

FCC Test Report

Product Name : Dual-band Wireless-AC600 USB Adapter
Trade Name : ASUS
Model No. : USB-AC51
FCC ID. : MSQUSBAC51

Applicant : ASUSTeK COMPUTER INC.

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

Date of Receipt : Feb. 01, 2016

Issued Date : Apr. 18, 2016

Report No. : 1620123R-RFUSP54V00

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 : Apr. 18, 2016

Report No. : 1620123R-RFUSP54V00

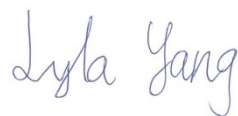


Product Name : Dual-band Wireless-AC600 USB Adapter
Applicant : ASUSTeK COMPUTER INC.
Address : 4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan
Manufacturer : ASUSTeK COMPUTER INC.
Model No. : USB-AC51
FCC ID. : MSQUSBAC51
EUT Voltage : DC 5V(Power by PC)
Testing Voltage : DC 5V(Power by PC)
Trade Name : ASUS
Applicable Standard : FCC CFR Title 47 Part 15 Subpart E Section 15.407: 2014
ANSI C63.10: 2013
Test Lab : QuieTek Hsin Chu Laboratory
Test Result : Complied

The test results relate only to the samples tested.

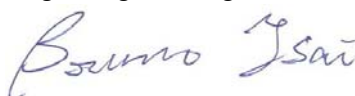
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Documented By :



(Lyla Yang / Engineering Adm. Assistant)

Reviewed By :



(Bruno Tsai / Engineer)

Approved By :



(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
137219R-RFUSP46V01	V2.0	Initial issue of report	Dec. 04, 2013
1620123R-RFUSP54V00	V1.0	Update WLAN 5G band 1 standard to FCC 15E new rule.	Apr. 18, 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

TABLE OF CONTENTS

Description	Page
1. General Information.....	6
1.1. EUT Description.....	6
Attachment 1	11
Original Report.....	11

1. General Information

1.1. EUT Description

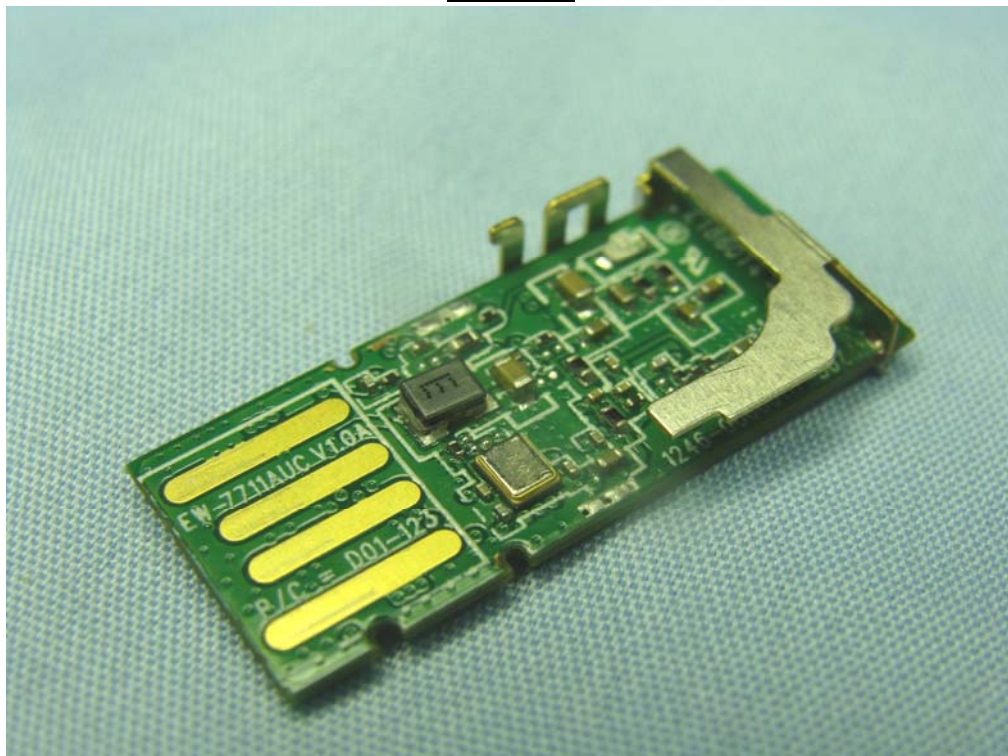
Product Name	Dual-band Wireless-AC600 USB Adapter	
Product Type	WLAN(1TX,1RX)	
Trade Name	ASUS	
Model No.	USB-AC51	
Frequency Range/ Channel Number	IEEE 802.11a/ IEEE 802.11n (20MHz) / IEEE 802.11ac (20MHz)	5180~5240MHz / 4 Channels
	IEEE 802.11n (40MHz) / IEEE 802.11ac (40MHz)	5190~5230MHz / 2 Channels
	IEEE 802.11ac (80MHz)	5210~5210MHz / 1 Channel
Type of Modulation	IEEE 802.11a/n	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 7 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	
Antenna Type	PIFA Antenna
Antenna Gain	4.56dBi

ANT-TX / RX & Bandwidth

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

1TX /1RX



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

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

Draft 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

IEEE 802.11a & IEEE 802.11n (20MHz) & IEEE 802.11ac (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) & IEEE 802.11ac (40MHz)

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

IEEE 802.11ac (80MHz)

Working Frequency of Each Channel	
Channel	Frequency
42	5210MHz

Note:

1. This device is a Dual-band Wireless-AC600 USB Adapter including 2.4GHz b/g/n and 5GHz a/n/ac (1x1) 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 E Paragraph 15.407.
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. The function of the 2.4GHz and 5.8GHz transmitting is measured and makes a test report of the report number: 137219R-RFUSP42V01 and 1620123R-RFUSP57V00.
5. This device has USB and Ethernet ports, which can be connected to computer. The receiving function receiving was tested and its test report number is 137219R-RFUSP37V02 under Declaration of Conformity.
6. 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**