

# FCC Test Report

Product Name : Dual-band Gigabit Wireless-N Router  
Trade Name : ASUS  
Model No. : RT-N56U  
FCC ID. : MSQ-RTN56U

Applicant : ASUSTeK COMPUTER INC.

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

Date of Receipt : May 09, 2016

Issued Date : May 13, 2016

Report No. : 1650243R-RFUSP56V00-A

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 : May 13, 2016

Report No. : 1650243R-RFUSP56V00-A


Quietek


a  DEKRA company


Product Name : Dual-band Gigabit Wireless-N Router  
 Applicant : ASUSTeK COMPUTER INC.  
 Address : 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan  
 Manufacturer : Senao Networks, Inc.  
 Model No. : RT-N56U  
 FCC ID. : MSQ-RTN56U  
 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: 2015  
 ANSI C63.10: 2013  
 Test Lab : Quietek Hsin Chu Laboratory  
 Test Result : Complied

The test results relate only to the samples tested.

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Documented By :   
 \_\_\_\_\_  
 ( Carol Tsai / Senior Engineering Adm. Specialist )

Tested By :   
 \_\_\_\_\_  
 ( JuBo Shen / Senior Engineer )

Approved By :   
 \_\_\_\_\_  
 ( Roy Wang / Director )

**Revision History**

Report No.	Version	Description	Issued Date
107261R-RFUSP42V01	V1.0	Initial issue of report	Sep. 30, 2010
1650243R-RFUSP56V00-A	V1.0	Update WLAN 5G band 4 standard to FCC 15E new rule, and verify Power Density (Measure Level & Limit), Frequency Stability tested. The WLAN 2.4G test data, please refer to the 107261R-RFUSP42V01.	May 13, 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](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:

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## TABLE OF CONTENTS

Description	Page
1. General Information.....	6
1.1. EUT Description .....	6
1.2. Test Mode .....	11
1.3. Tested System Details .....	12
1.4. Configuration of tested System .....	13
1.5. EUT Exercise Software .....	14
1.6. Test Facility .....	15
2. Power Density .....	16
2.1. Test Equipment.....	16
2.2. Test Setup .....	16
2.3. Limits .....	16
2.4. Test Procedure .....	17
2.5. Uncertainty .....	17
2.6. Test Result.....	18
3. Frequency Stability .....	38
3.1. Test Equipment.....	38
3.2. Test Setup .....	38
3.3. Limits .....	38
3.4. Test Procedure .....	38
3.5. Uncertainty .....	38
3.6. Test Result.....	39
Attachment 1 .....	49
Original Report .....	49

**1. General Information**

**1.1. EUT Description**

Product Name	Dual-band Gigabit Wireless-N Router	
Product Type	WLAN(2TX,3RX)	
Trade Name	ASUS	
Model No.	RT-N56U	
Frequency Range / Channel Number	IEEE 802.11a/ IEEE 802.11n (20MHz)	5745~5825MHz / 5 Channels
	IEEE 802.11n (40MHz)	5755~5795MHz / 2 Channels
Type of Modulation	IEEE 802.11a/n	Orthogonal Frequency Division Multiplexing (OFDM)
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 23 and bandwidth defined in 802.11n

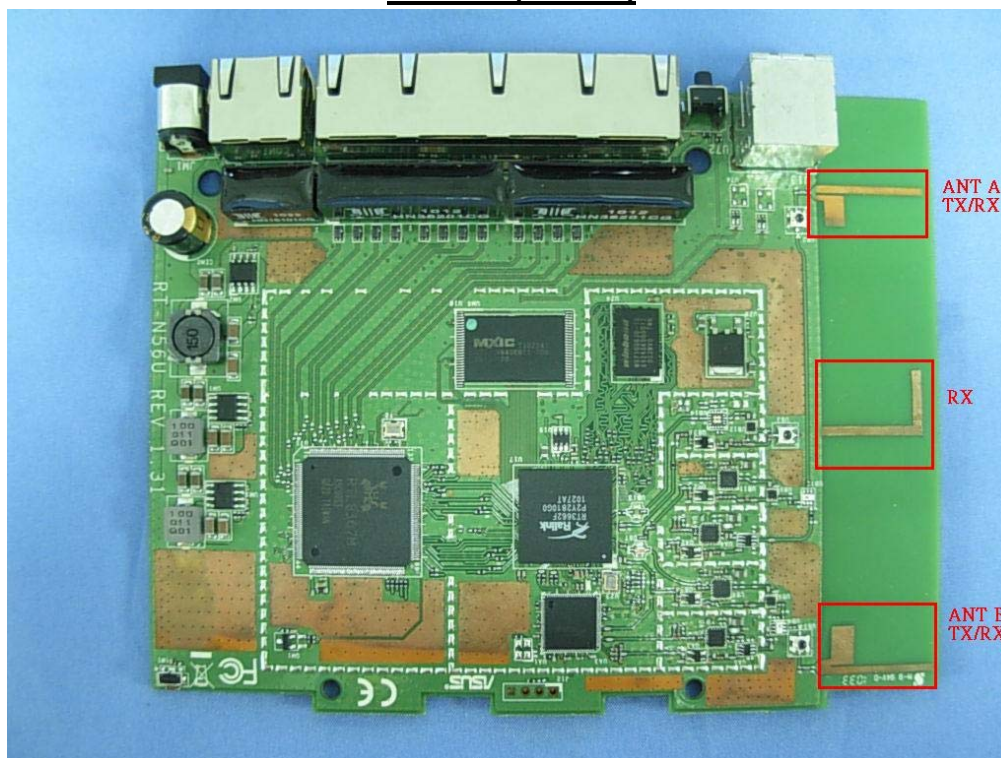
Antenna Information	
Antenna Gain	5.1dBi (5.8G)
Channel Control	Manual
Antenna Type	CB Antenna

Accessories Information	
LAN Cable	Non-Shielded, 1.5m
Power Adapter	DVE, DSA-24PFD-15 FUS 120200 I/P: 100-240V ~ 50/60Hz 0.8A O/P: +12V $\approx$ 2A Cable out: Non-Shielded, 1.5m
Power Adapter	ASUS, AD820M0 I/P: 100-240V ~ 50/60Hz, 0.8A O/P: 19V $\approx$ 1.58A Cable out: Non-Shielded, 1.5m, one ferrite core bonded.
Power Adapter	ASUS, AD82030 I/P: 100-240V ~ 50/60Hz, 0.8A O/P: 19V $\approx$ 1.58A Cable out: Non-Shielded, 1.8m, one ferrite core bonded.
Power Adapter	ASUS, EXA1004UH I/P: 100-240V, 50-60Hz, 1A O/P: +19V $\approx$ 1.58A Cable out: Non-Shielded, 2.5m, one ferrite core bonded.

**ANT-TX / Rx & Bandwidth**

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

**ANT A/B (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 <sub>BPSCS</sub>	Number of coded bits per single carrier
N <sub>CBPS</sub>	Number of coded bits per symbol
N <sub>DBPS</sub>	Number of data bits per symbol
GI	guard interval

IEEE 802.11a & IEEE 802.11n (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)

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

Note:

1. This device is a Dual-band Gigabit Wireless-N Router including 2.4GHz b/g/n and 5GHz a/n (2x3) transmitting and receiving function.
2. 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.
3. The power adapters, ASUS: AD820M0 and ASUS: AD82030 are equal in layout. Only one of them was tested and shown in the report.
4. The function of the 5.2GHz transmitting is measured and makes a test report of the report number: 1650243R-RFUSP56V00.
5. This device is a composite device in accordance with Part 15 regulations. The receiving function receiving was tested and its test report number is 107261R-RFUSP37V02 under Declaration of Conformity.5

## 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 (Adapter: DVE_DSA-24PFD-15 FUS 120200) Mode 2: Transmit (Adapter: ASUS_AD820M0) Mode 3: Transmit (Adapter: ASUS_EXA1004UH)
----	---

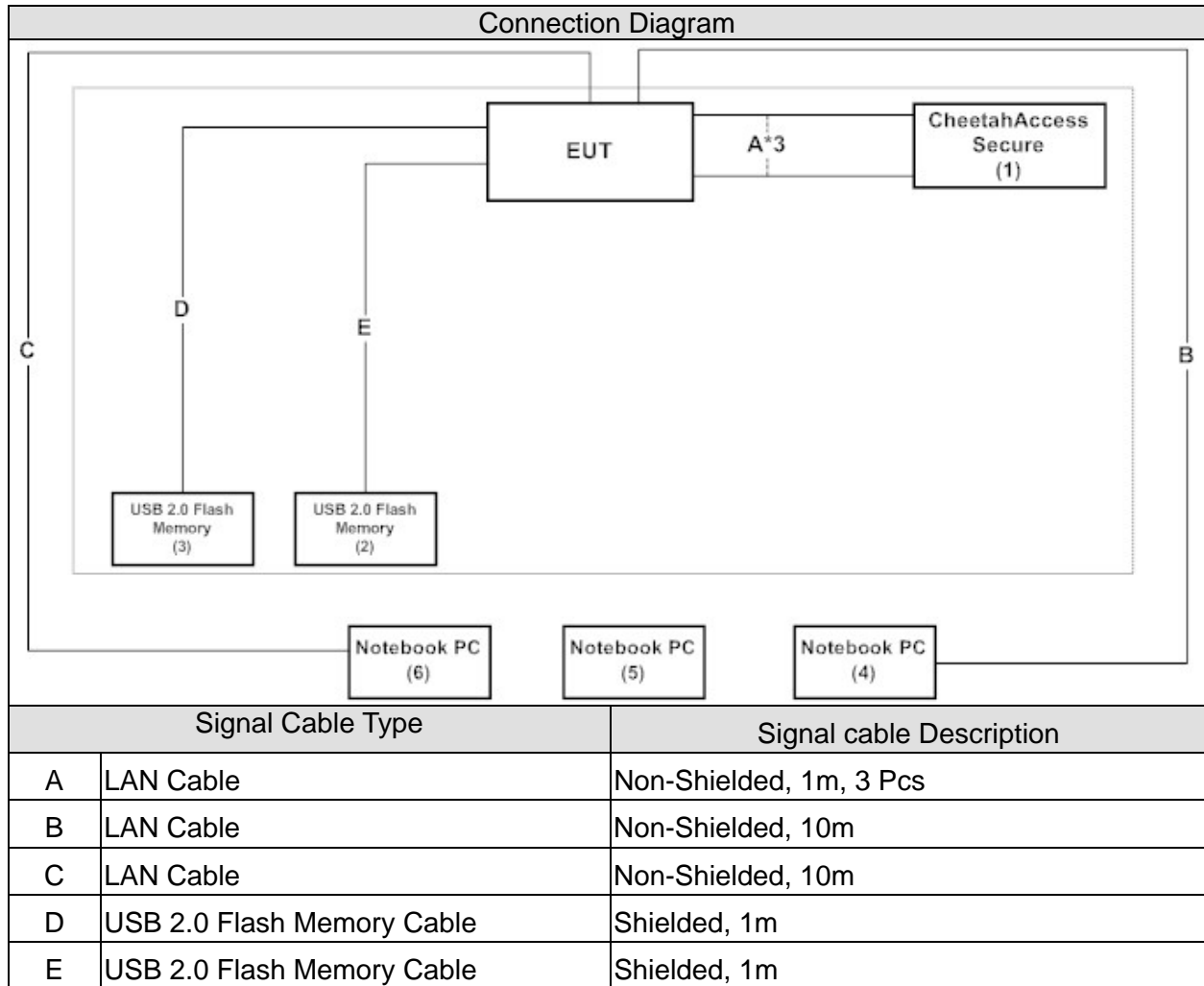
Test Items	Modulation	Channel	Antenna	Result
Conducted Emission	11n(40MHz)	151	0+1	N/A
99 % & 26dB Bandwidth	a	149/ 157/ 165	0	N/A
	11n(20MHz)	149/ 157/ 165	0+1	N/A
	11n(40MHz)	151/ 159	0+1	N/A
Peak Transmit Output	a	149/ 157/ 165	0	N/A
	11n(20MHz)	149/ 157/ 165	0+1	N/A
	11n(40MHz)	151/ 159	0+1	N/A
Peak Power Spectrum Density	a	149/ 157/ 165	0	Complies
	11n(20MHz)	149/ 157/ 165	0+1	Complies
	11n(40MHz)	151/ 159	0+1	Complies
Radiated Emission	a	149/ 157/ 165	0	N/A
	11n(20MHz)	157/ 165	0+1	N/A
	11n(40MHz)	151/ 159	0+1	N/A
Frequency Stability	11a	149/ 157/ 165	0/1	Complies
	11n(20MHz)	149/ 157/ 165	0/1	Complies
	11n(40MHz)	151/ 159	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 CheetahAccess Secure	Accton	AC-IG1104	N/A	DoC	Non-Shielded, 1.8m
2 USB 2.0 Flash Memory	Sony	USM2GJX	N/A	DoC	--
3 USB 2.0 Flash Memory	Sony	USM2GJX	N/A	DoC	--
4 Notebook PC	DELL	LATITUDE D400	GK43D1S	DoC	Non-Shielded, 1.7m, one ferrite core bonded
5 Notebook PC	DELL	LATITUDE D400	HK43D1S	DoC	Non-Shielded, 1.7m, one ferrite core bonded
6 Notebook PC	HP	HSTNN-146C	CNU8253S1X	DoC	Non-Shielded, 1.8m

### 1.4. Configuration of tested System



### 1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4
2	Execute the RT3x9x V1.5.6.7 AP and QA_RT3883-AP-V1.0.2.1 on the EUT
3	Configure the test mode, the test channel, and the data rate.
4	Press “Start TX” to start the continuous Transmitter.
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 Power Density (DSSS)	15 - 35	25
Humidity (%RH)		25 - 75	48
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. Power Density

### 2.1. Test Equipment

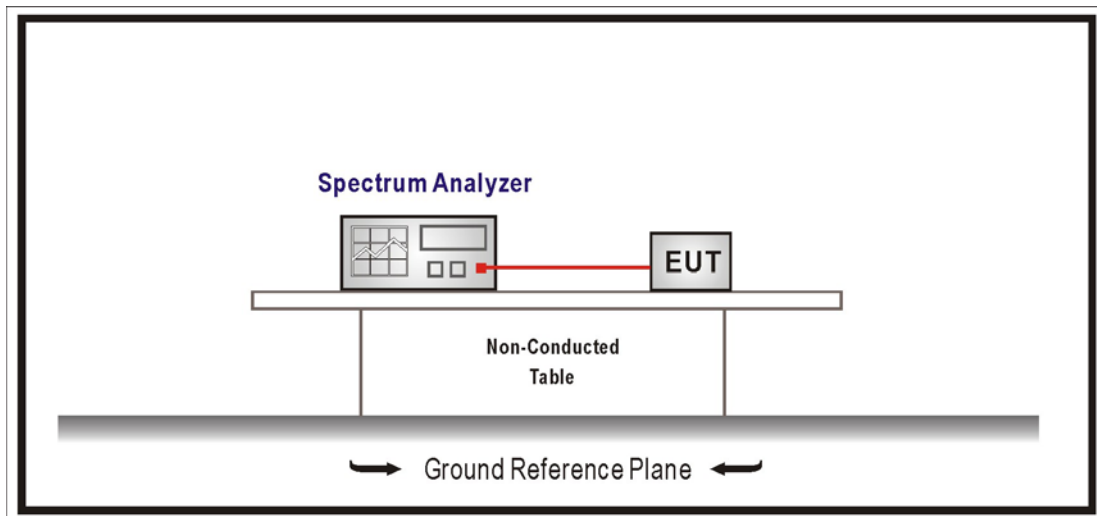
The following test equipments are used during the radiated emission tests:

Peak Power Spectrum Density / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23

Note: 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  $\pm 1.27$  dB

## 2.6. Test Result

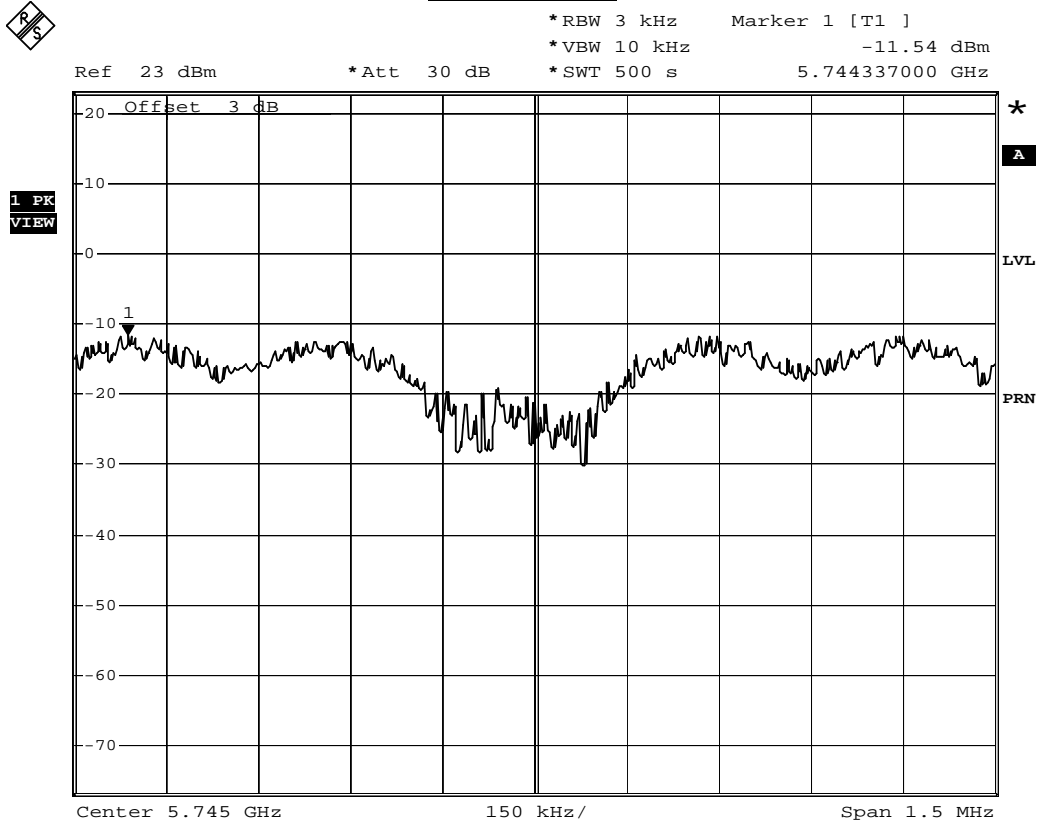
Product	Dual-band Gigabit Wireless-N Router		
Test Item	Peak Power Spectrum Density		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)		
Date of Test	2010/08/30	Test Site	SR7

IEEE 802.11a (ANT 0)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
149	5745	-11.54	10.678	≤ 30
157	5785	-13.96	8.258	≤ 30
165	5825	-13.71	8.508	≤ 30

Correct factor=10log(500kHz/3KHz)=22.218dB

Measure = Reading + correct factor

### Channel 149



Date: 30.AUG.2010 10:59:40

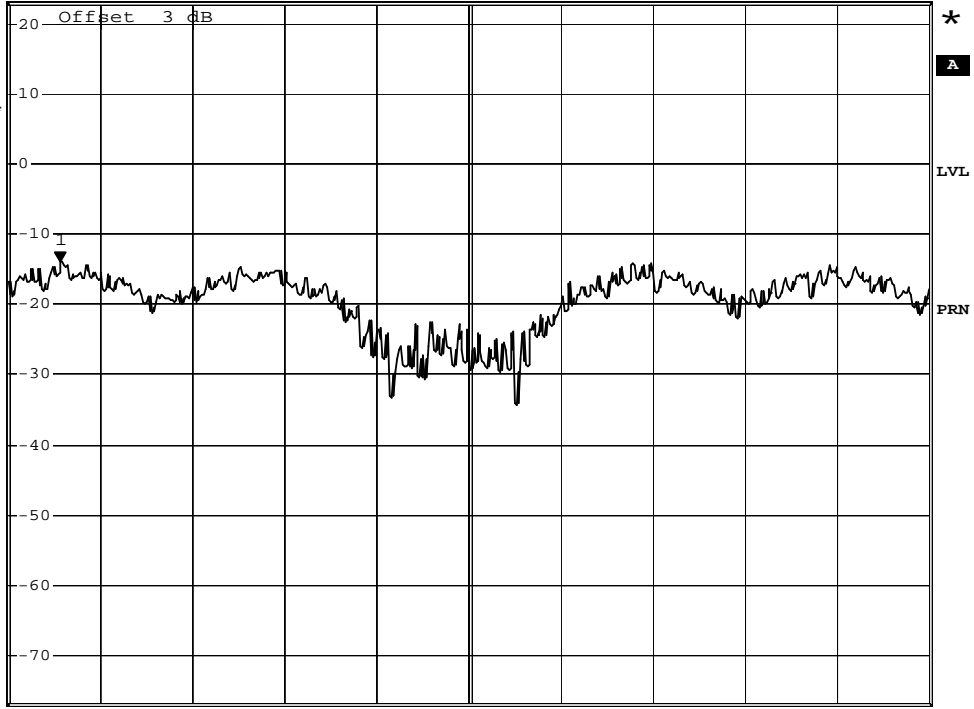
### Channel 157



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -13.96 dBm  
\*SWT 500 s      5.784334000 GHz

Ref 23 dBm      \*Att 30 dB

1 PK  
VIEW



Center 5.785 GHz      150 kHz/

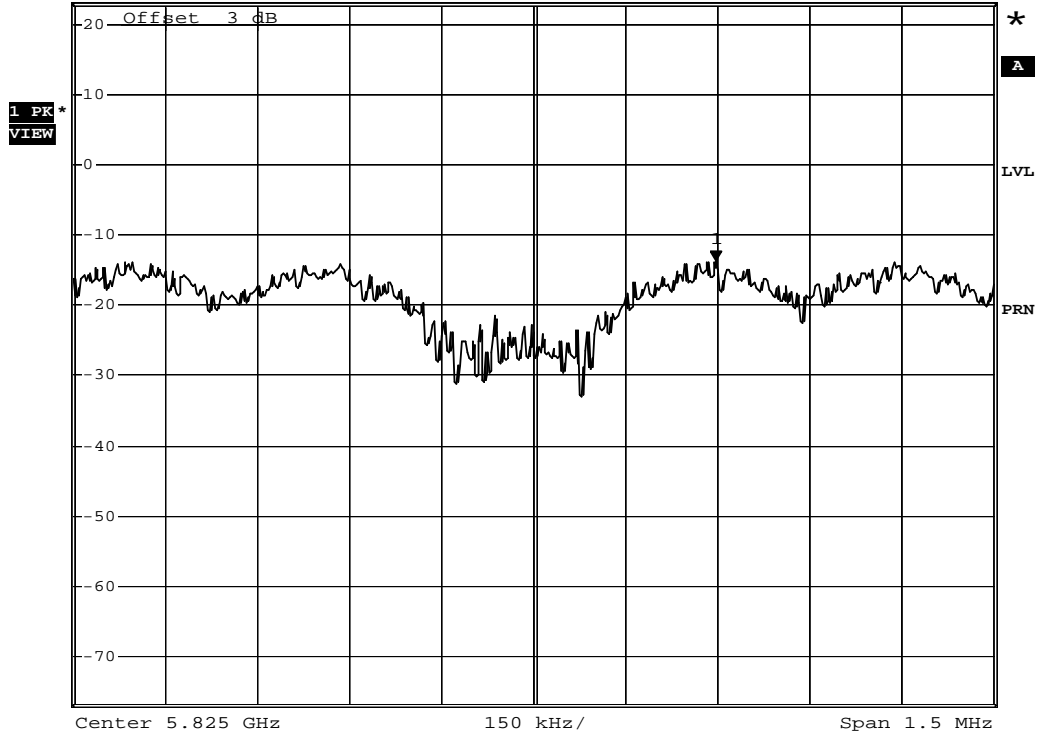
Date: 30.AUG.2010 11:03:05

### Channel 165



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -13.71 dBm  
\*SWT 500 s      5.825297000 GHz

Ref 23 dBm      \*Att 30 dB



Date: 30.AUG.2010 11:05:53

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Peak Power Spectrum Density		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)		
Date of Test	2010/08/30	Test Site	SR7

IEEE802.11n_20MHz_(ANT 0)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
149	5745	-14.38	7.838	≤ 30
157	5785	-17.04	5.178	≤ 30
165	5825	-17.20	5.018	≤ 30

Correct factor=10log(500kHz/3KHz)=22.218dB

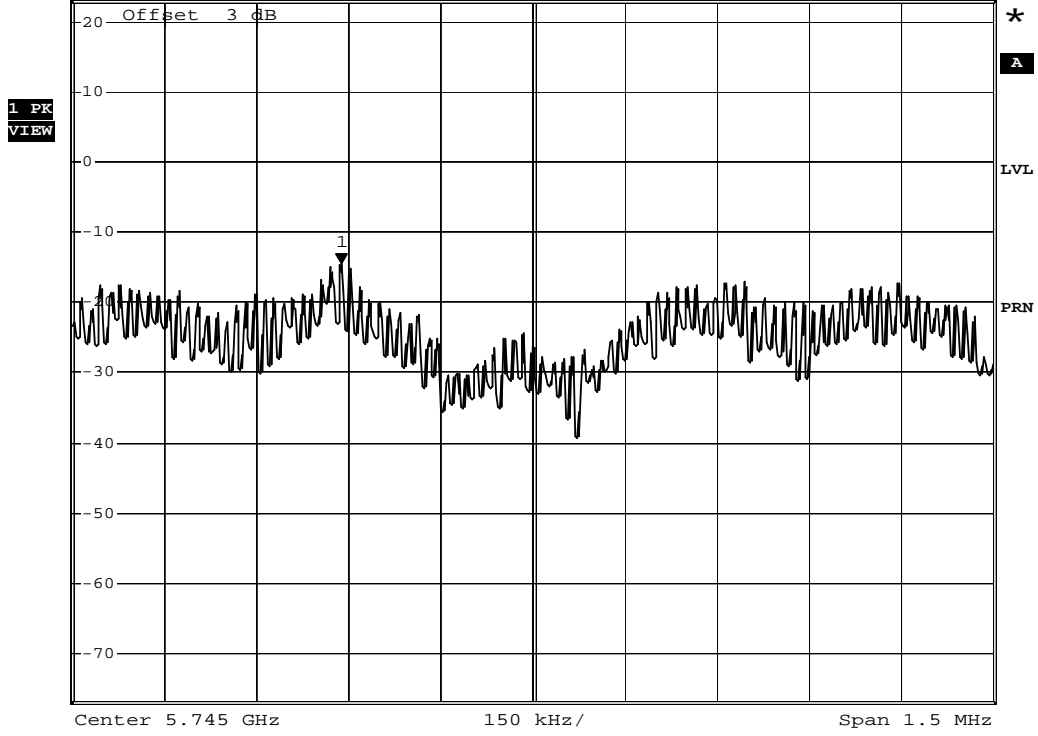
Measure = Reading + correct factor

### Channel 149



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -14.38 dBm  
\*SWT 500 s

Ref 23 dBm      \*Att 30 dB      5.744688000 GHz



Date: 30.AUG.2010 11:13:23

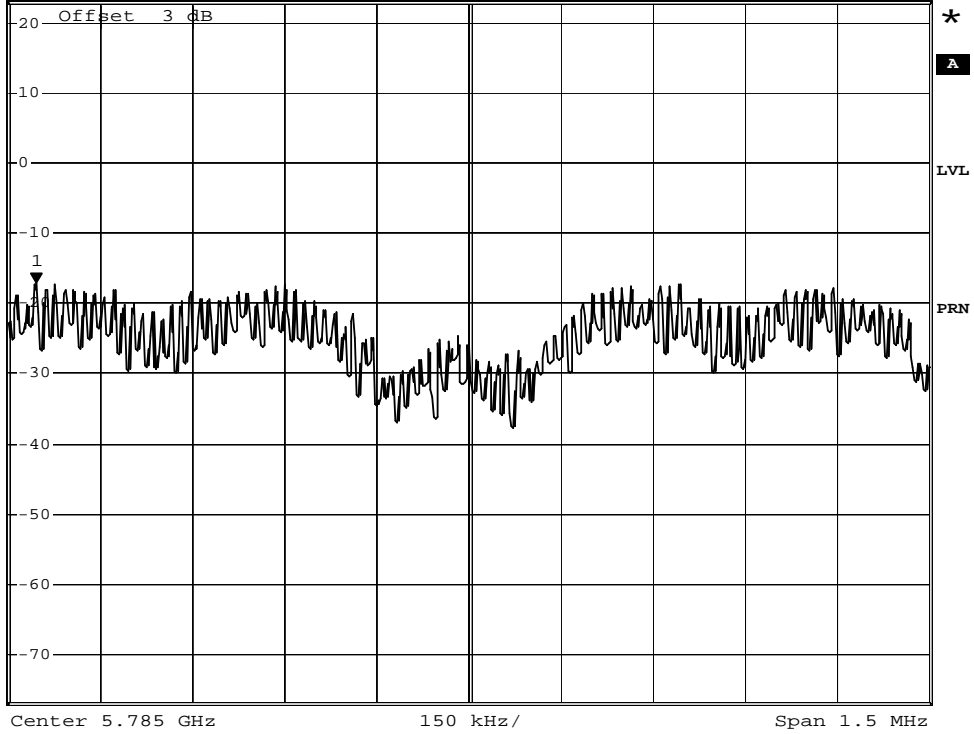
### Channel 157



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -17.04 dBm  
\*SWT 500 s      5.784295000 GHz

Ref 23 dBm      \*Att 30 dB

1 PK  
VIEW



Date: 30.AUG.2010 11:15:59

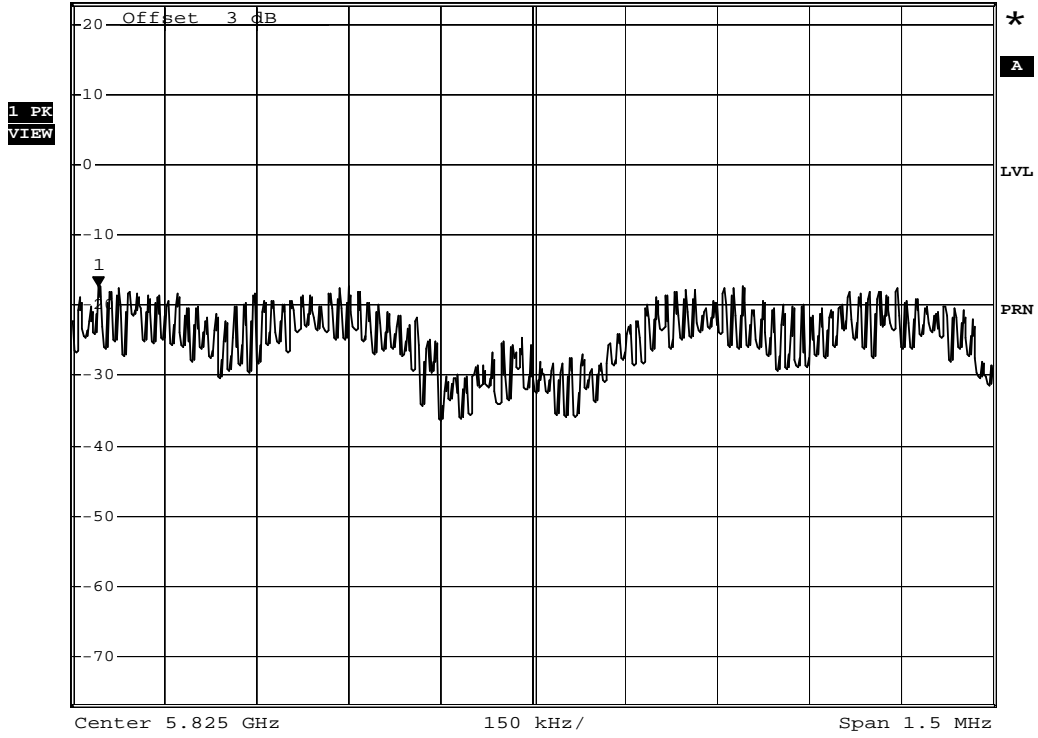


### Channel 165



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -17.20 dBm  
\*SWT 500 s      5.824292000 GHz

Ref 23 dBm      \*Att 30 dB



Date: 30.AUG.2010 11:32:22

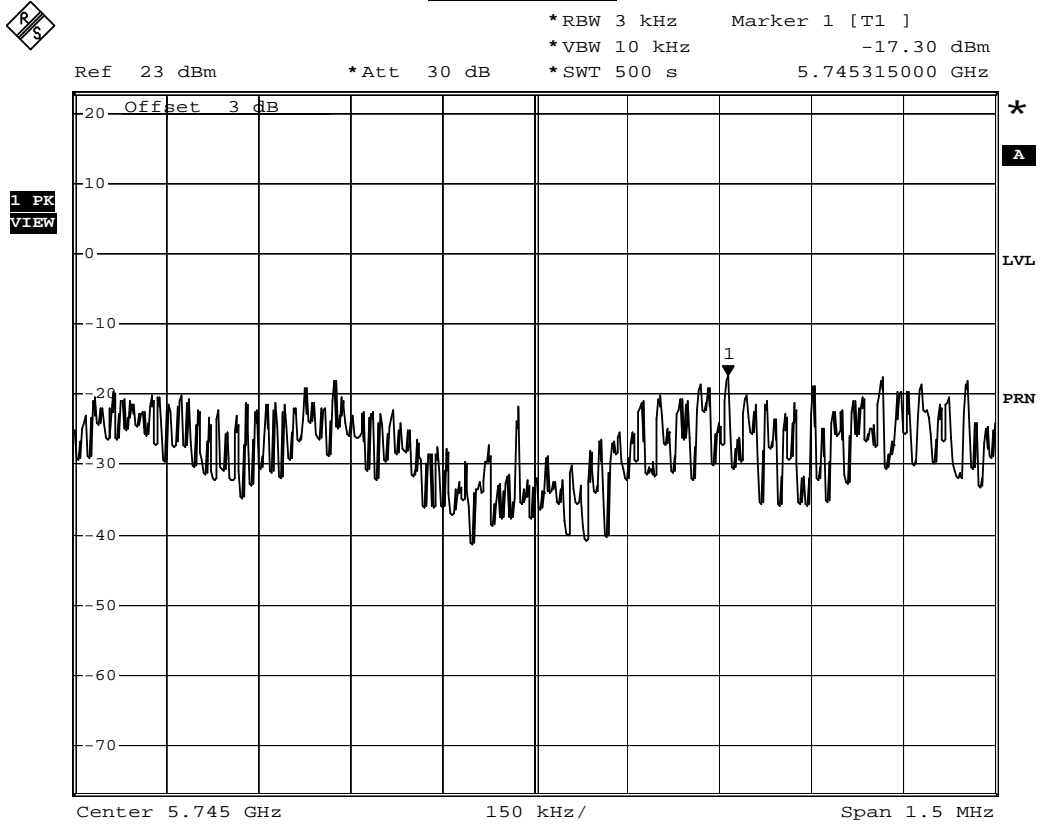
Product	Dual-band Gigabit Wireless-N Router		
Test Item	Peak Power Spectrum Density		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)		
Date of Test	2010/08/30	Test Site	SR7

IEEE802.11n_20MHz_(ANT 1)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
149	5745	-17.30	4.918	≤ 30
157	5785	-16.19	6.028	≤ 30
165	5825	-17.66	4.558	≤ 30

Correct factor=10log(500kHz/3KHz)=22.218dB

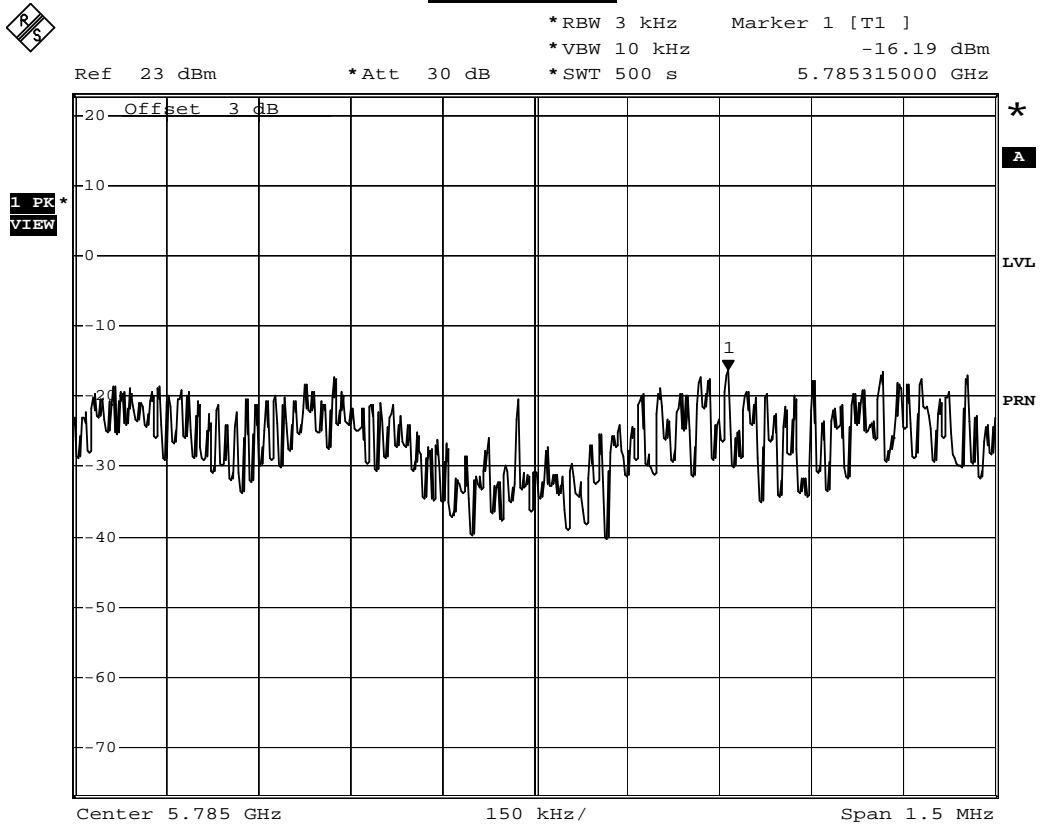
Measure = Reading + correct factor

### Channel 149



Date: 30.AUG.2010 12:10:15

### Channel 157



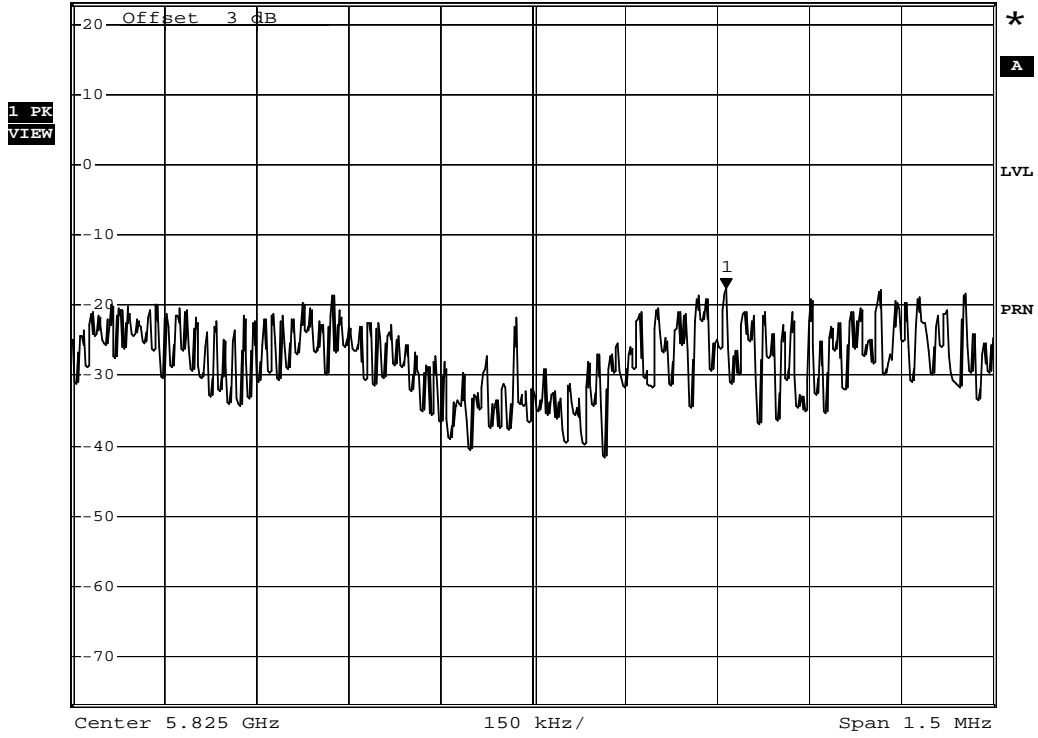
Date: 30.AUG.2010 13:02:30

### Channel 165



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -17.66 dBm  
\*SWT 500 s      5.825315000 GHz

Ref 23 dBm      \*Att 30 dB



Date: 30.AUG.2010 13:05:42

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Peak Power Spectrum Density		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)		
Date of Test	2010/08/30	Test Site	SR7

IEEE802.11n_20MHz_(ANT 0+1)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
149	5745	9.629	≤ 30
157	5785	8.634	≤ 30
165	5825	7.804	≤ 30

Correct factor= $10\log(500\text{kHz}/3\text{KHz})=22.218\text{dB}$

Measure = Reading + correct factor

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Peak Power Spectrum Density		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)		
Date of Test	2010/08/30	Test Site	SR7

IEEE 802.11n_40MHz (ANT 0)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
151	5755	-19.71	2.508	≤ 30
159	5795	-19.46	2.758	≤ 30

Correct factor=10log(500kHz/3KHz)=22.218dB

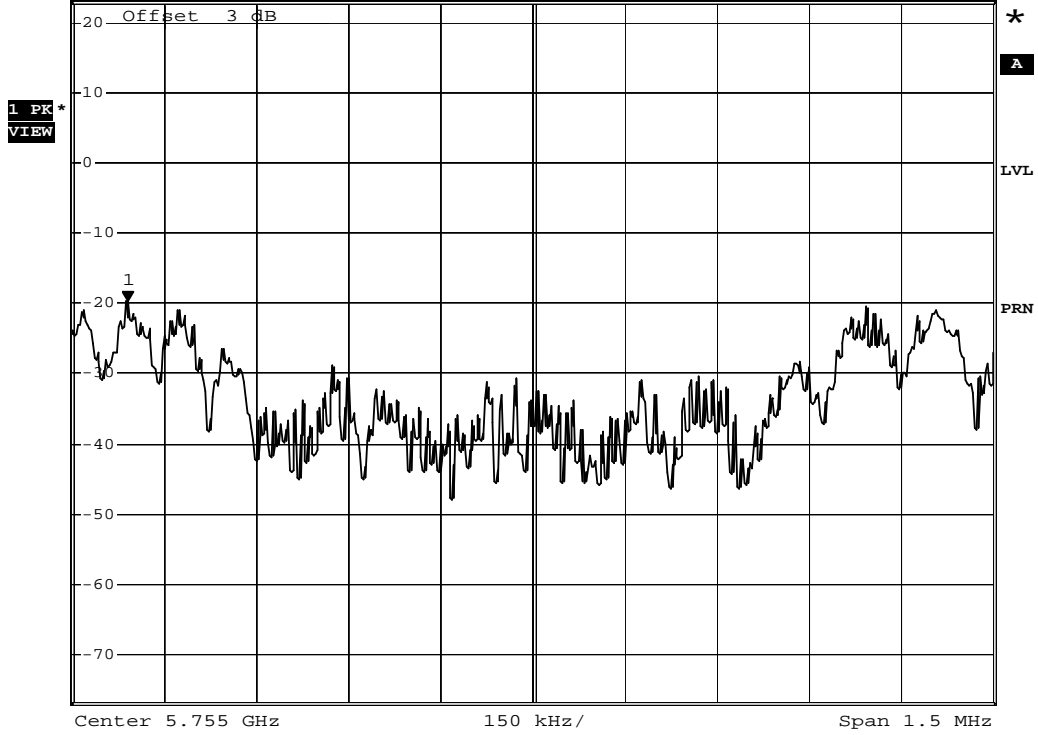
Measure = Reading + correct factor

### Channel 151



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -19.71 dBm  
\*SWT 500 s      5.754340000 GHz

Ref 23 dBm      \*Att 30 dB



Date: 30.AUG.2010 11:45:30



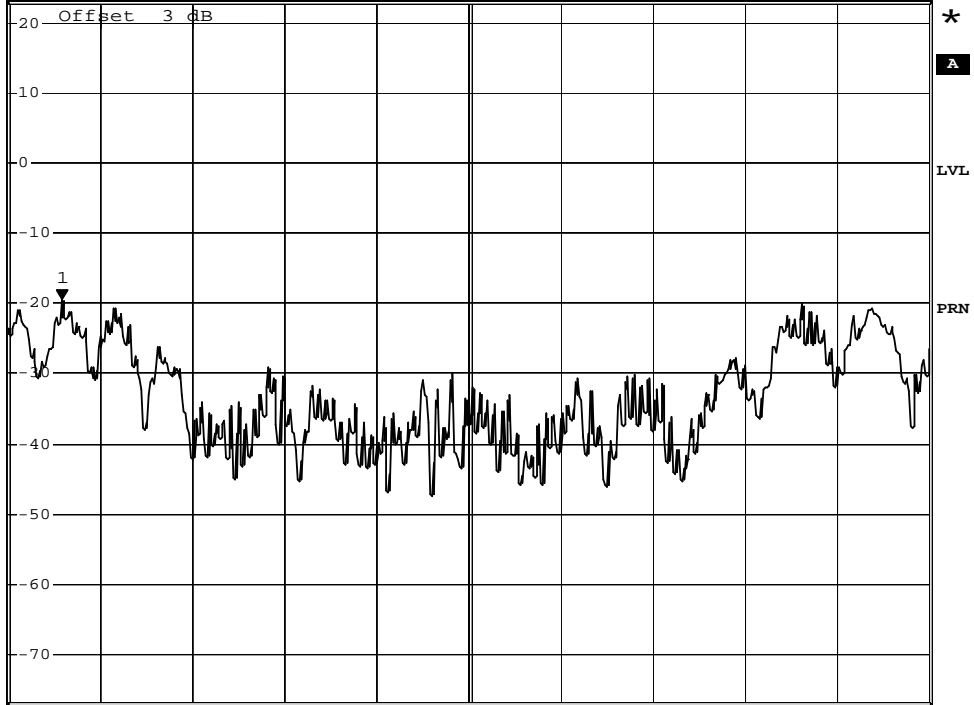
### Channel 159



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -19.46 dBm  
\*SWT 500 s      5.794337000 GHz

Ref 23 dBm      \*Att 30 dB

1 PK  
VIEW



Center 5.795 GHz      150 kHz/      Span 1.5 MHz

Date: 30.AUG.2010 11:51:34

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Peak Power Spectrum Density		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)		
Date of Test	2010/08/30	Test Site	SR7

IEEE 802.11n_40MHz (ANT 1)				
Channel No.	Frequency (MHz)	Reading Level (dBm)	Measure Level (dBm)	Limit (dBm)
151	5755	-19.82	2.398	≤ 30
159	5795	-20.43	-1.788	≤ 30

Correct factor=10log(500kHz/3KHz)=22.218dB

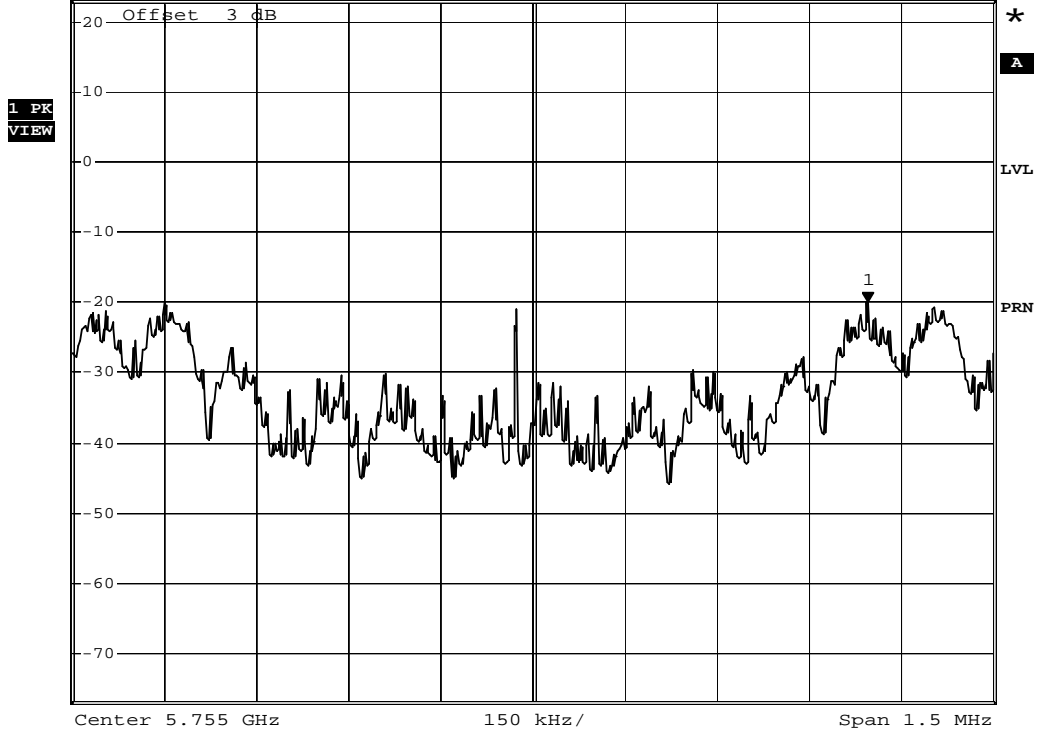
Measure = Reading + correct factor

### Channel 151



\*RBW 3 kHz      Marker 1 [T1 ]  
\*VBW 10 kHz      -19.82 dBm  
\*SWT 500 s      5.755546000 GHz

Ref 23 dBm      \*Att 30 dB



Date: 30.AUG.2010 13:08:46

### Channel 159

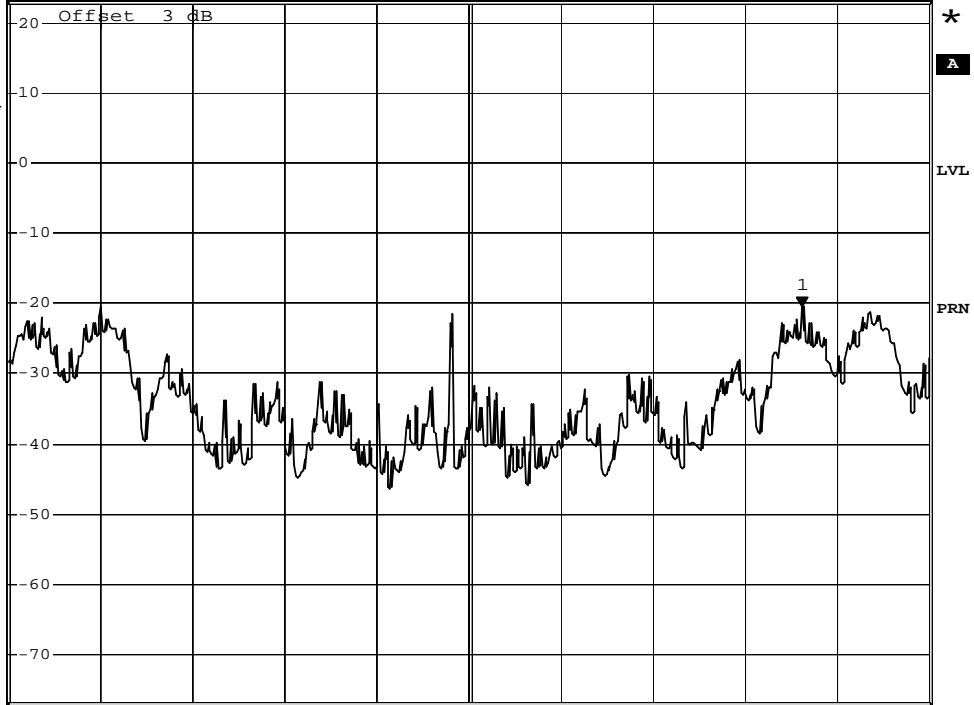


\*RBW 3 kHz      Marker 1 [T1]  
\*VBW 10 kHz      -20.43 dBm  
\*SWT 500 s      5.795543000 GHz

Ref 23 dBm

\*Att 30 dB

1 PK  
VIEW



Center 5.795 GHz

150 kHz/

Span 1.5 MHz

Date: 30.AUG.2010 13:11:41

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Peak Power Spectrum Density		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)		
Date of Test	2010/08/30	Test Site	SR7

IEEE802.11n_40MHz_(ANT 0+1)			
Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)
151	5755	5.464	≤ 30
159	5795	4.065	≤ 30

Correct factor=10log(500kHz/3KHz)=22.218dB

Measure = Reading + correct factor

### 3. Frequency Stability

#### 3.1. Test Equipment

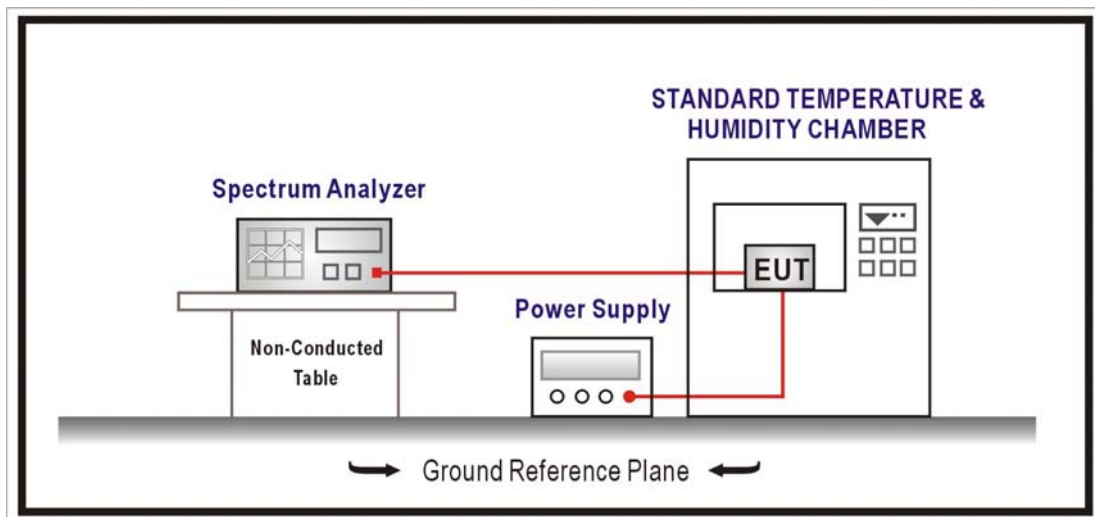
The following test equipments are used during the radiated emission tests:

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: 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  $\pm 150$  Hz

**3.6. Test Result**

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11a - 5745MHz, ANT 0		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5745.04581	7.9792	Pass
-10		5745.03610	6.2832	Pass
0		5745.02251	3.9181	Pass
10		5744.98034	-3.4220	Pass
20		5744.98829	-2.0375	Pass
30		5744.98481	-2.6442	Pass
40		5744.98473	-2.6578	Pass
50		5744.99441	-0.9728	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5744.99917	-0.1451	Pass
	120	5744.97900	-3.6551	Pass
	138	5744.99900	-0.1733	Pass

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11a - 5825MHz, ANT 0		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5825.01729	2.9737	Pass
-10		5825.01796	3.0831	Pass
0		5825.01209	2.0763	Pass
10		5824.98556	-2.4792	Pass
20		5824.99238	-1.3083	Pass
30		5824.97421	-4.4271	Pass
40		5824.97380	-4.4978	Pass
50		5824.99999	-0.0016	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5824.99853	-0.2518	Pass
	120	5824.97032	-5.0946	Pass
	138	5824.96391	-6.1963	Pass



Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11n_20M - 5745MHz, ANT 0		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5745.04411	7.6837	Pass
-10		5745.03134	5.4555	Pass
0		5745.00801	1.3951	Pass
10		5744.99300	-1.2179	Pass
20		5744.98077	-3.3478	Pass
30		5744.98943	-1.8396	Pass
40		5744.98538	-2.5449	Pass
50		5744.97930	-3.6040	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5744.99956	-0.0772	Pass
	120	5744.98864	-1.9772	Pass
	138	5744.95328	-8.1321	Pass

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11n_20M - 5825MHz, ANT 0		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5825.02355	4.0485	Pass
-10		5825.02123	3.6442	Pass
0		5825.00996	1.7097	Pass
10		5824.98760	-2.1288	Pass
20		5824.98980	-1.7504	Pass
30		5824.98838	-1.9945	Pass
40		5824.99186	-1.3967	Pass
50		5824.96410	-6.1636	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5824.99820	-0.3084	Pass
	120	5824.98454	-2.6538	Pass
	138	5824.98507	-2.5629	Pass

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11n_20M - 5745MHz, ANT 1		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5745.04808	8.3758	Pass
-10		5745.00091	0.1591	Pass
0		5745.00036	0.0621	Pass
10		5744.99270	-1.2700	Pass
20		5744.99807	-0.3363	Pass
30		5744.97664	-4.0660	Pass
40		5744.97227	-4.8269	Pass
50		5744.97278	-4.7377	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5744.99792	-0.3612	Pass
	120	5744.96790	-5.5871	Pass
	138	5744.99721	-0.4850	Pass

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_ 802.11n_20M - 5825MHz, ANT 1		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5825.04463	7.6679	Pass
-10		5825.00953	1.6359	Pass
0		5825.01358	2.3315	Pass
10		5824.98104	-3.2545	Pass
20		5824.99459	-0.9279	Pass
30		5824.97707	-3.9373	Pass
40		5824.98341	-2.8472	Pass
50		5824.96949	-5.2378	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5824.99847	-0.2632	Pass
	120	5824.95680	-7.4156	Pass
	138	5824.99691	-0.5312	Pass

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11n_40M - 5755MHz, ANT 0		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5755.03064	5.3299	Pass
-10		5755.03328	5.7826	Pass
0		5755.02771	4.8144	Pass
10		5754.98977	-1.7780	Pass
20		5754.98260	-3.0237	Pass
30		5754.97603	-4.1659	Pass
40		5754.98093	-3.3138	Pass
50		5754.98056	-3.3781	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5754.99802	-0.3441	Pass
	120	5754.97090	-5.0572	Pass
	138	5754.99771	-0.3986	Pass

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11n_40M - 5795MHz, ANT 0		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5795.00748	1.2962	Pass
-10		5795.00844	1.4563	Pass
0		5795.01852	3.1961	Pass
10		5794.98047	-3.3694	Pass
20		5794.99122	-1.5156	Pass
30		5794.98775	-2.1140	Pass
40		5794.94167	-10.0654	Pass
50		5794.99780	-0.3805	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5794.99763	-0.4096	Pass
	120	5794.96525	-5.9958	Pass
	138	5794.98151	-3.1909	Pass

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11n_40M - 5755MHz, ANT 1		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5755.00624	1.0900	Pass
-10		5755.01994	3.4650	Pass
0		5755.00625	1.0852	Pass
10		5754.99838	-0.2808	Pass
20		5754.98074	-3.3462	Pass
30		5754.97075	-5.0818	Pass
40		5754.98452	-2.6899	Pass
50		5754.96901	-5.3852	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5754.99788	-0.3686	Pass
	120	5754.99067	-1.6206	Pass
	138	5754.98097	-3.3065	Pass

Product	Dual-band Gigabit Wireless-N Router		
Test Item	Frequency Stability		
Test Mode	Mode 1: Transmit (Adapter: DVE_DSA-24PFD-15 FUS 120200)_802.11n_40M - 5795MHz, ANT 1		
Date of Test	2016/5/6	Test Site	SR7

Temperature Interval (oC)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
-20	120	5795.02991	5.1668	Pass
-10		5795.02952	5.0948	Pass
0		5795.00576	0.9935	Pass
10		5794.99710	-0.5005	Pass
20		5794.99755	-0.4230	Pass
30		5794.97961	-3.5185	Pass
40		5794.99060	-1.6222	Pass
50		5794.98612	-2.3944	Pass

Temperature Interval (°C)	AC Voltage (V)	Frequency (MHz)	Deviation (ppm)	Result
25	102	5794.99965	-0.0599	Pass
	120	5794.98764	-2.1335	Pass
	138	5794.98570	-2.4674	Pass



## Attachment 1

- **Original Report**