FCC Test Report

Product Name ： Dual-band Wireless-AC1200 Range Extender

Trade Name ： ASUS

Model No. ： RP-AC56, RP-AC1200

FCC ID. ： MSQ-RPAC56

Applicant ： ASUSTeK COMPUTER INC.

Address ： 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan

Date of Receipt ： Jan. 30, 2016

Issued Date ： Apr. 07, 2016

Report No. ： 1620099R-RFUSP57V00-B

Report Version ： V1.0

Testing Laboratory
3024

Test Report Certification

Issued Date : Apr. 07, 2016
Report No. : 1620099R-RFUSP57V00-B

Product Name	:	Dual-band Wireless-AC1200 Range Extender
Applicant	:	ASUSTeK COMPUTER INC.
Address	:	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan
Manufacturer	:	ASUSTeK COMPUTER INC.
Model No.	:	RP-AC56, RP-AC1200
FCC ID.	:	MSQ-RPAC56
EUT Voltage	:	AC 100-240V, 50-60Hz
Testing Voltage	:	AC 120V/60Hz
Trade Name	:	ASUS
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2014 ANSI C63.10: 2009
Test Lab	:	QuieTek Hsin Chu Laboratory
Test Result	:	Complied

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.

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

Tested By : (JuBo Shen / Senior Engineer)

Approved By : (Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1540255R-RFUSP28V00	V1.0	Initial issue of report	May 22, 2015
1540255R-RFUSP28V00	V2.0	Update external photo number (3) by customer’s requirement.	May 22, 2015
1540255R-RFUSP28V00	V3.0	Add one antenna (Walsin / RFDPA141006IMLB301)	May 22, 2015
1620099R-RFUSP57V00-B	V1.0	Update WLAN 5G band 4 standard to FCC 15.407.	Apr. 07, 2016

Laboratory Information

We, **QuieTek Corporation**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	**:**	**TAF, Accreditation Number: 3024**
USA	**:**	**FCC, Registration Number: 365520**
Canada	**:**	**IC, Submission No: 181665 / IC Registration Number: 4075C-4**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site:http://www.quietek.com/english/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory:
No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

LinKou Testing Laboratory:
No.5-22, Ruishukeng, Linkou Dist., New Taipei City 24451, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

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1. General Information

1.1. EUT Description

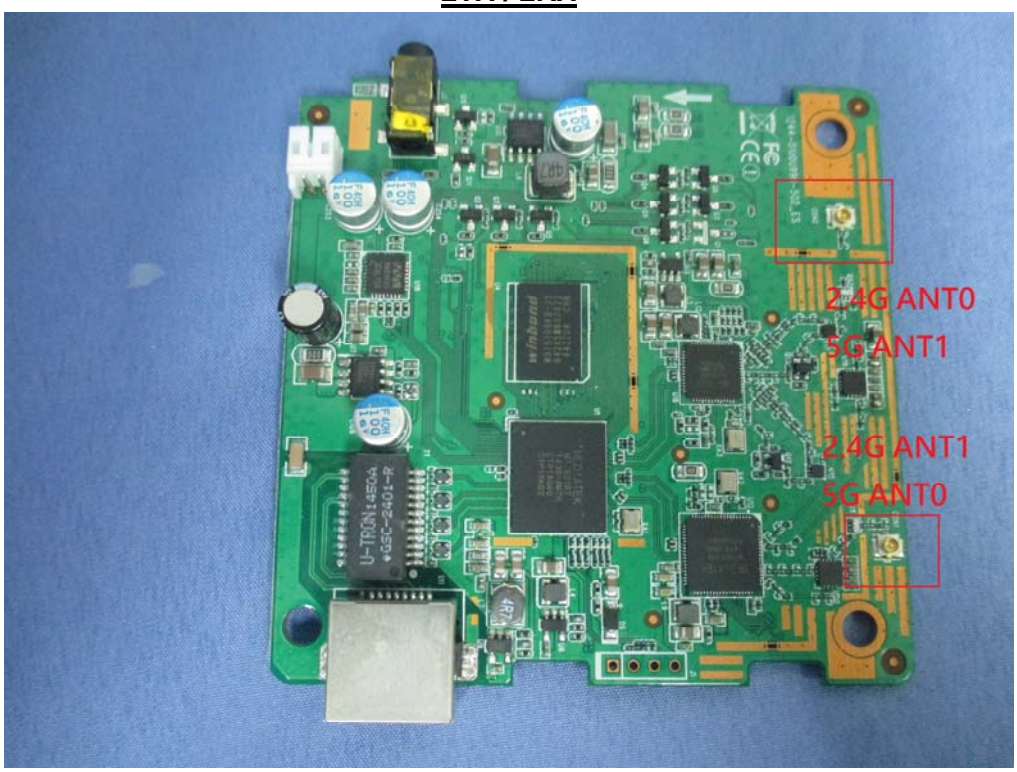
Product Name	Dual-band Wireless-AC1200 Range Extender	
Trade Name	ASUS	
Model No.	RP-AC56, RP-AC1200	
Frequency Range/ Channel Number	IEEE 802.11a/ IEEE 802.11n (20MHz)	5745~5825MHz / 5 Channels
	IEEE 802.11n (40MHz)	5755~5795MHz / 2 Channels
	IEEE 802.11ac (80MHz)	5775~5775MHz / 1 Channel
Type of Modulation	IEEE 802.11a/n/ac	Orthogonal Frequency Division Multiplexing
Data Speed	IEEE 802.11a	6Mbps,9Mbps,12Mbps,18Mbps,24Mbps,36Mbps,48Mbps,54Mbps
	IEEE 802.11n	Support a subset of the combination of GI, MCS 0~MCS 15 and bandwidth defined in 802.11n
	IEEE 802.11ac	Support a subset of the combination of GI, MCS 0~MCS 9 and bandwidth defined in 802.11ac

Antenna Information	
Vender/Model	Walsin / RFDPA101306IMLB301 Walsin / RFDPA141006IMLB301
Antenna Type	Dipole Antenna
Antenna Gain	5G Band1: Ant0:4dBi, Ant1:4dBi 5G Band4: Ant0:4dBi, Ant1:4dBi

ANT-TX / RX & Bandwidth

ANT-TX / RX	TX			RX		
Mode/ Channel Bandwidth	20MHz	40MHz	80MHz	20MHz	40MHz	80MHz
IEEE802.11a	✓			✓		
IEEE802.11n	✓	✓		✓	✓	
IEEE802.11ac	✓	✓	✓	✓	✓	✓

2TX / 2RX



IEEE 802.11n

MCS Index	Modulation	R	N_{BPSCS}	N_{CBPS}		N_{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								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_{BPSCS}	N_{CBPS}		N_{DBPS}		Data Rate(Mb/s)			
				20MHz	40MHz	20MHz	40MHz	800ns GI		400ns GI	
								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 802.11ac Data Rate

Spatial Streams (Note1)	MCS Index	Modulation type	Coding rate	Data Rate(Mb/s)							
				20 MHz		40 MHz		80 MHz		160 MHz	
				Guard Interval		Guard Interval		Guard Interval		Guard Interval	
				800ns	400ns	800ns	400ns	800ns	400ns	800ns	400ns
1	0	BPSK	1/2	6.5	7.2	13.5	15	29.3	32.5	58.5	65
	1	QPSK	1/2	13	14.4	27	30	58.5	65	117	130
	2	QPSK	3/4	19.5	21.7	40.5	45	87.8	97.5	175.5	195
	3	16-QAM	1/2	26	28.9	54	60	117	130	234	260
	4	16-QAM	3/4	39	43.3	81	90	175.5	195	351	390
	5	64-QAM	2/3	52	57.8	108	120	234	260	468	520
	6	64-QAM	3/4	58.5	65	121.5	135	263.3	292.5	526.5	585
	7	64-QAM	5/6	65	72.2	135	150	292.5	325	585	650
	8	256-QAM	3/4	78	86.7	162	180	351	390	702	780
	9	256-QAM	5/6	N/A	N/A	180	200	390	433.3	780	866.7
2	0	BPSK	1/2	13	14.4	27	30	58.6	65	117	130
	1	QPSK	1/2	26	28.8	54	60	117	130	234	260
	2	QPSK	3/4	39	43.4	81	90	175.6	195	351	390
	3	16-QAM	1/2	52	57.8	108	120	234	260	468	520
	4	16-QAM	3/4	78	86.6	162	180	351	390	702	780
	5	64-QAM	2/3	104	115.6	216	240	468	520	936	1040
	6	64-QAM	3/4	117	130	243	270	526.6	585	1053	1170
	7	64-QAM	5/6	130	144.4	270	300	585	650	1170	1300
	8	256-QAM	3/4	156	173.4	324	360	702	780	1404	1560
	9	256-QAM	5/6	N/A	N/A	360	400	780	866.6	1560	1733.4

IEEE 802.11a & IEEE 802.11n (20MHz) & IEEE 802.11ac (20MHz)

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz
165	5825 MHz						

IEEE 802.11n (40MHz) & IEEE 802.11ac (40MHz)

Working Frequency of Each Channel			
Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

IEEE 802.11ac (80MHz)

Working Frequency of Each Channel	
Channel	Frequency
155	5775 MHz

Note:

1. This device is a Dual-band Wireless-AC1200 Range Extender including 2.4GHz b/g/n (2x2) and 5GHz a/n/ac (2x2) transmitting and receiving function.
2. The variation of model number is for different strategy of marketing.
3. These test results on a sample of the device are for the purpose of demonstrating Compliance with Part 15 Subpart E Paragraph 15.407.
4. 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.
5. The function of the 2.4GHz & 5.2GHz transmitting is measured and makes a test report of the report number: 1540255R-RFUSP28V00 & 1540255R-RFUSP56V00.
6. This device has USB and Ethernet ports, which can be connected to computer. It is a Class B personal computer and peripheral. Its test report number is 1540255R-RFUSP01V00.

1.2. 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	Modulation	Channel	Antenna	Result
Peak Power Spectrum Density	11a	149/ 157/ 165	0+1	Complies
	11n(20MHz)	149/ 157/ 165	0+1	Complies
	11n(40MHz)	151/ 159	0+1	Complies
	11ac(80MHz)	155	0+1	Complies
Frequency Stability	11a	149/ 157/ 165	0/1	Complies
	11n(20MHz)	149/ 157/ 165	0/1	Complies
	11n(40MHz)	151/ 159	0/1	Complies
	11ac(80MHz)	155	0/1	Complies

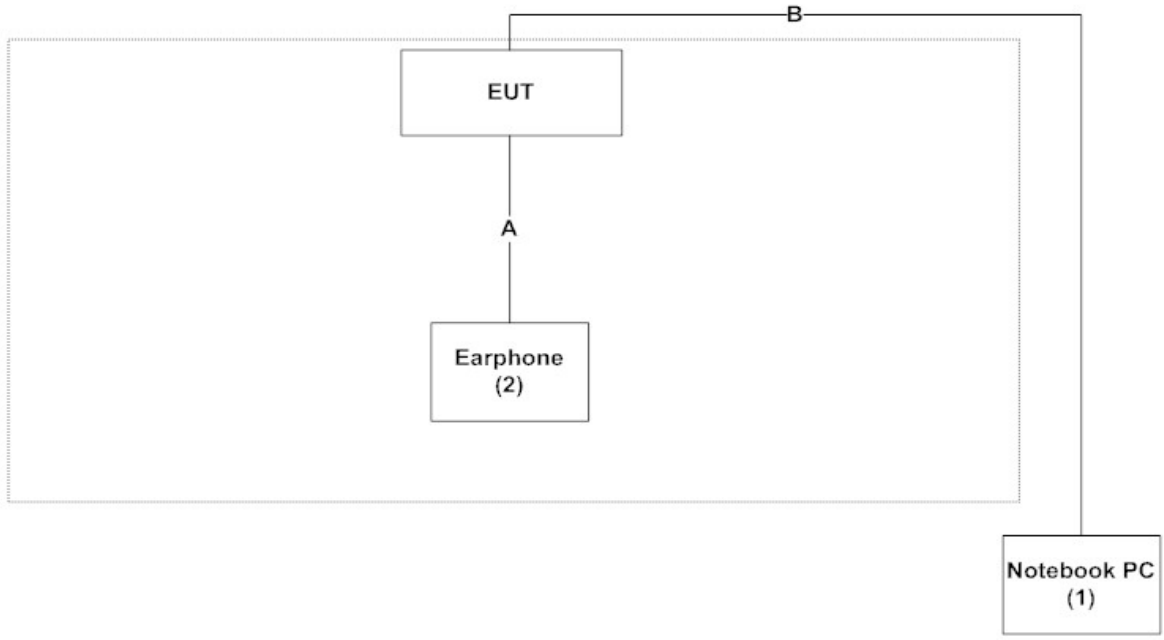
1.3. Tested System Details

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	Vostro3400	7F808N1	DoC	--
2	Earphone	Apple	N/A	N/A	DoC	--

1.4. Configuration of tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	Earphone Cable	Non-Shielded, 1m

1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Execute the QA Tool on the EUT.
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.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 E 15.407 Peak Power Spectrum Density	15 - 35	25°C
Humidity (%RH)		25 - 75	45%RH
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 E 15.407 Frequency Stability	15 - 35	25°C
Humidity (%RH)		25 - 75	45%RH
Barometric pressure (mbar)		860 - 1060	950-1000

2. Peak Power Spectrum Density

2.1. Test Equipment

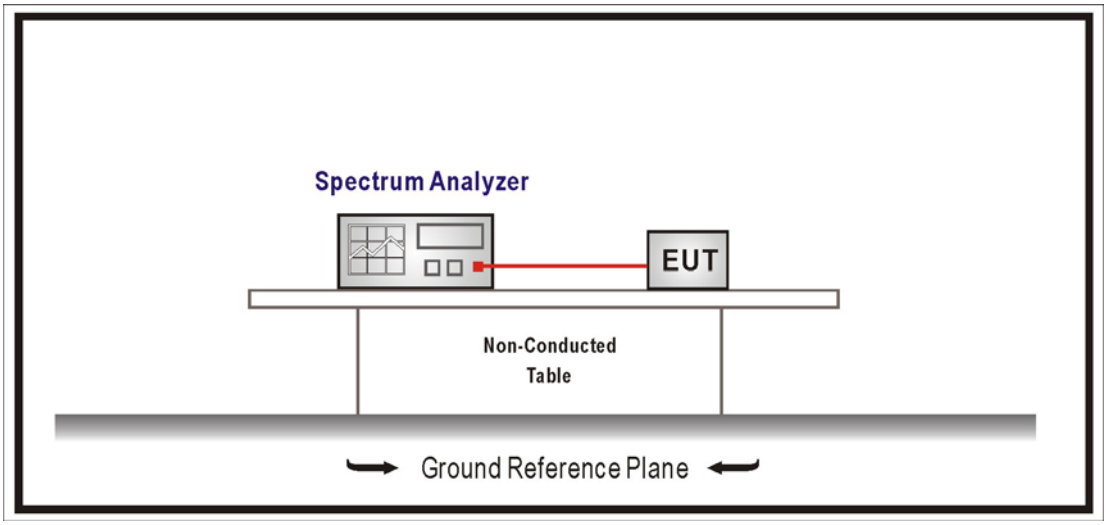
The following test equipments are used during the radiated emission tests:

Peak Power Spectrum Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2015/07/14

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

2.2. Test Setup



2.3. Limits

1. For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 17 dBm in any 1MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
2. For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi
3. For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
4. For the band 5.725-5.850 GHz, the peak power spectral density shall not exceed 30 dBm in any 500KHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi..

2.4. Test Procedure

The EUT was setup to ANSI C63.10:2009; tested to U-NII test procedure of KDB 789033 D02 for compliance to FCC 47CFR Subpart E requirements.

For Band1 : Set RBW=1MHz, VBW=3MHz with RMS detector. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging.

For Band4 : Set RBW=500KHz, VBW=1.5MHz with RMS detector. The PPSD is the highest level found across the emission in any 500KHz band after 100 sweeps of averaging.

2.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

2.6. Test Result

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE 802.11a (ANT 0)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
149	5745	-10.25	6.74	≦28.99
157	5785	-9.67	7.32	≦28.99
165	5825	-9.57	7.42	≦28.99

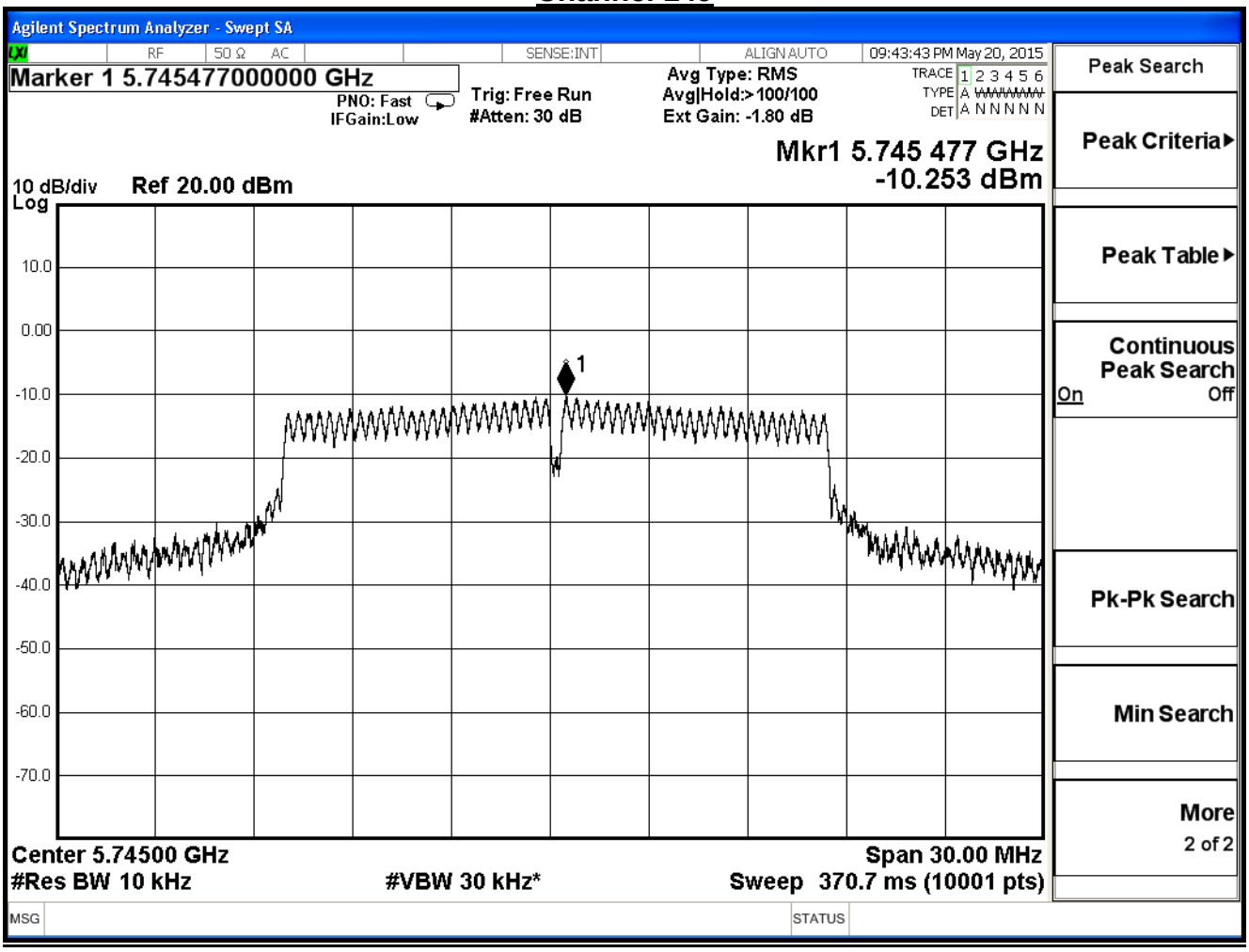
Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

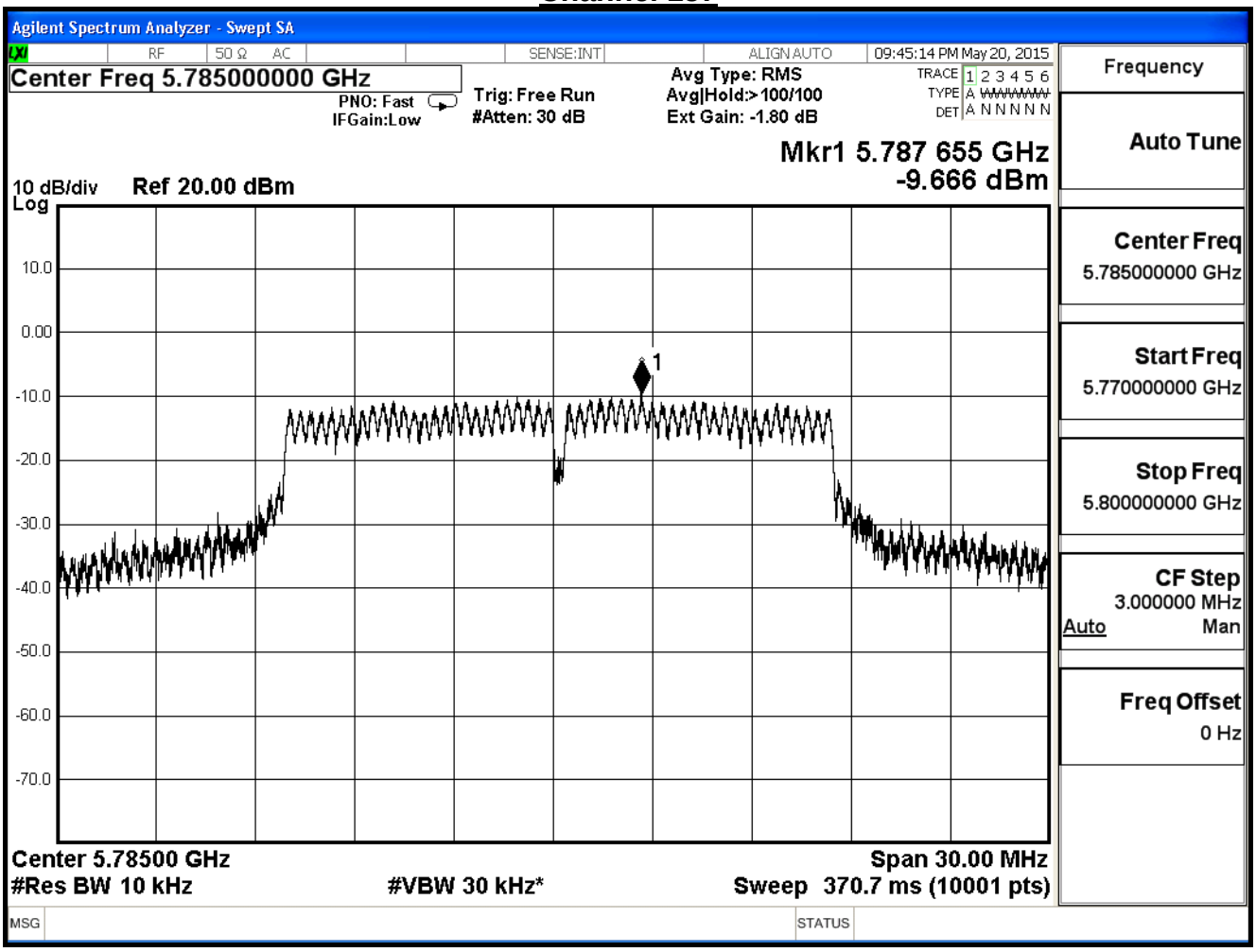
Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

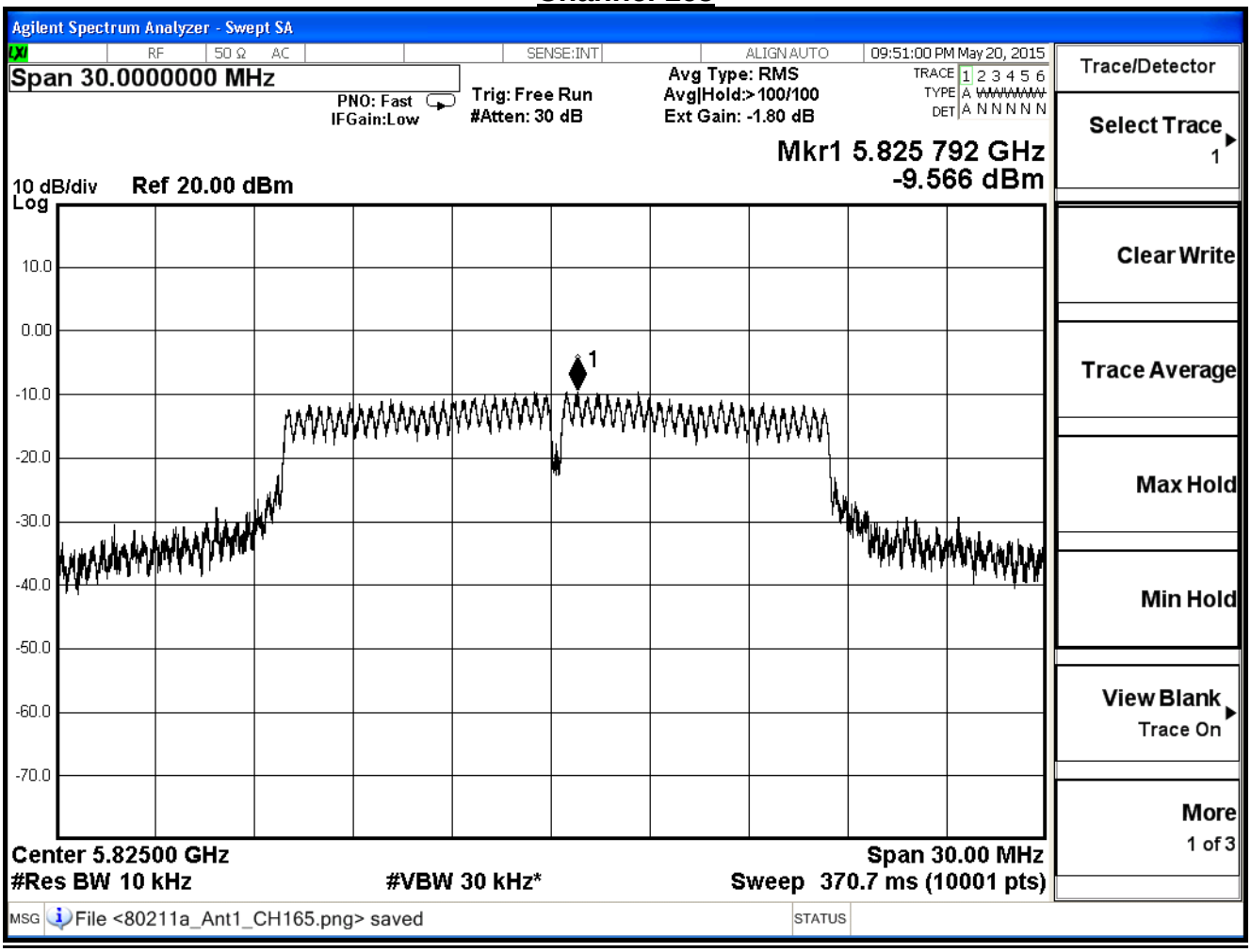
Channel 149


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:43:43 PM May 20, 2015
Marker 1 5.745477000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.745 477 GHz
-10.253 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.74500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Peak Search
Peak Criteria
Peak Table
Continuous Peak Search
On
Off
Pk-Pk Search
Min Search
More
2 of 2

Channel 157


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:45:14 PM May 20, 2015
Center Freq 5.785000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.787 655 GHz
-9.666 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.78500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.785000000 GHz
Start Freq
5.770000000 GHz
Stop Freq
5.800000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 165


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:51:00 PM May 20, 2015
Span 30.0000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.825 792 GHz
-9.566 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.82500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
File <80211a_Ant1_CH165.png> saved
STATUS
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank Trace On
More 1 of 3

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE 802.11a (ANT 1)

Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
149	5745	-9.58	7.41	≦28.99
157	5785	-9.39	7.60	≦28.99
165	5825	-8.97	8.02	≦28.99

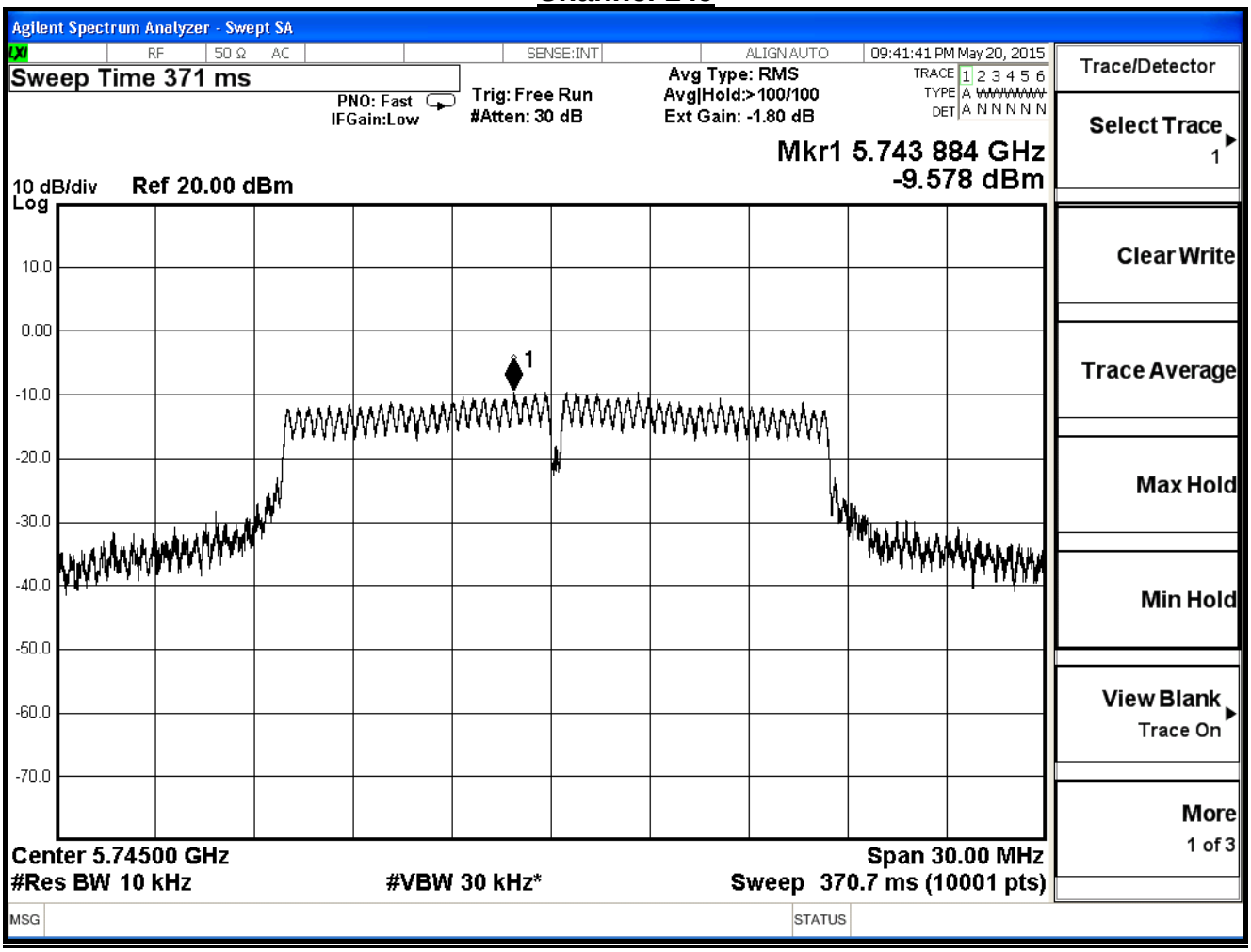
Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

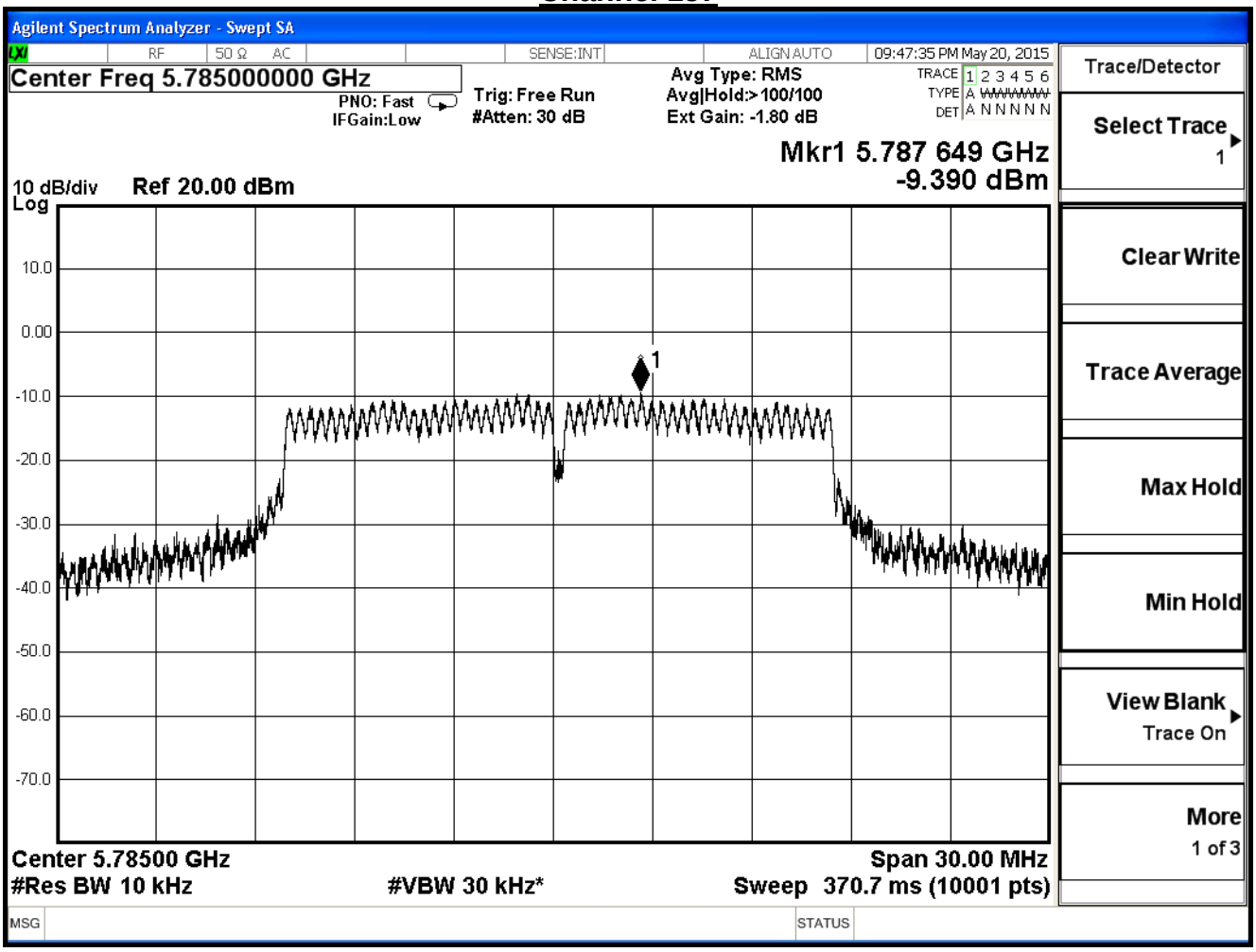
Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

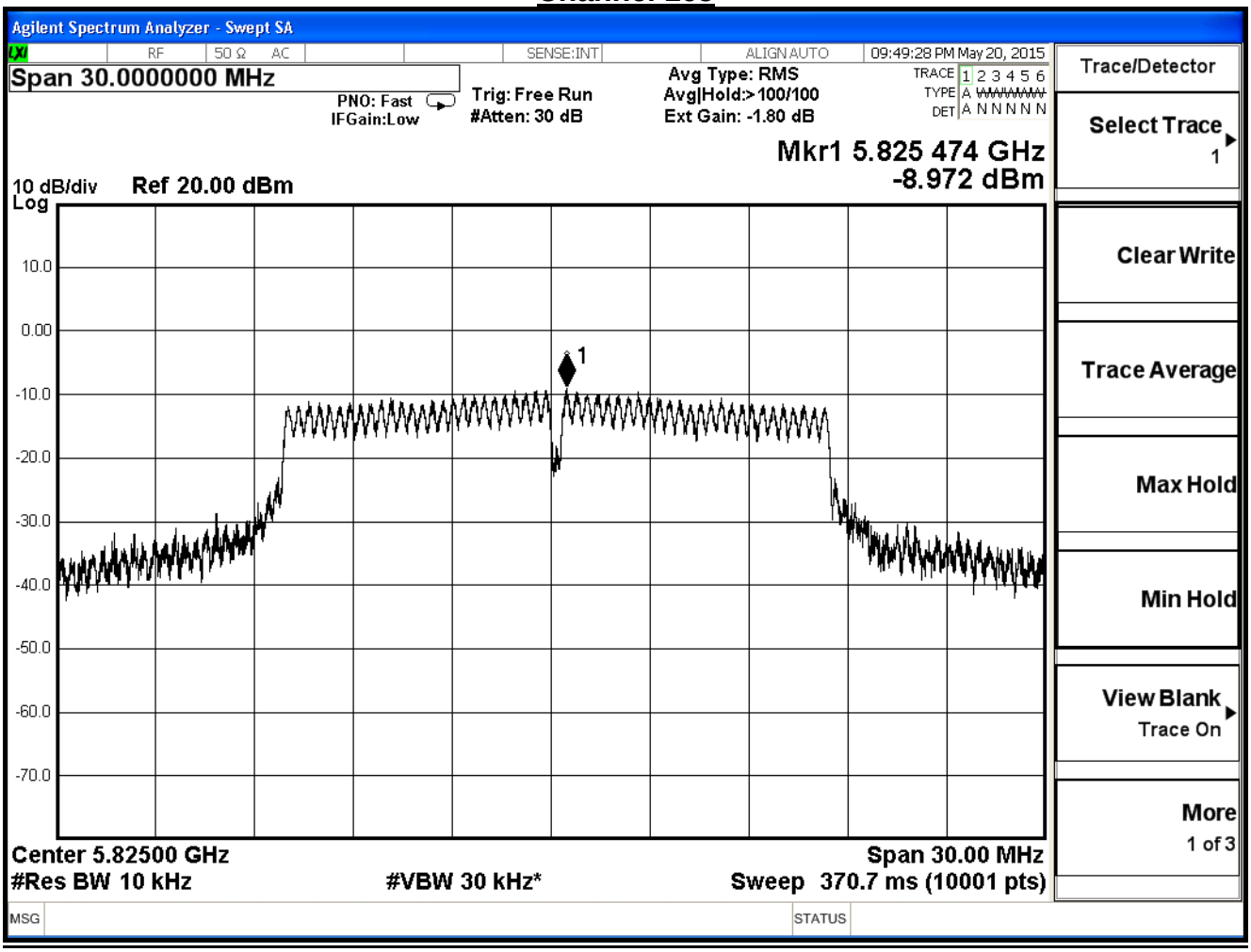
Channel 149


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:41:41 PM May 20, 2015
Sweep Time 371 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.743 884 GHz
-9.578 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.74500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Channel 157


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:47:35 PM May 20, 2015
Center Freq 5.785000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.787 649 GHz
-9.390 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.78500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Channel 165


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:49:28 PM May 20, 2015
Span 30.0000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.825 474 GHz
-8.972 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.82500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE 802.11a (ANT 0+1)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	10.10	≦28.99
157	5785	10.47	≦28.99
165	5825	10.74	≦28.99

Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE802.11n_20MHz_(ANT 0)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
149	5745	-10.67	6.32	≦28.99
157	5785	-9.76	7.23	≦28.99
165	5825	-9.22	7.77	≦28.99

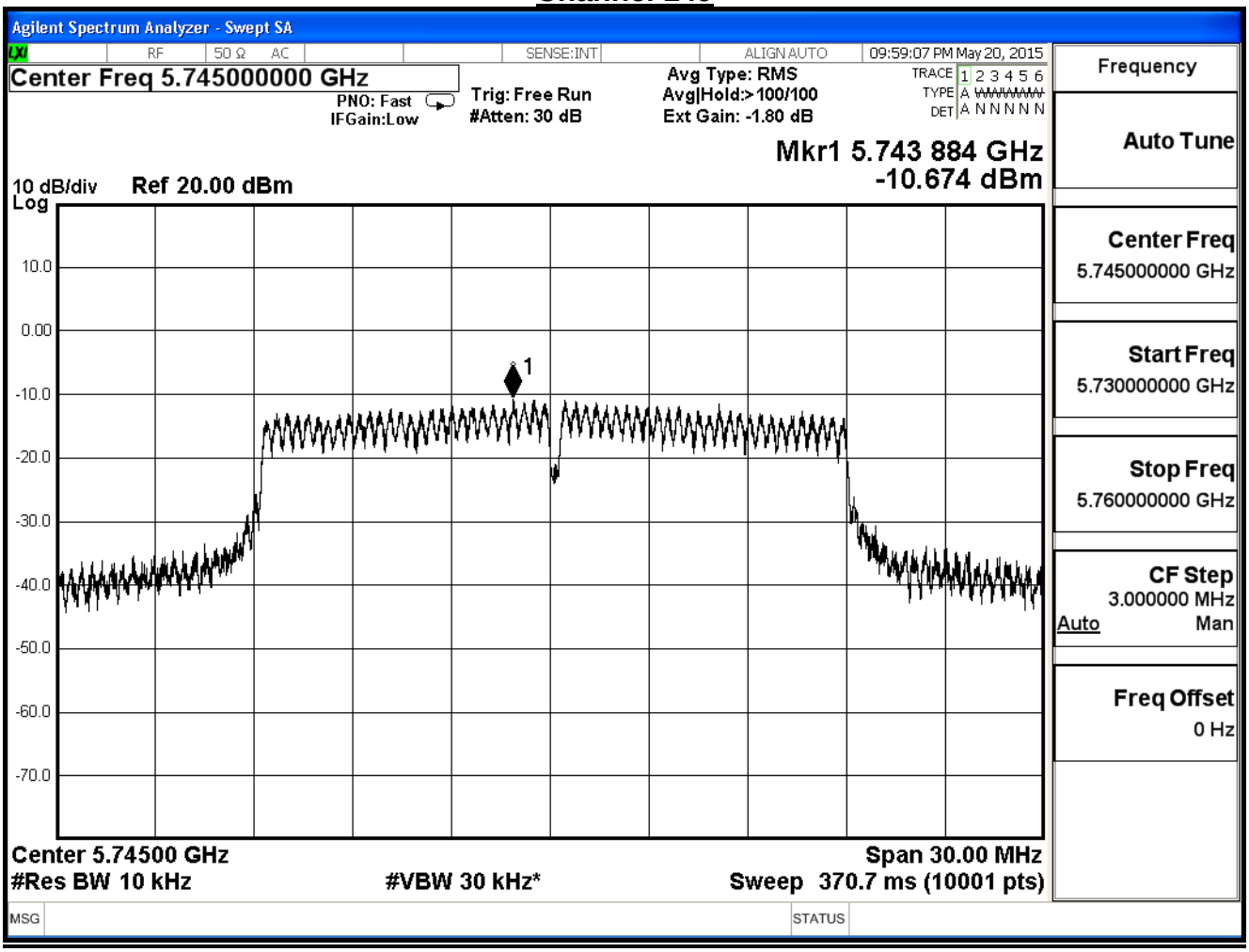
Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

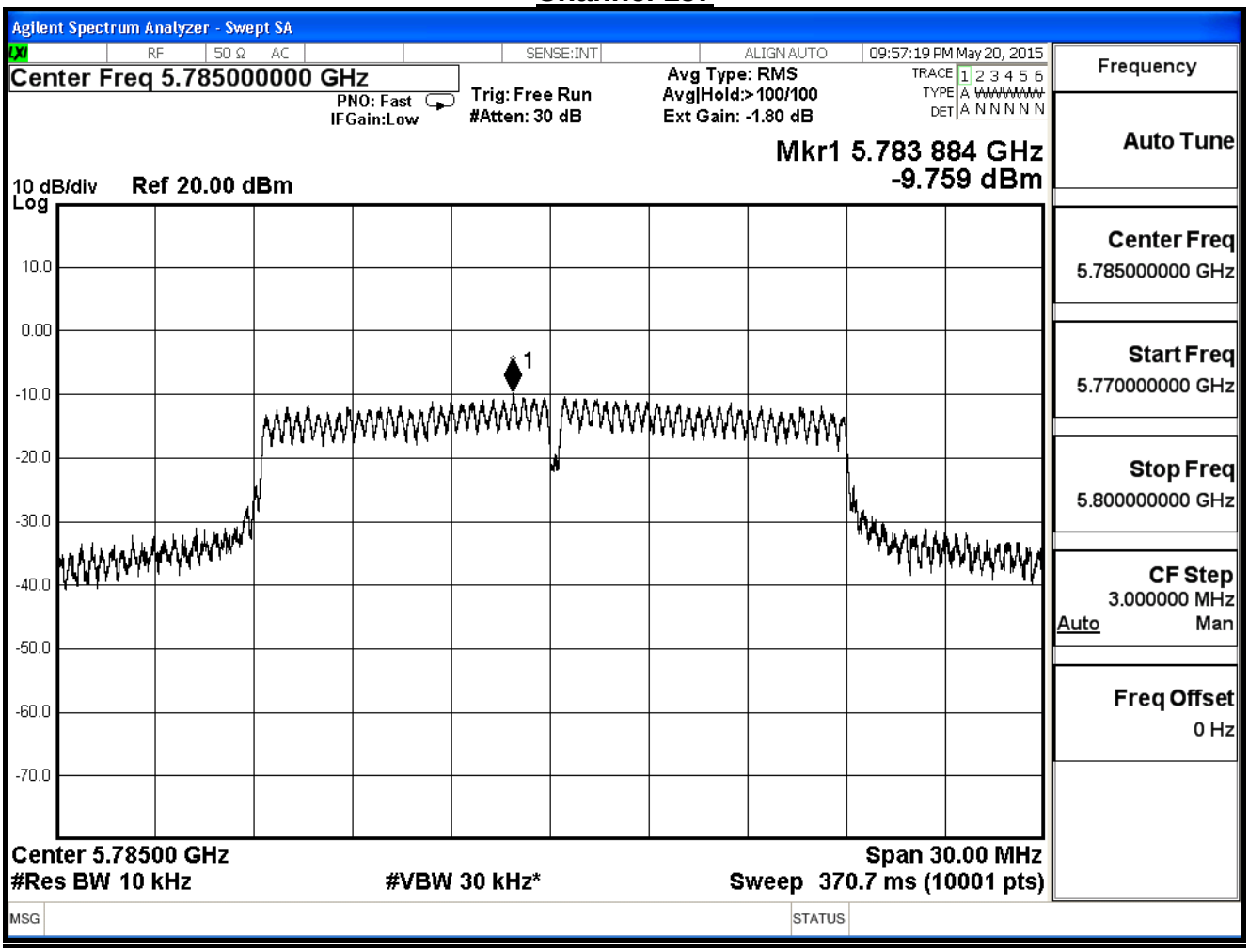
Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

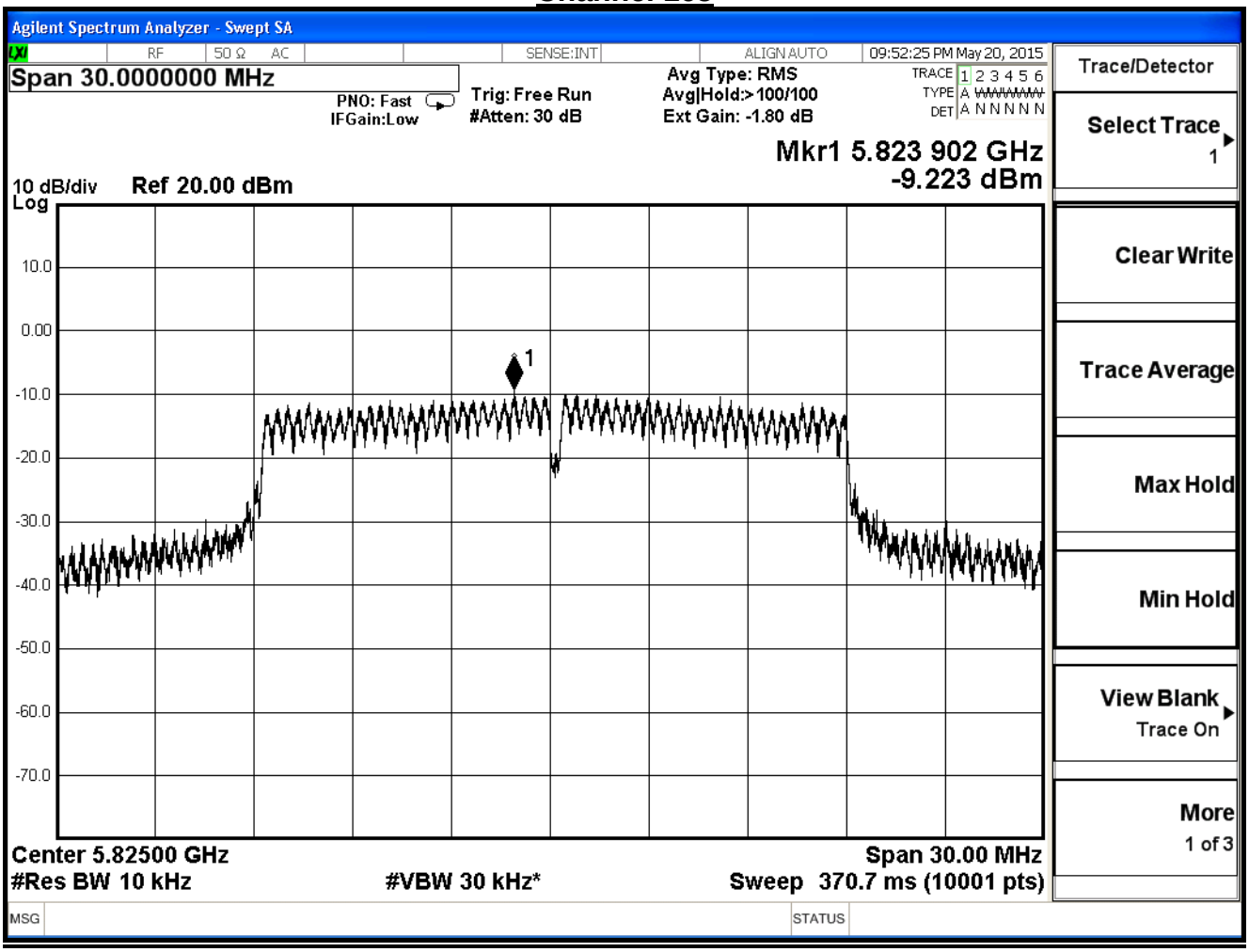
Channel 149


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:59:07 PM May 20, 2015
Center Freq 5.745000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.743 884 GHz
-10.674 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.74500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.745000000 GHz
Start Freq
5.730000000 GHz
Stop Freq
5.760000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 157


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:57:19 PM May 20, 2015
Center Freq 5.785000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.783 884 GHz
-9.759 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.78500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.785000000 GHz
Start Freq
5.770000000 GHz
Stop Freq
5.800000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 165


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:52:25 PM May 20, 2015
Span 30.0000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.823 902 GHz
-9.223 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.82500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE802.11n_20MHz_(ANT 1)

Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
149	5745	-10.27	6.72	≦28.99
157	5785	-9.59	7.40	≦28.99
165	5825	-8.39	8.60	≦28.99

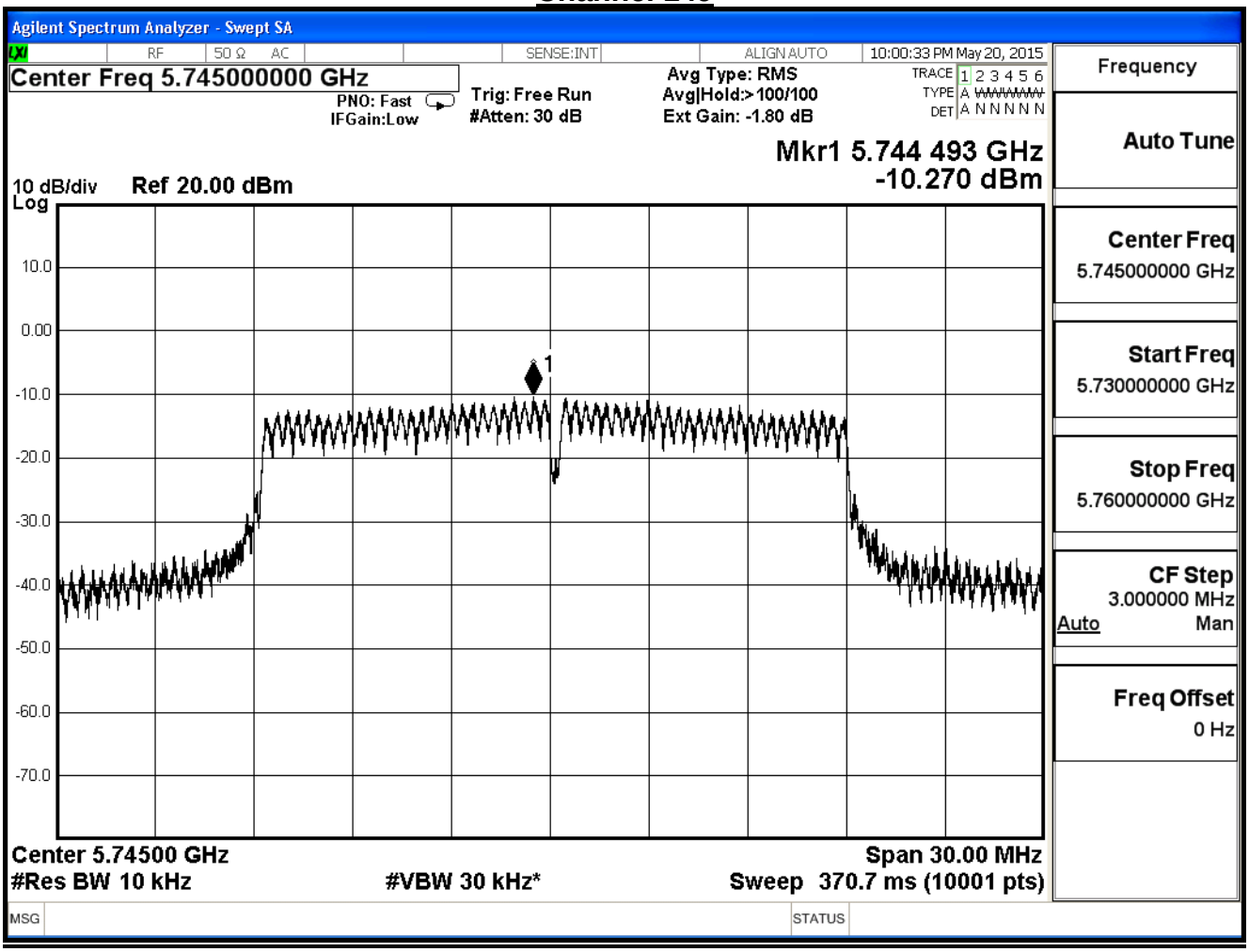
Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

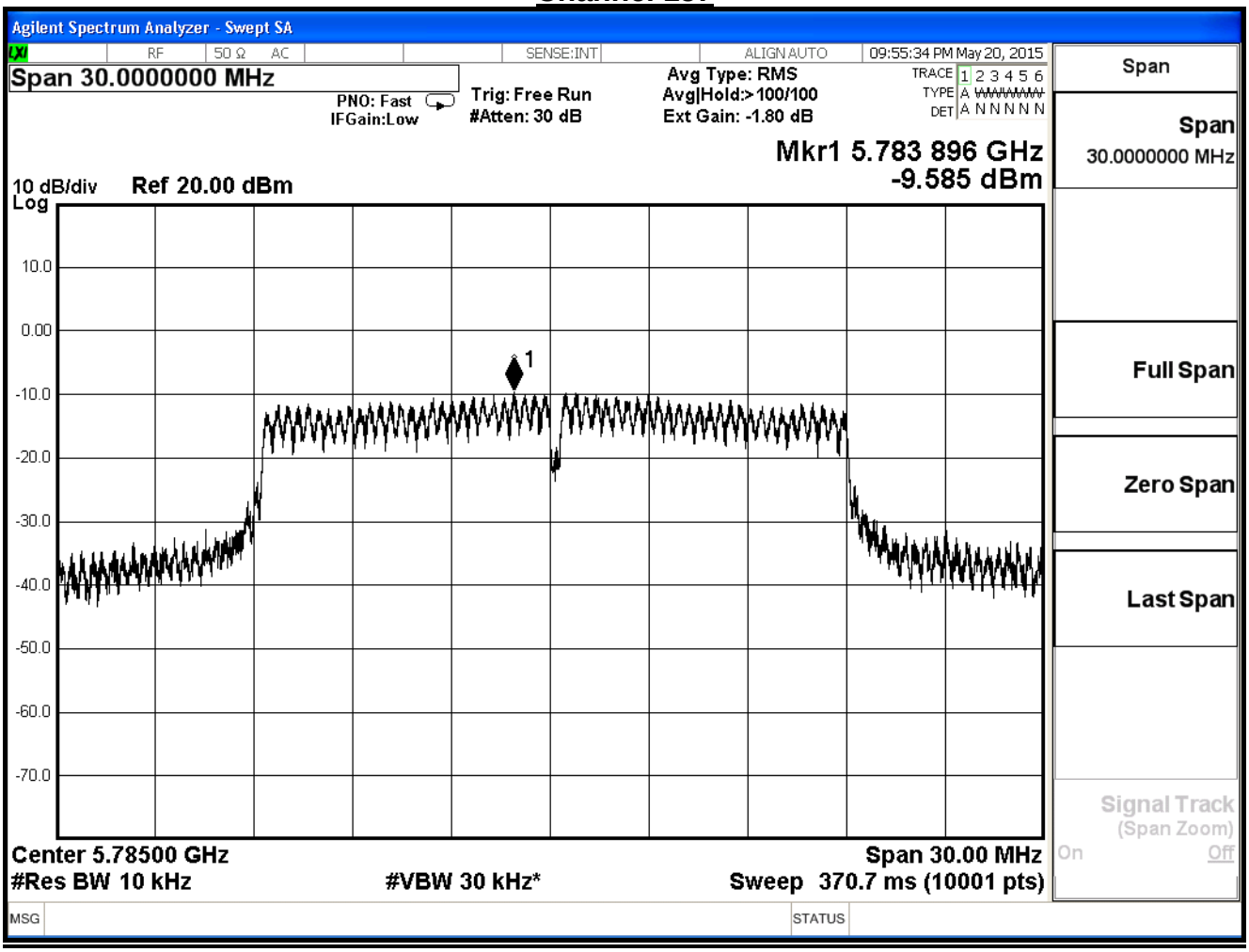
Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

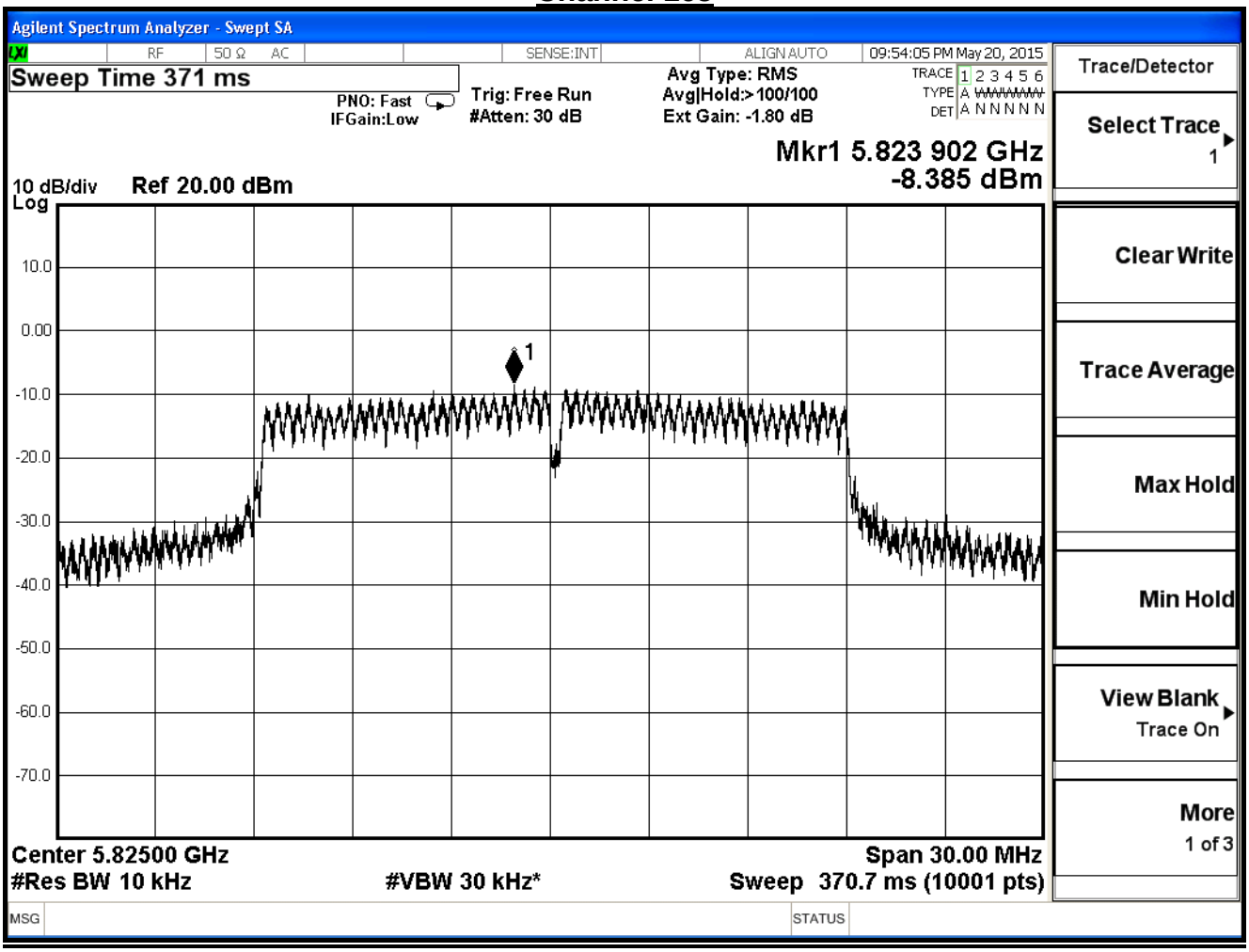
Channel 149


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:00:33 PM May 20, 2015
Center Freq 5.745000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.744 493 GHz
-10.270 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.74500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.745000000 GHz
Start Freq
5.730000000 GHz
Stop Freq
5.760000000 GHz
CF Step
3.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 157


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:55:34 PM May 20, 2015
Span 30.0000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.783 896 GHz
-9.585 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.78500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Span
Span
30.0000000 MHz
Full Span
Zero Span
Last Span
Signal Track
(Span Zoom)
On
Off

Channel 165


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:54:05 PM May 20, 2015
Sweep Time 371 ms
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.823 902 GHz
-8.385 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.82500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 30.00 MHz
Sweep 370.7 ms (10001 pts)
MSG
STATUS
Trace/Detector
Select Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank Trace On
More 1 of 3

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE802.11n 20MHz(ANT 0+1)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	9.53	≦28.99
157	5785	10.33	≦28.99
165	5825	11.22	≦28.99

Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE 802.11n_40MHz (ANT 0)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
151	5755	-14.93	2.06	≦28.99
159	5795	-12.97	4.02	≦28.99

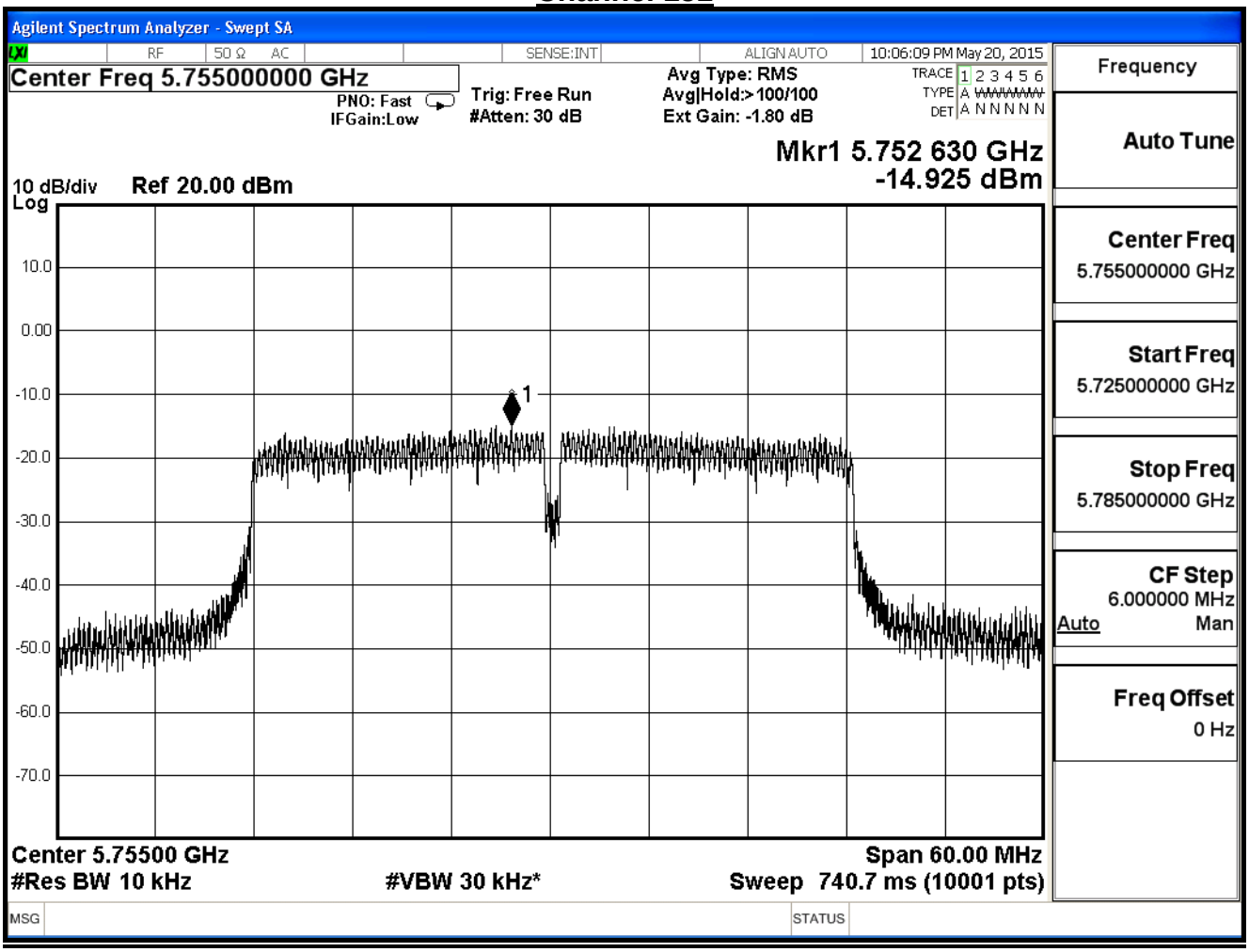
Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

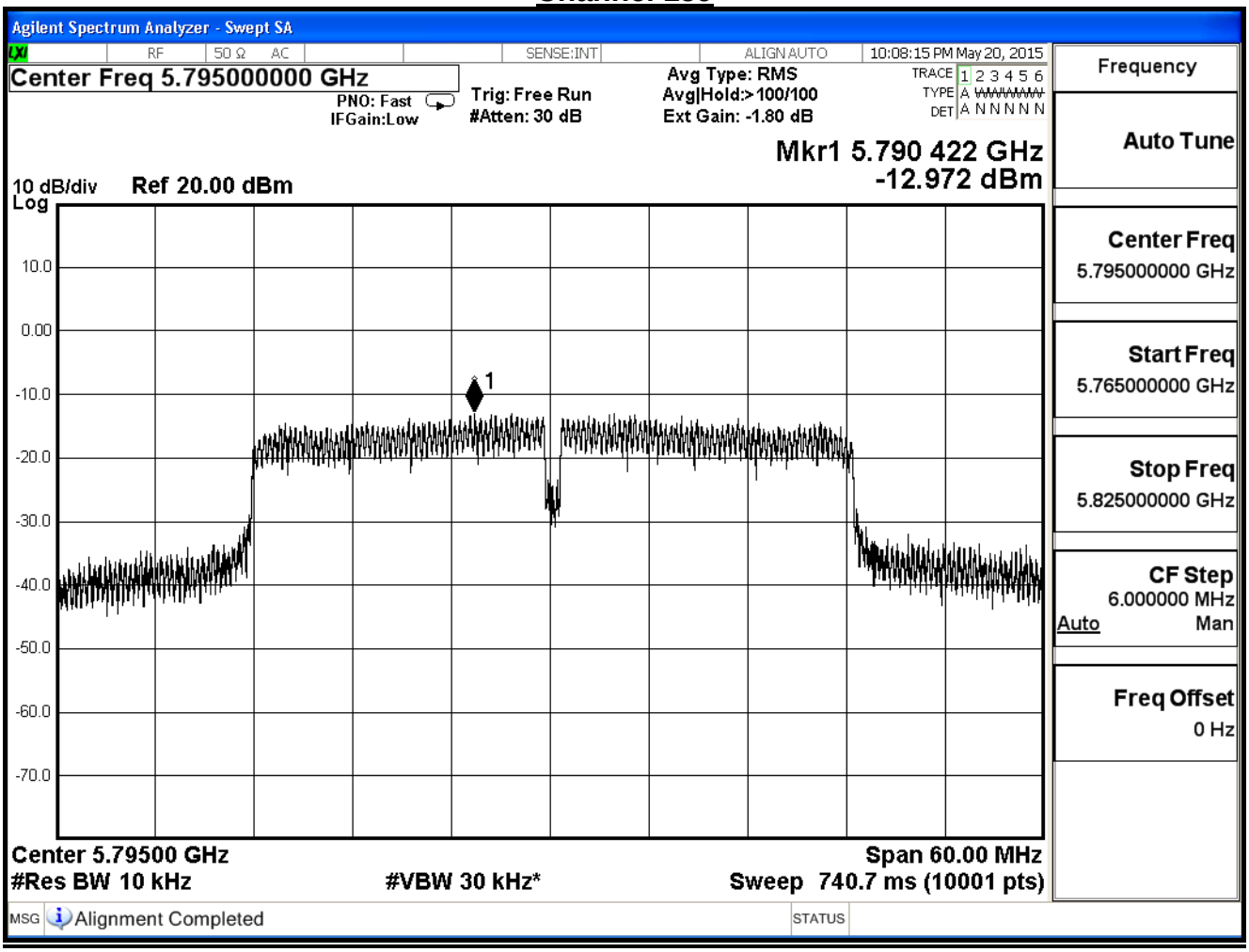
Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

Channel 151


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:06:09 PM May 20, 2015
Center Freq 5.755000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.752 630 GHz
-14.925 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.75500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 60.00 MHz
Sweep 740.7 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.755000000 GHz
Start Freq
5.725000000 GHz
Stop Freq
5.785000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 159


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:08:15 PM May 20, 2015
Center Freq 5.795000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.790 422 GHz
-12.972 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.79500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 60.00 MHz
Sweep 740.7 ms (10001 pts)
MSG
Alignment Completed
STATUS
Frequency
Auto Tune
Center Freq
5.795000000 GHz
Start Freq
5.765000000 GHz
Stop Freq
5.825000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE 802.11n_40MHz (ANT 1)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
151	5755	-14.82	2.17	≦28.99
159	5795	-12.73	4.26	≦28.99

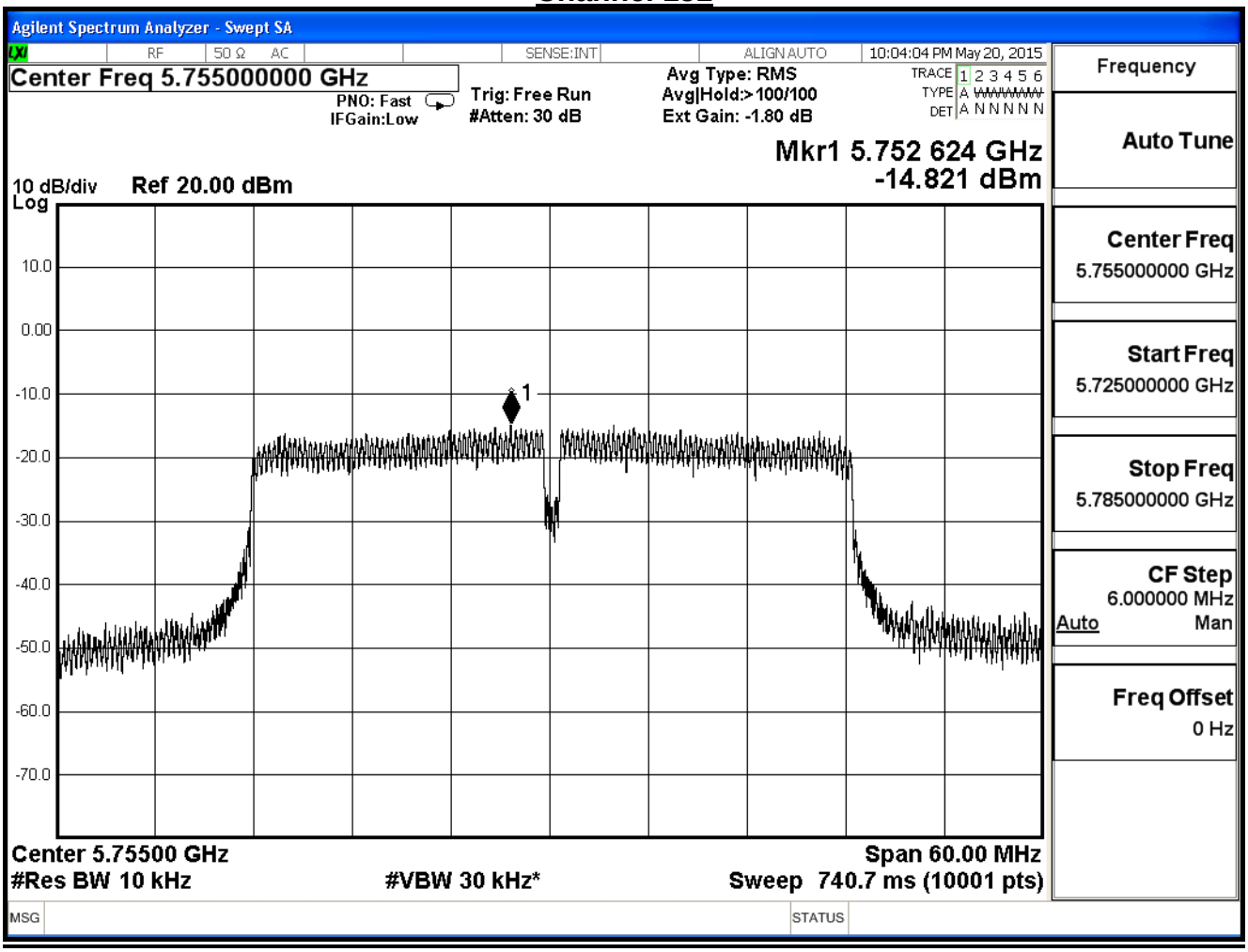
Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

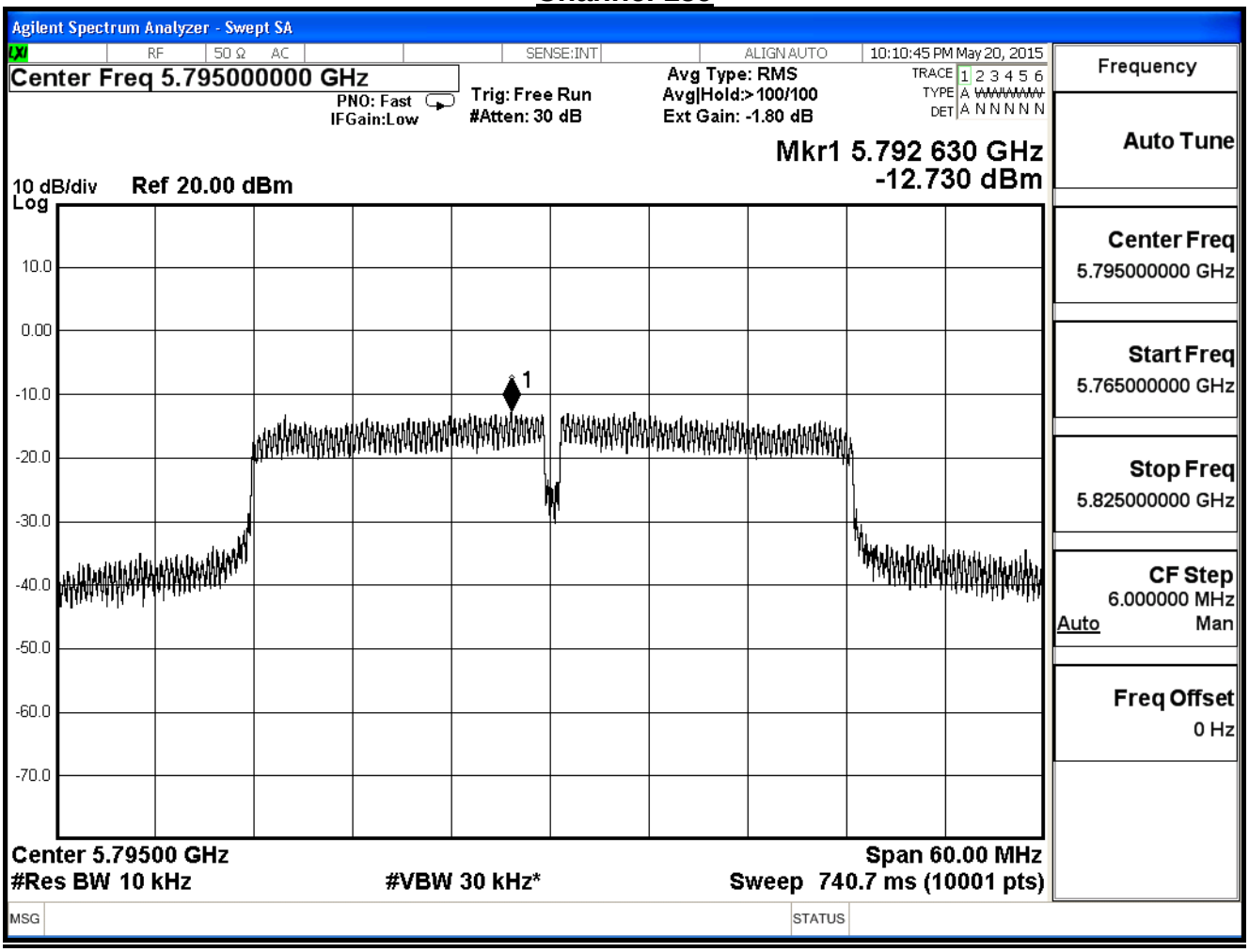
Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

Channel 151


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:04:04 PM May 20, 2015
Center Freq 5.755000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.752 624 GHz
-14.821 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.75500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 60.00 MHz
Sweep 740.7 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.755000000 GHz
Start Freq
5.725000000 GHz
Stop Freq
5.785000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 159


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:10:45 PM May 20, 2015
Center Freq 5.795000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.792 630 GHz
-12.730 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Center 5.79500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 60.00 MHz
Sweep 740.7 ms (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.795000000 GHz
Start Freq
5.765000000 GHz
Stop Freq
5.825000000 GHz
CF Step
6.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

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

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
151	5755	5.13	≦28.99
159	5795	7.15	≦28.99

Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE 802.11ac_80MHz (ANT 0)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
155	5775	-18.23	-1.24	≦28.99

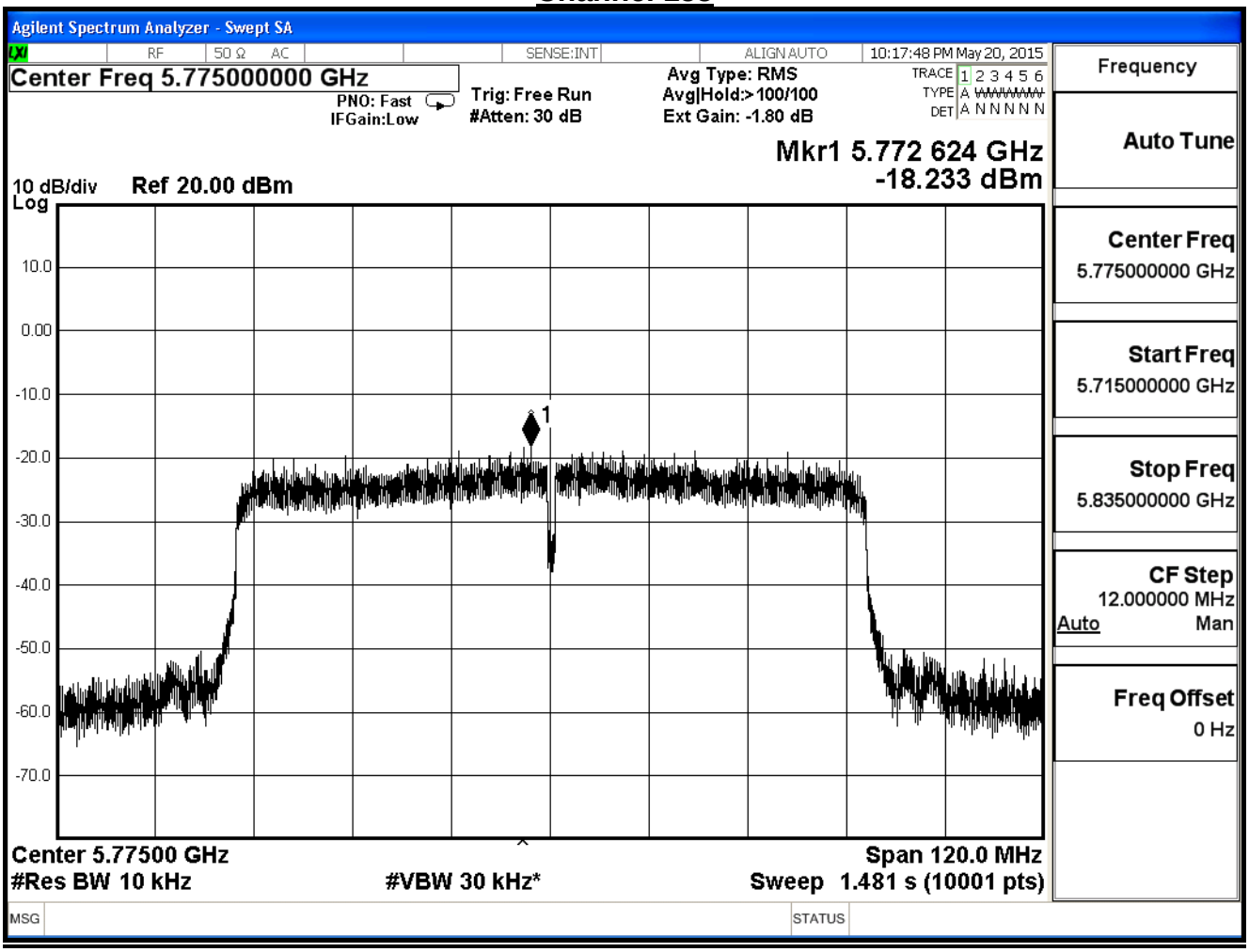
Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

Channel 155


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:17:48 PM May 20, 2015
Center Freq 5.775000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.772 624 GHz
-18.233 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.77500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 120.0 MHz
Sweep 1.481 s (10001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
5.775000000 GHz
Start Freq
5.715000000 GHz
Stop Freq
5.835000000 GHz
CF Step
12.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE 802.11ac_80MHz (ANT 1)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
155	5775	-18.59	-1.60	≦28.99

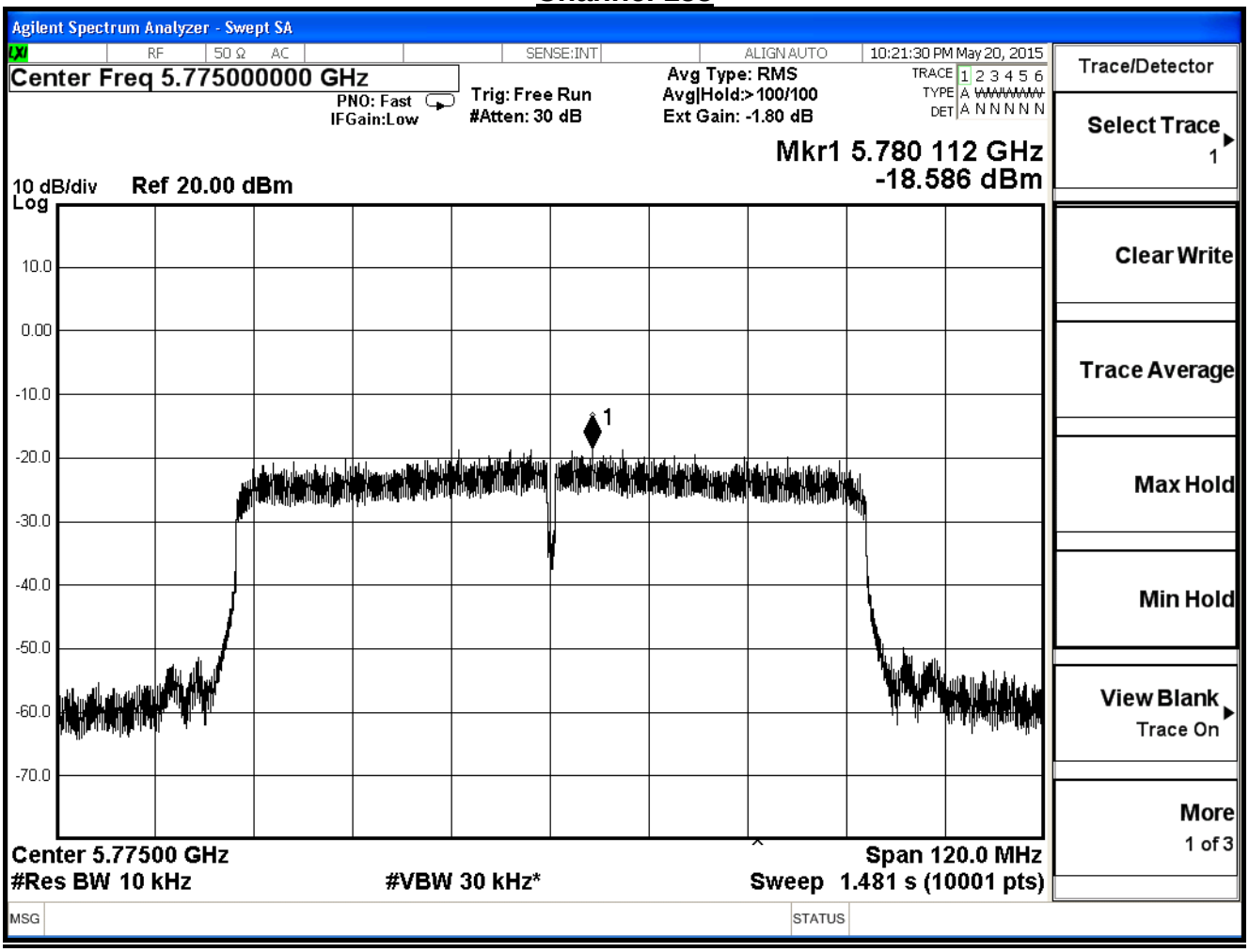
Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

Channel 155


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:21:30 PM May 20, 2015
Center Freq 5.775000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -1.80 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET A N N N N N
Mkr1 5.780 112 GHz
-18.586 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.77500 GHz
#Res BW 10 kHz
#VBW 30 kHz*
Span 120.0 MHz
Sweep 1.481 s (10001 pts)
MSG
STATUS
Trace/Detector
Select Trace
1
Clear Write
Trace Average
Max Hold
Min Hold
View Blank
Trace On
More
1 of 3

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Peak Power Spectral Density		
Test Mode	Mode 1: Transmit		
Date of Test	2015/05/20	Test Site	SR7

IEEE 802.11ac_80MHz (ANT 0+1)			
Channel No.	Frequency (MHz)	Measurement (dBm)	Limit (dBm)
155	5775	1.59	≦28.99

Note:

Directional Antenna: 10log(Ant N)+Max Gain =3.01+4=7.01dBi

Peak Transmit Output Limit:30dBm-(7.01dBi-6dB)=28.99 dBm

Correct factor =10 log(500KHz/10KHz)=16.99 dB
Reading=measure + correct factor

3. Frequency Stability

3.1. Test Equipment

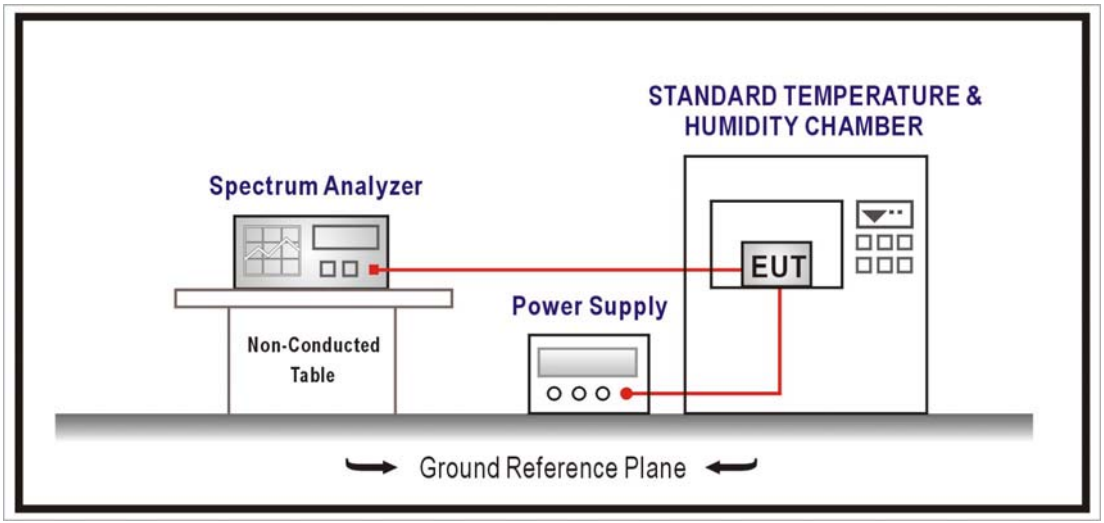
The following test equipments are used during the radiated emission tests:

Frequency Stability / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2017/01/18

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

3.2. Test Setup



3.3. Limits

Manufactures of all devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified

3.4. Test Procedure

The EUT was setup to ANSI C63.10:2009; tested to U-NII test procedure of KDB 789033 D02 for compliance to FCC 47CFR Subpart E requirements.

3.5. Uncertainty

The measurement uncertainty is defined as ± 150 Hz

3.6. Test Result

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11a - 5745MHz(ANT 0)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5745.0284	4.9441	PASS
-10		5745.0143	2.4966	PASS
0		5744.9905	-1.6537	PASS
10		5744.9836	-2.8589	PASS
20		5744.9510	-8.5241	PASS
30		5744.9544	-7.9370	PASS
40		5744.9716	-4.9470	PASS
50		5744.9662	-5.8810	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5744.9987	-0.2254	PASS
	120	5745.0031	0.5423	PASS
	138	5745.0059	1.0347	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11a - 5745MHz(ANT 1)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5745.0173	3.0191	PASS
-10		5745.0035	0.6136	PASS
0		5744.9785	-3.7423	PASS
10		5744.9841	-2.7757	PASS
20		5744.9720	-4.8765	PASS
30		5744.9955	-0.7828	PASS
40		5744.9627	-6.4910	PASS
50		5744.9747	-4.4021	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5744.9939	-1.0661	PASS
	120	5744.9948	-0.9005	PASS
	138	5745.0032	0.5490	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11a - 5825MH(ANT 0)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5825.0082	1.4087	PASS
-10		5825.0155	2.6605	PASS
0		5824.9980	-0.3467	PASS
10		5824.9815	-3.1704	PASS
20		5824.9685	-5.4040	PASS
30		5824.9636	-6.2513	PASS
40		5824.9759	-4.1301	PASS
50		5824.9851	-2.5631	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5824.9976	-0.4134	PASS
	120	5824.9906	-1.6177	PASS
	138	5824.9972	-0.4872	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11a - 5825MHz(ANT 1)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5825.0093	1.5973	PASS
-10		5825.0119	2.0362	PASS
0		5824.9835	-2.8306	PASS
10		5824.9649	-6.0317	PASS
20		5824.9894	-1.8223	PASS
30		5824.9808	-3.2878	PASS
40		5824.9986	-0.2376	PASS
50		5824.9497	-8.6275	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5824.9952	-0.8240	PASS
	120	5824.9986	-0.2332	PASS
	138	5824.9995	-0.0853	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_20M - 5745MHz(ANT 0)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5745.0138	2.4039	PASS
-10		5745.0007	0.1232	PASS
0		5744.9828	-2.9920	PASS
10		5744.9749	-4.3756	PASS
20		5744.9868	-2.2990	PASS
30		5744.9850	-2.6136	PASS
40		5744.9964	-0.6273	PASS
50		5744.9944	-0.9803	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5745.0083	1.4390	PASS
	120	5744.9958	-0.7347	PASS
	138	5744.9973	-0.4642	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_20M - 5745MHz(ANT 1)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5745.0127	2.2077	PASS
-10		5745.0116	2.0235	PASS
0		5744.9725	-4.7855	PASS
10		5744.9935	-1.1265	PASS
20		5744.9822	-3.0954	PASS
30		5744.9944	-0.9760	PASS
40		5744.9821	-3.1161	PASS
50		5744.9901	-1.7270	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5745.0029	0.5084	PASS
	120	5744.9956	-0.7586	PASS
	138	5745.0045	0.7865	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_20M - 5825MHz(ANT 0)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5825.0069	1.1797	PASS
-10		5825.0068	1.1614	PASS
0		5824.9903	-1.6585	PASS
10		5824.9682	-5.4640	PASS
20		5824.9932	-1.1722	PASS
30		5824.9958	-0.7189	PASS
40		5824.9615	-6.6158	PASS
50		5824.9796	-3.4976	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5824.9979	-0.3672	PASS
	120	5824.9907	-1.5900	PASS
	138	5825.0017	0.2945	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_20M - 5825MHz(ANT 1)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5825.0171	2.9380	PASS
-10		5825.0119	2.0417	PASS
0		5824.9952	-0.8174	PASS
10		5824.9920	-1.3734	PASS
20		5824.9609	-6.7181	PASS
30		5824.9908	-1.5839	PASS
40		5824.9941	-1.0113	PASS
50		5824.9735	-4.5444	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5824.9969	-0.5348	PASS
	120	5824.9938	-1.0704	PASS
	138	5824.9980	-0.3361	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_40M - 5755MHz(ANT 0)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5755.0029	0.5031	PASS
-10		5755.0163	2.8385	PASS
0		5754.9982	-0.3065	PASS
10		5754.9695	-5.2930	PASS
20		5754.9940	-1.0458	PASS
30		5754.9864	-2.3714	PASS
40		5754.9685	-5.4724	PASS
50		5754.9662	-5.8787	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5754.9923	-1.3452	PASS
	120	5754.9942	-1.0068	PASS
	138	5754.9975	-0.4426	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_40M - 5755MHz(ANT 1)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5755.0212	3.6835	PASS
-10		5755.0193	3.3589	PASS
0		5754.9766	-4.0682	PASS
10		5754.9860	-2.4263	PASS
20		5754.9781	-3.7975	PASS
30		5754.9796	-3.5485	PASS
40		5754.9631	-6.4080	PASS
50		5754.9682	-5.5252	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5754.9927	-1.2749	PASS
	120	5755.0014	0.2425	PASS
	138	5755.0005	0.0930	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_40M - 5795MHz(ANT 0)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5795.0060	1.0313	PASS
-10		5795.0097	1.6659	PASS
0		5794.9844	-2.6987	PASS
10		5794.9817	-3.1572	PASS
20		5794.9727	-4.7031	PASS
30		5794.9866	-2.3057	PASS
40		5794.9883	-2.0154	PASS
50		5794.9723	-4.7833	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5794.9913	-1.4955	PASS
	120	5794.9930	-1.2146	PASS
	138	5794.9935	-1.1165	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11n_40M - 5795MHz(ANT 1)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5795.0268	4.6208	PASS
-10		5795.0021	0.3684	PASS
0		5794.9895	-1.8110	PASS
10		5794.9831	-2.9163	PASS
20		5794.9974	-0.4455	PASS
30		5794.9983	-0.2991	PASS
40		5794.9663	-5.8208	PASS
50		5794.9871	-2.2238	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5795.0013	0.2205	PASS
	120	5794.9980	-0.3493	PASS
	138	5794.9997	-0.0557	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11ac_80M-5775MHz(ANT 0)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5775.0050	0.8664	PASS
-10		5775.0090	1.5588	PASS
0		5774.9701	-5.1846	PASS
10		5774.9696	-5.2676	PASS
20		5774.9889	-1.9169	PASS
30		5774.9742	-4.4628	PASS
40		5774.9818	-3.1491	PASS
50		5774.9779	-3.8190	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5775.0074	1.2738	PASS
	120	5775.0021	0.3696	PASS
	138	5775.0045	0.7860	PASS

Product	Dual-band Wireless-AC1200 Range Extender		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit - 802.11ac_80M-5775MHz(ANT 1)		
Date of Test	2016/03/29	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5775.0121	2.1001	PASS
-10		5775.0140	2.4169	PASS
0		5774.9846	-2.6709	PASS
10		5774.9729	-4.6874	PASS
20		5774.9805	-3.3734	PASS
30		5774.9569	-7.4682	PASS
40		5774.9693	-5.3154	PASS
50		5774.9958	-0.7315	PASS

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5775.0042	0.7264	PASS
	120	5774.9861	-2.4039	PASS
	138	5775.0001	0.0216	PASS

Attachment 1

- **Original Report**