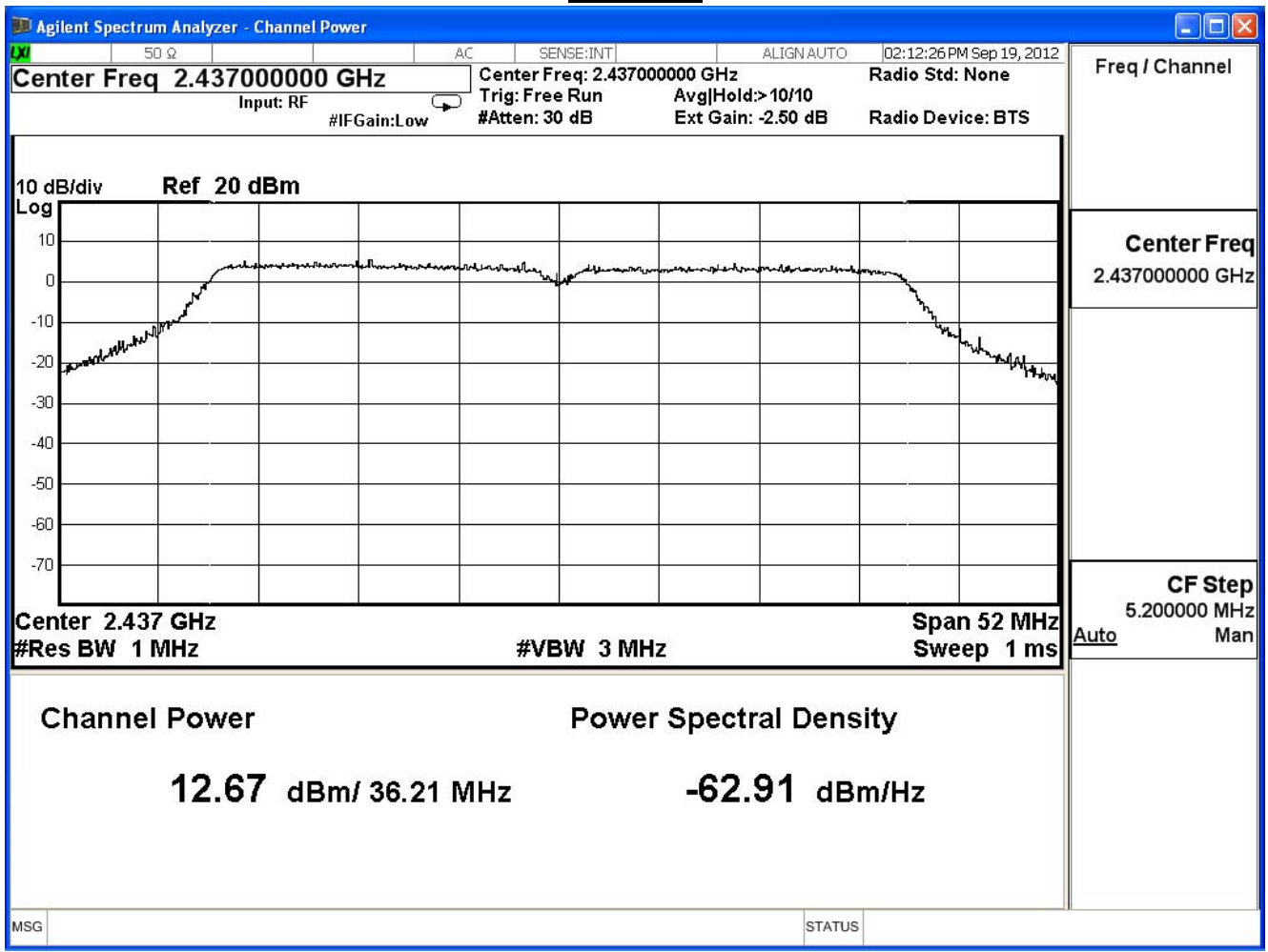
Peak Power Output (dBm)										
MCS Index		8	9	10	11	12	13	14	15	Required Limit
Channel No	Frequency (MHz)	Data Rate								
		27	54	81	108	162	216	243	270	
3	2422	12.780	--	--	-	--	--	-	--	30dBm
6	2437	12.670	12.590	12.500	12.430	12.310	12.220	12.140	12.030	30dBm
9	2452	12.170	--	--	-	--	--	-	--	30dBm

## Channel 3

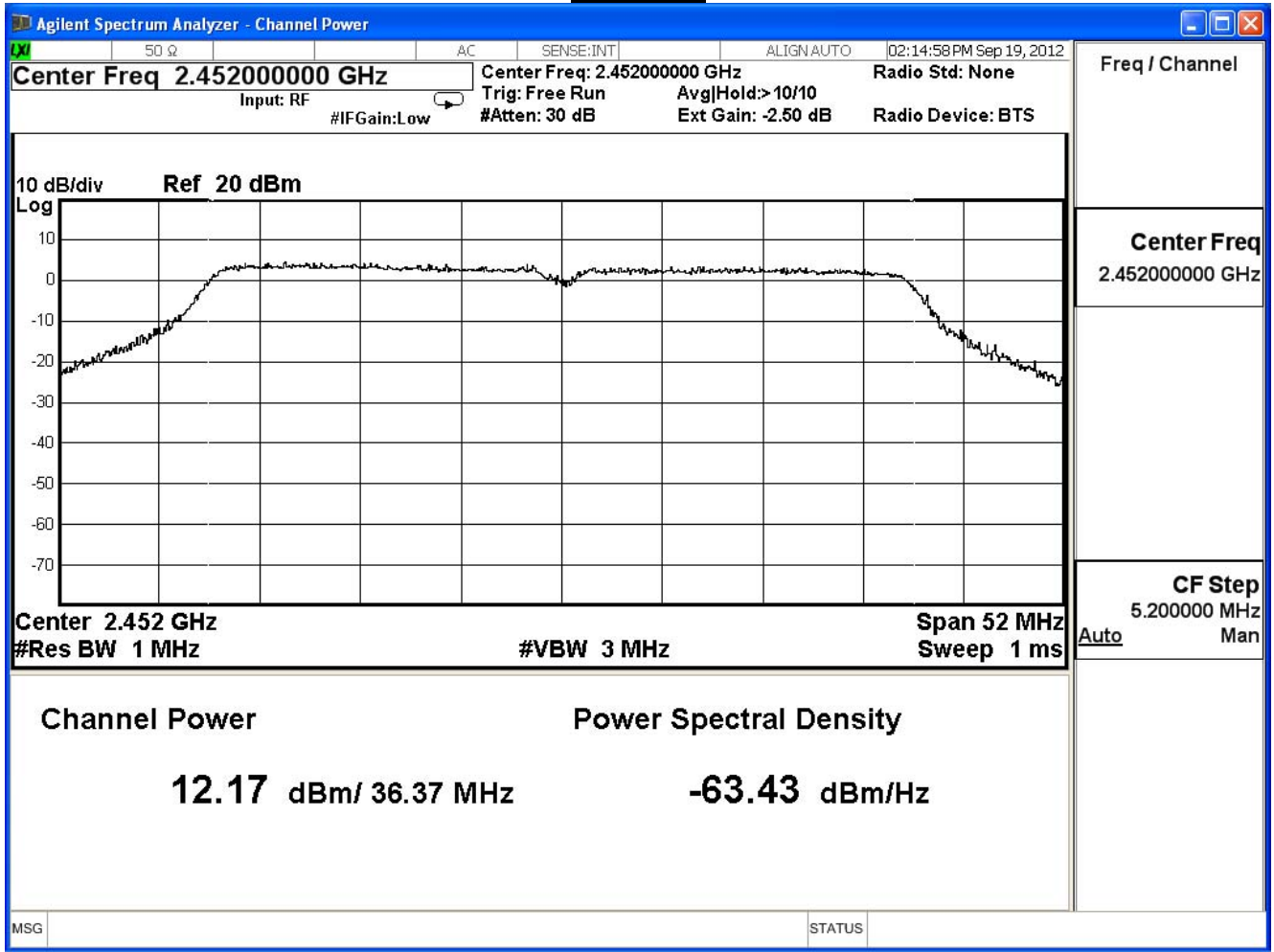




**Channel 6**



Channel 9



Product	PowerLine AV 500 Wireless N Mini Extender/ PowerLine AV+ Wireless N Mini Extender		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit		
Date of Test	2012/08/30	Test Site	SR7

IEEE802.11n 40MHz (ANT 0+1)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
3	2422	15.580	1Watt= 30 dBm	Pass
6	2437	15.510	1Watt= 30 dBm	Pass
9	2452	15.290	1Watt= 30 dBm	Pass