

# 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, R.O.C.

Date of Receipt : May 09, 2016

Issued Date : May 13, 2016

Report No. : 1650243R-RFUSP56V00

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





Product Name : Dual-band Gigabit Wireless-N Router  
 Applicant : ASUSTeK COMPUTER INC.  
 Address : 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.  
 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 : CC CFR Title 47 Part 15 Subpart C 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 :   
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 ( Carol Tsai / Senior Engineering Adm. Specialist )

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 \_\_\_\_\_  
 ( JuBo Shen / Senior Engineer )

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

**Revision History**

<b>Report No.</b>	<b>Version</b>	<b>Description</b>	<b>Issued Date</b>
107269R-RFUSP42V01	V1.0	Initial issue of report	Sep. 30, 2010
1650243R-RFUSP56V00	V1.0	Update WLAN 5G band 1 standard to FCC 15.407.	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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## 1. General Information

### 1.1. EUT Description

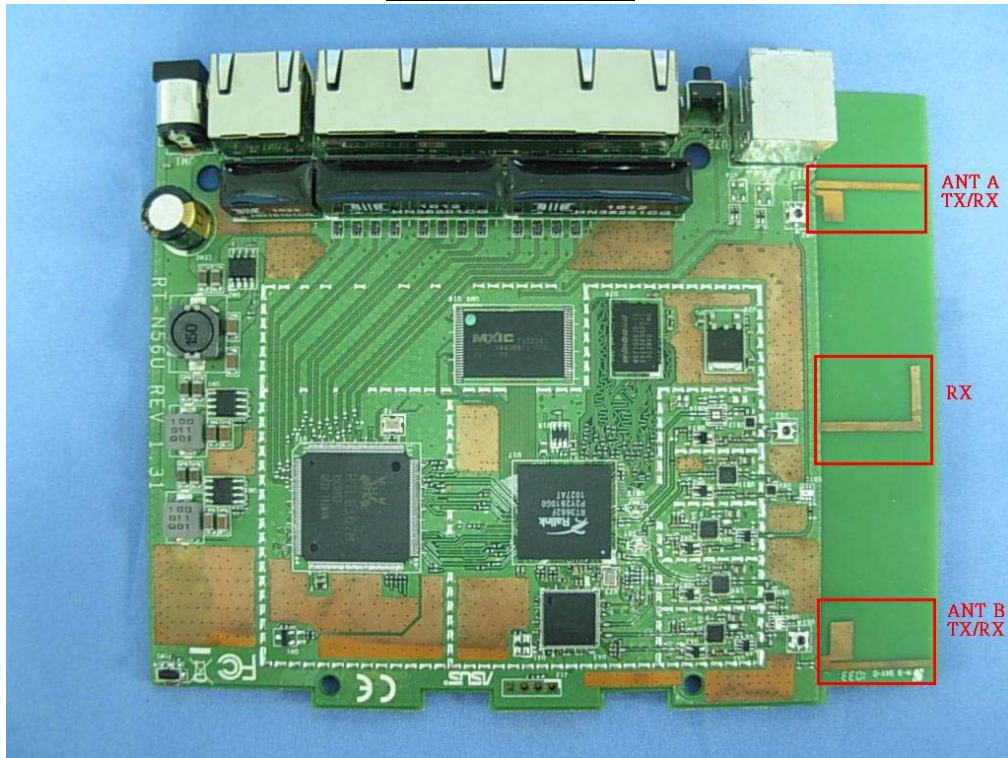
Product Name	Dual-band Gigabit Wireless-N Router
Product Type	WLAN (2TX, 3RX)
Trade Name	ASUS
Model No.	RT-N56U
Frequency Range -IEEE 802.11a & IEEE 802.11n (20MHz)	5180~5240MHz
Frequency Range-IEEE 802.11n (40MHz)	5190~5230MHz
Channel Number - IEEE 802.11a & IEEE 802.11n (20MHz))	4
Channel Number-IEEE 802.11n (40MHz)	2
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
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	5.1dBi
Channel Control	Manual
Antenna Type	CB Antenna

Component	
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	
Mode/ Channel Bandwidth	20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
IEEE802.11a	✓				✓	
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>BPSC</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
36	5180MHz	40	5200MHz	44	5220MHz	48	5240MHz

IEEE 802.11n (40MHz)

Working Frequency of Each Channel			
Channel	Frequency	Channel	Frequency
38	5190MHz	46	5230MHz

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. These test results on a sample of the device are for the purpose of demonstrating Compliance with Part 15 Subpart C Paragraph 15.407.
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. 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 & 5.8GHz transmitting is measured and makes a test report of the report number: 107261R-RFUSP42V01 & 1650232R-RFUSP42V00-A.
6. 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.
7. For this project, this device no increase power level, so update WLAN 5G band 1 standard to FCC 15E new rule without any tested.

## Attachment 1

- **Original Report**