FCC 47 CFR PART 15 SUBPART C: 2014 AND ANSI C63.10: 2013

TEST REPORT (Class II Permissive Change Report)

For

Micro Wireless Router

Model: BRE70n

Brand: Amigo

Issued for

Amigo Technology Inc.

No. 82, Gongye 2nd Road, Annan Dist., Tainan City 709, Taiwan (R.O.C.)

Issued by

Compliance Certification Services Inc.
Tainan Lab.
No.8,Jiucengling, Xinhua Dist., Tainan City 712, Taiwan (R.O.C.)

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REVISION HISTORY

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	August 21, 2018	See the following note rev.00	ALL	Gina Lin

Note:

※ *Rev.00: Revised Class II Permissive Change Report and the description is shown in page 7. (2.2 DESCRIPTION OF CLASS II CHANGE)*

TABLE OF CONTENTS

1. TEST REPORT CERTIFICATION 4
2. EUT DESCRIPTION 5
2.1 DESCRIPTION OF EUT & POWER 5
2.2 DESCRIPTION OF CLASS II CHANGE 6
3. DESCRIPTION OF TEST MODES 7
4. TEST METHODOLOGY 8
5. FACILITIES AND ACCREDITATIONS 8
5.1 FACILITIES 8
5.2 EQUIPMENT 8
5.3 LABORATORY ACCREDITATIONS LISTINGS 8
5.4 TABLE OF ACCREDITATIONS AND LISTINGS 9
6. CALIBRATION AND UNCERTAINTY 10
6.1 MEASURING INSTRUMENT CALIBRATION 10
6.2 MEASUREMENT UNCERTAINTY 10
7. SETUP OF EQUIPMENT UNDER TEST 11
7.1 SETUP CONFIGURATION OF EUT 11
7.2 SUPPORT EQUIPMENT 11
7.3 EUT OPERATING CONDITION 12
8. APPLICABLE LIMITS AND TEST RESULTS 13
8.1 RADIATED EMISSIONS 13
8.1.1 TRANSMITTER RADIATED SUPURIOUS EMSSIONS 13
8.1.2 WORST-CASE RADIATED EMISSION BELOW 1 GHz 18
8.1.3 TRANSMITTER RADIATED EMISSION ABOVE 1 GHz 20
APPENDIX SETUP PHOTOS 32

1. TEST REPORT CERTIFICATION

Applicant	:	**Amigo Technology Inc.** No. 82, Gongye 2nd Road, Annan Dist., Tainan City 709, Taiwan (R.O.C.)
Manufacturer	:	**Sapido Technology Inc.** No. 82, Gongye 2nd Road, Annan Dist., Tainan City 709, Taiwan (R.O.C.)
Equipment Under Test	:	Micro Wireless Router
Model	:	BRE70n
Brand	:	Amigo
Date of Test	:	August 01, 2018

APPLICABLE STANDARD	
STANDARD	**TEST RESULT**
FCC Part 15 Subpart C: 2014 AND ANSI C63.10: 2013	No non-compliance noted

Approved by: ***Reviewed by:***

Jeter Wu
Assistant Manager

Eric Huang
Section Manager

2. EUT DESCRIPTION

2.1 DESCRIPTION OF EUT & POWER

Product Name	Micro Wireless Router
Model	BRE70n
Brand	Amigo
Received Date	November 27, 2012
Frequency Range	IEEE 802.11b/g, 802.11n HT20 (DTS Band):2412MHz~2462MHz IEEE 802.11n HT40 (DTS Band):2422MHz~2452MHz
Transmit Power	IEEE 802.11b Mode : 21.31dBm (DTS Band) (135.2mW) IEEE 802.11g Mode : 24.76dBm (DTS Band) (299.2mW) IEEE 802.11n HT20 Mode : 25.10dBm (DTS Band) (323.6mW) IEEE 802.11n HT40 Mode : 24.85dBm (DTS Band) (305.5mW)
Channel Spacing	IEEE 802.11b/g, 802.11n HT20/HT40: 5MHz
Channel Number	IEEE 802.11b/g, 802.11n HT20:11 Channels IEEE 802.11n HT40 :7 Channels
Transmit Data Rate	IEEE 802.11b：11, 5.5, 2, 1 Mbps IEEE 802.11g：54, 48 ,36, 24, 18, 12, 9, 6 Mbps IEEE 802.11n HT20 : 72.2, 65, 57.8, 43.3, 28.9, 21.7, 14.4, 13, 7.2, 6.5 Mbps IEEE 802.11n HT40 : 150, 135, 120, 90, 60, 45, 30, 27, 15, 13 Mbps
Type of Modulation	IEEE 802.11b：DSSS (CCK, DQPSK, DBPSK)
	IEEE 802.11g：OFDM (64QAM, 16QAM, QPSK, BPSK)
	IEEE 802.11n HT20/40：OFDM (64QAM, 16QAM, QPSK, BPSK)
Frequency Selection	By software / firmware
Antenna Type	**Antenna (1Tx1Rx)** Manufacturer: Master Wave Technology Co.,LTD Type: 2.4G PIFA BRE70N Model: 902P0074N0 Gain: 3.88dBi
Power Source	5Vdc
Temperature Range	0 ~ +55°C

Power Adapter :

No.	Manufacturer	Model No.	Power Input	Power Output
1	Amigo	AMS47-0500600FU	100-240Vac, 50/60Hz, 0.2A	5Vdc, 0.6A

REMARK:

1. *The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.*
2. *This submittal(s) (test report) is intended for FCC ID: **RC6-BRE70N** filing to comply with Section 15.207,15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*
3. *For more details, please refer to the User's manual of the EUT.*
4. *To add a series model is for business necessary. The different of the each model is shown as below:*

Multiple List:

Company Name/Address	Brand name	Model	Product Name
Amigo Technology Inc. No. 82, Gongye 2nd Road, Annan Dist., Tainan City 709, Taiwan (R.O.C.)	Amigo	BRE70n BRE71n	Micro Wireless Router Micro Wireless Router - All Broadband
Sapido Technology Inc. No. 82, Gongye 2nd Road, Annan Dist., Tainan City 709, Taiwan (R.O.C.)	SAPIDO	BRE70n BRE71n	Micro Wireless Router Micro Wireless Router - All Broadband

2.2 DESCRIPTION OF CLASS II CHANGE

The major change filed under this application is:
Only updated the RAD(Above&Below 1GHz) test data is modified for the existing standards.

The above changes not influence the RF characteristics. Since the above modification was not influence the RF characteristics. After authenticated, the testing items of the data were showed as original application document reports (report number: T121127N41-RP1)

3. DESCRIPTION OF TEST MODES

The EUT is a Micro Wireless Router. It has one transmitter chains and one receive chains (1x1 configurations). The 1x1 configuration is implemented with one outside chains (Chain 0).

The RF chipset is manufactured by Realtek Technology, Corp.

The antenna peak gain 3.88dBi (highest gain) were chosen for full testing.

IEEE 802.11 b ,802.11g ,802.11n HT20 mode (DTS Band)

The EUT had been tested under operating condition.

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode: 1Mbps long data rate (worst case) were chosen for full testing.

IEEE 802.11g mode: 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT20 mode: 6.5Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT40 mode (DTS Band)

The EUT had been tested under operating condition.

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2422
Middle	2437
High	2452

IEEE 802.11n HT40 mode: 13Mbps data rate (worst case) were chosen for full testing.

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD, peak power and average power across all the data rates, bandwidths, modulations and spatial stream modes.

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10 and FCC CFR 47 15.207, 15.209 and 15.247.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at No.8,Jiucengling, Xinhua Dist., Tainan City 712, Taiwan (R.O.C.)

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

5.3 LABORATORY ACCREDITATIONS LISTINGS

The test facilities used to perform radiated and conducted emissions tests are accredited by Taiwan Accreditation Foundation for the specific scope of accreditation under Lab Code: 1109 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by TAF or any agency of the Government. In addition, the test facilities are listed with Federal Communications Commission (registration no: TW-1109).

5.4 TABLE OF ACCREDITATIONS AND LISTINGS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

Taiwan	TAF

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Germany	TUV NORD
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, http://www.ccsrf.com

6. CALIBRATION AND UNCERTAINTY

6.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

6.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

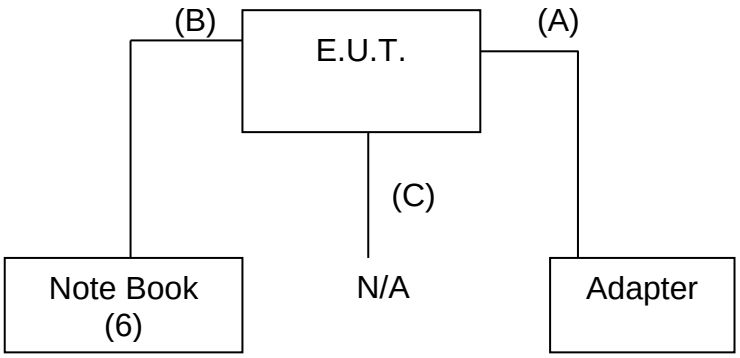
Parameter	Uncertainty
Radiated Emission, 30 to 200 MHz Test Site : OATS-6	±3.21dB
Radiated Emission, 200 to 1000 MHz Test Site : OATS-6	±3.09dB
Radiated Emission, 1 to 8 GHz	± 2.65dB
Radiated Emission, 8 to 18 GHz	± 2.66dB
Radiated Emission, 18 to 26.5 GHz	± 2.65dB
Radiated Emission, 26 to 40 GHz	± 3.03dB
Power Line Conducted Emission	±1.91dB
Band Width	136.49kHz
Peak Output Power MU	±1.34dB
Band Edge MU	±0.30dBuV
Channel Separation MU	361.69Hz
Duty Cycle MU	0.064ms
Frequency Stability MU	0.223kHz

Uncertainty figures are valid to a confidence level of 95%, K=2

7. SETUP OF EQUIPMENT UNDER TEST

7.1 SETUP CONFIGURATION OF EUT

RF Test Setup:



7.2 SUPPORT EQUIPMENT

RF test

No.	Product	Manufacturer	Model No.	Certify No.	Signal cable
1.	Note Book	Acer	AS 3830TG	DOC	Power cable, unshd, 1.6m

No.	Signal cable description	
A	Power	Unshielded, 1.2m, 1pcs.
B	LAN	Unshielded, 10m, 1pcs.
C	LAN	Unshielded, 1m, 1pcs.

REMARK:
1. All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

7.3 EUT OPERATING CONDITION

RF Setup

1. Set up all computers like the setup diagram.
2. The “MP_TEST” software was used for testing

TX Mode:

- ⇨ **Tx Mode:CCK 、OFDM、 HT MixMode** (Bandwidth: 20、40)
- ⇨ **Tx Data Rate: 1Mbps long** (IEEE 802.11b mode ,chain A TX)
  6Mbps (IEEE 802.11g mode ,chain A TX)
  6.5Mbps (IEEE 802.11n HT20 mode ,chain A TX)
  13 Mbps (IEEE 802.11n HT40 mode, chain A TX**)**

Power control mode

Target Power: IEEE 802.11b Channel Low (2412MHz) = **50 (Chain A)**
IEEE 802.11b Channel Middle (2437MHz) = **49 (Chain A)**
IEEE 802.11b Channel High (2462MHz) = **49 (Chain A)**
Target Power: IEEE 802.11g Channel Low (2412MHz) = **58 (Chain A)**
IEEE 802.11g Channel Middle (2437MHz) = **53 (Chain A)**
IEEE 802.11g Channel High (2462MHz) = **48 (Chain A)**
Target Power: IEEE 802.11n HT20 Channel Low (2412MHz) = **58 (Chain A)**
IEEE 802.11 n HT20 Channel Middle (2437MHz) = **53 (Chain A)**
IEEE 802.11 n HT20 Channel High (2462MHz) = **47 (Chain A)**
Target Power: IEEE 802.11n HT40 Channel Low (2422MHz) = **58 (Chain A)**
IEEE 802.11 n HT40 Channel Middle (2437MHz) = **53 (Chain A)**
IEEE 802.11 n HT40 Channel High (2452MHz) = **48 (Chain A)**

RX Mode：

Test Item packets RX
Start RX

3. All of the function are under run.
4. Start test.

Normal Link Setup

1. Set up all computers like the setup diagram.
2. All of the function are under run.
3. Notebook PC (2) ping 192.168.0.10 –t to Notebook PC (1).
4. Notebook PC (1) ping 192.168.0.20 –t to Notebook PC (2).
5. Notebook PC (1) ping 192.168.0.50 –t to Wireless Access Point(3).

Start test.

8. APPLICABLE LIMITS AND TEST RESULTS

8.1 RADIATED EMISSIONS

8.1.1 TRANSMITTER RADIATED SUPURIOUS EMSSIONS

LIMITS

§ 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 -1710	10.6 -12.7
6.26775 - 6.26825	108 -121.94	1718.8 - 1722.2	13.25 -13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 – 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 -16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	([2])
13.36 - 13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

§ 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown is Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§ 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz, However, operation within these frequency bands is permitted under other sections of this Part, e-g, Sections 15.231 and 15.241.

§ 15.209 (b) In the emission table above, the tighter limit applies at the band edges.

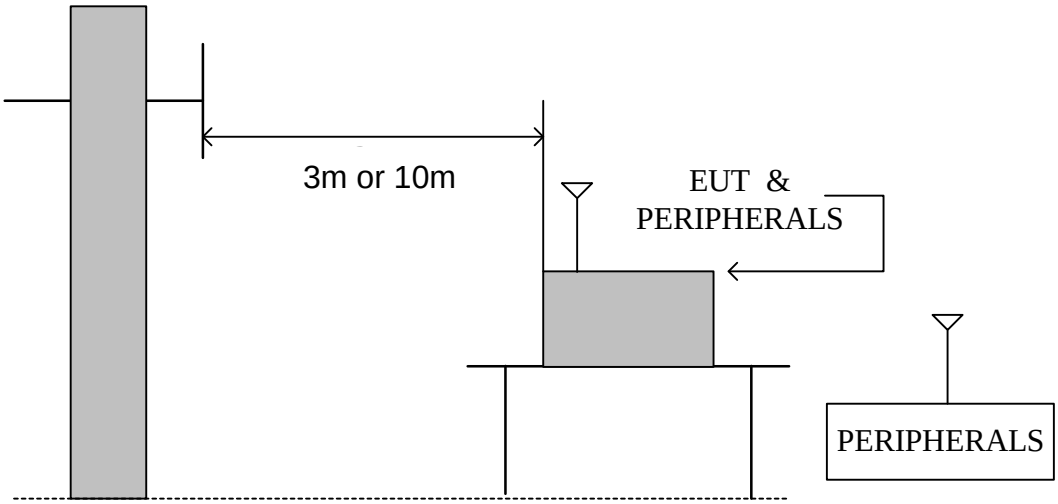
TEST EQUIPMENTS

The following test equipments are utilized in making the measurements contained in this report.

Chamber Room #966					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Active Loop Antenna	ETS-LINDREN	6502	8905-2356	07/20/2017	07/19/2019
Amplifier	HP	8447F	2443A01671	01/22/2018	01/21/2019
Bi-Log Antenna	Sunol	JB1	A070506-2	02/09/2018	02/08/2019
Cable	Rosnol+Suhner	SUCOFLEX 104PEA	SN25737 /4PEA	01/27/2018	01/26/2019
Double Ridged Guide Horn Antenna	ETS-LINDGREN	3116	00078900	03/20/2017	03/19/2019
EMI Test Receiver	R&S	ESCI	100960	10/31/2017	10/30/2018
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY54430216	07/05/2018	07/04/2019
Hi-Pass Filter	MICRO-TRONICS	BRM50702-01	018	01/22/2018	01/21/2019
Horn Antenna	Com-Power	AH-118	071032	04/19/2018	04/18/2019
Pre-Amplifier	EMCI	EMC012645	980098	01/22/2018	01/21/2019

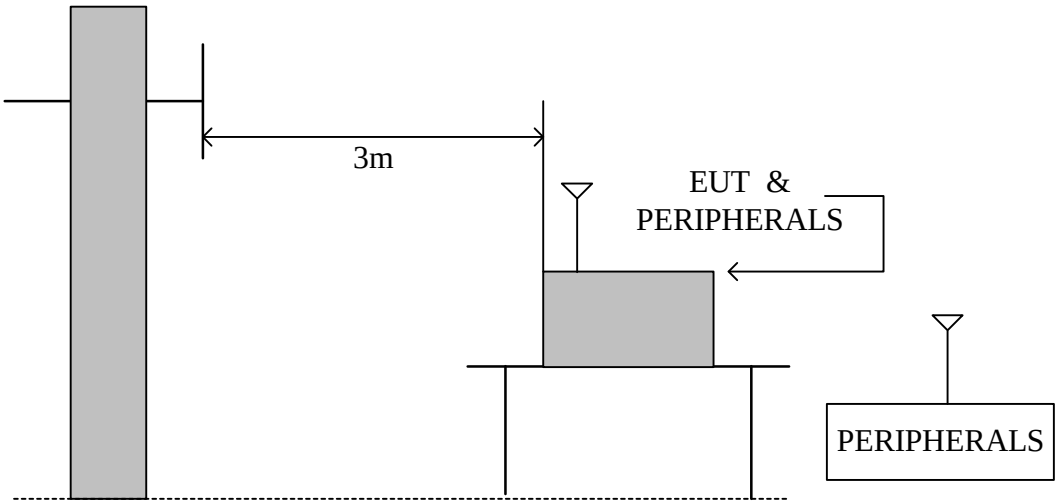
TEST SETUP

The diagram below shows the test setup that is utilized to make the measurements for emission from 30 to 1GHz.



Antenna Elevation Variable

The diagram below shows the test setup that is utilized to make the measurements for emission above 1GHz.



Antenna Elevation Variable

TEST PROCEDURE

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 10 meter chamber test site. The table was rotated 360 degrees to determine the position of the highest radiation.

b. White measuring the radiated emission below 1GHz, the EUT was set 3/10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. White measuring the radiated emission above 1GHz, the EUT was set 3 meters away from the interference-receiving antenna

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarization of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. The tests were performed in accordance with KDB 558074 5.4 .

NOTE：

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 KHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.

2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1GHz.

3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

4. No emission is found between lowest internal used/generated frequency to 30MHz (9kHz~30MHz)

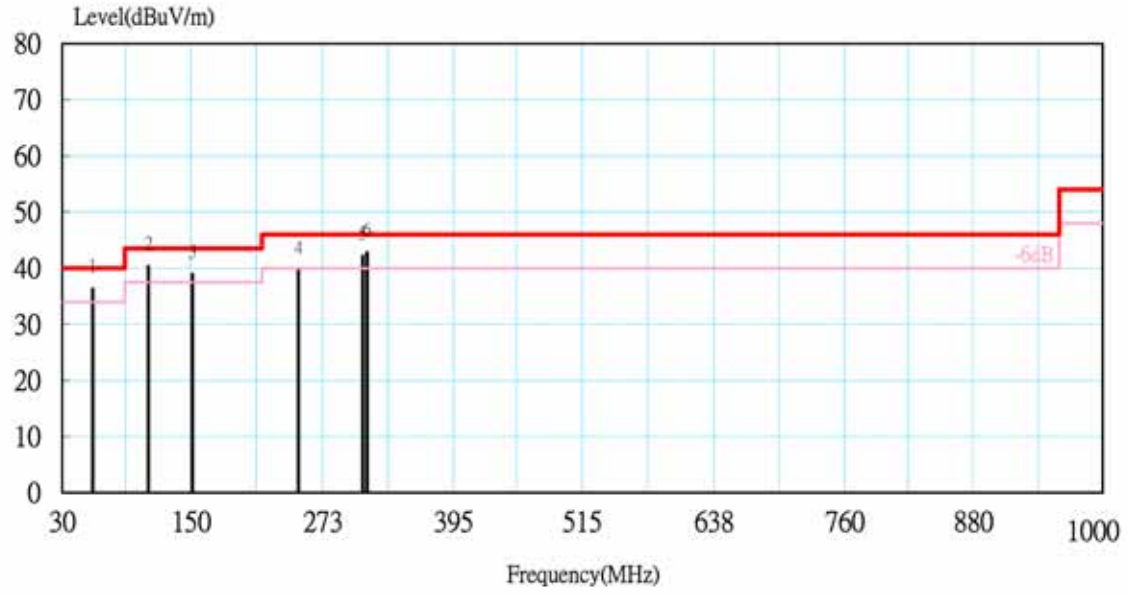
TEST RESULTS

No non-compliance noted.

8.1.2 WORST-CASE RADIATED EMISSION BELOW 1 GHz

Model No.	BRE70n	**Test Mode**	TX
Environmental Conditions	25.5 ℃, 53 % RH	**Resolution Bandwidth**	120 kHz
Antenna Pole	Vertical	**Antenna Distance**	10m
Detector Function:	Quasi-peak.	**Tested By**	Ted Huang

(The chart below shows the highest readings taken from the final data.)

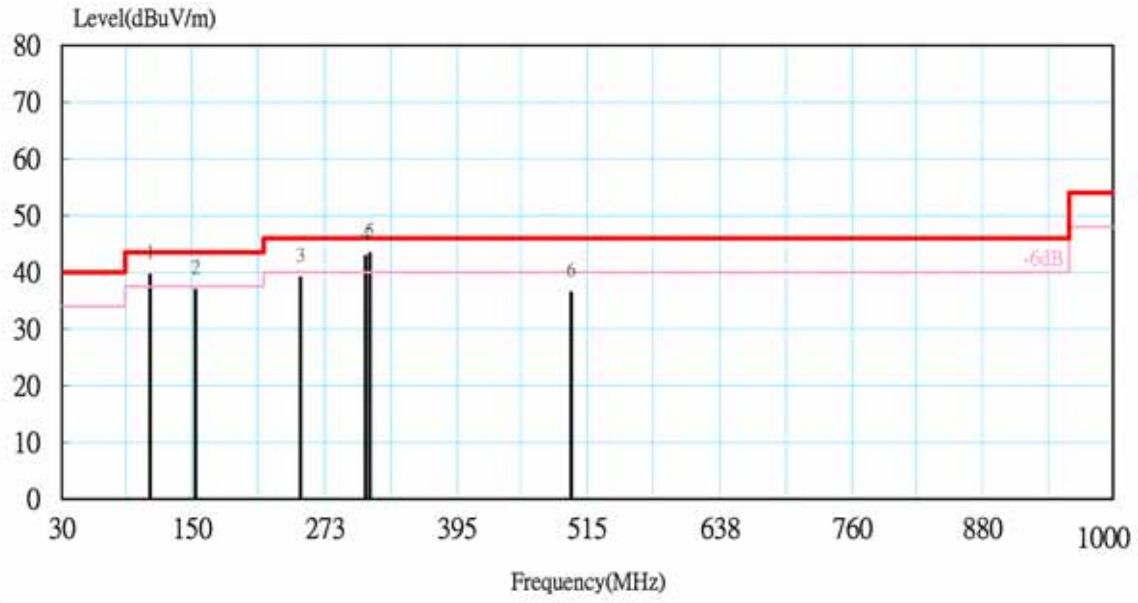


No.	Freq-Uency (MHz)	Meter Reading at 3 m Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission at 3 m Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector Mode PK/QP
1	58.65	27.28	7.99	1.09	36.36	40.00	**-3.64**	QP
2	110.73	25.75	13.09	1.54	40.38	43.50	**-3.12**	QP
3	151.54	24.31	12.77	1.88	38.96	43.50	**-4.54**	QP
4	250.00	24.50	12.50	2.65	39.65	46.00	**-6.35**	QP
5	310.15	24.85	14.21	3.13	42.19	46.00	**-3.81**	QP
6	314.85	25.34	14.31	3.17	42.82	46.00	**-3.18**	QP

Note: 1. QP= Quasi-peak Reading.
2. The other emission levels were very low against the limit

Model No.	BRE70n	**Test Mode**	TX
Environmental Conditions	25.5 °C, 53 % RH	**Resolution Bandwidth**	120 kHz
Antenna Pole	Horizontal	**Antenna Distance**	10m
Detector Function	Quasi-peak.	**Tested By**	Ted Huang

(The chart below shows the highest readings taken from the final data.)



No.	Freq-Uency (MHz)	Meter Reading at 3 m Level (dBµV)	Antenna Factor (dB/m)	Cable Loss (dB)	Emission at 3 m Level (dBµV/m)	Limits (dBµV/m)	Margin (dB)	Detector Mode PK/QP
1	111.60	24.83	13.21	1.54	39.58	43.50	**-3.92**	QP
2	153.35	22.25	12.73	1.90	36.88	43.50	**-6.62**	QP
3	250.00	23.90	12.50	2.65	39.05	46.00	**-6.95**	QP
4	310.16	25.49	14.21	3.13	42.83	46.00	**-3.17**	QP
5	314.85	25.87	14.31	3.17	43.35	46.00	**-2.65**	QP
6	500.00	13.64	18.00	4.76	36.40	46.00	**-9.60**	QP

Note: 1. QP= Quasi-peak Reading.
2. The other emission levels were very low against the limit

8.1.3 TRANSMITTER RADIATED EMISSION ABOVE 1 GHz

Product Name	Micro Wireless Routerr	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11b TX (CH Low)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11b mode / CH Low				**Measurement Distance at 3m**				**Horizontal polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	57.48	24.40	1.86	45.43	0.40	38.71	74.00	-35.29	P
*	1000.02	48.52	24.40	1.86	45.43	0.40	29.75	54.00	-24.25	A
*	4824.05	58.26	32.97	4.38	44.32	0.22	51.52	74.00	-22.48	P
*	4824.05	54.69	32.97	4.38	44.32	0.22	47.95	54.00	-6.05	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11b mode / CH Low				**Measurement Distance at 3m**				**Vertical polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.00	53.79	24.40	1.86	45.43	0.40	35.02	74.00	-38.98	P
*	1000.00	46.13	24.40	1.86	45.43	0.40	27.36	54.00	-26.64	A
*	4824.06	59.25	32.97	4.38	44.32	0.22	52.51	74.00	-21.49	P
*	4824.06	56.68	32.97	4.38	44.32	0.22	49.94	54.00	-4.06	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11b TX (CH Middle)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11b mode / CH Middle				**Measurement Distance at 3m**				**Horizontal polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.01	55.58	24.40	1.86	45.43	0.40	36.81	74.00	-37.19	P
*	1000.01	47.89	24.40	1.86	45.43	0.40	29.12	54.00	-24.88	A
*	4874.24	57.78	33.12	4.41	44.33	0.23	51.21	74.00	-22.79	P
*	4874.24	54.36	33.12	4.41	44.33	0.23	47.79	54.00	-6.21	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

I

	TX / IEEE 802.11b mode / CH Middle				**Measurement Distance at 3m**				**Vertical polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.05	53.35	24.40	1.86	45.43	0.40	34.58	74.00	-39.42	P
*	1000.05	45.63	24.40	1.86	45.43	0.40	26.86	54.00	-27.14	A
*	4874.15	59.04	33.12	4.41	44.33	0.23	52.47	74.00	-21.53	P
*	4874.15	55.76	33.12	4.41	44.33	0.23	49.19	54.00	-4.81	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11b TX (CH High)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11b mode / CH High				**Measurement Distance at 3m**				**Horizontal polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.01	57.35	24.40	1.86	45.43	0.40	38.58	74.00	-35.42	P
*	1000.01	48.78	24.40	1.86	45.43	0.40	30.01	54.00	-23.99	A
*	4923.97	57.22	33.27	4.44	44.35	0.23	50.81	74.00	-23.19	P
*	4923.97	54.36	33.27	4.44	44.35	0.23	47.95	54.00	-6.05	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11b mode / CH High				**Measurement Distance at 3m**				**Vertical polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	52.52	24.40	1.86	45.43	0.40	33.75	74.00	-40.25	P
*	1000.02	44.84	24.40	1.86	45.43	0.40	26.07	54.00	-27.93	A
*	4924.08	58.46	33.27	4.44	44.35	0.23	52.05	74.00	-21.95	P
*	4924.08	54.96	33.27	4.44	44.35	0.23	48.55	54.00	-5.45	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11g TX (CH Low)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11g mode / CH Low				**Measurement Distance at 3m**					**Horizontal polarity**
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	57.96	24.40	1.86	45.43	0.40	39.19	74.00	-34.81	P
*	1000.02	49.13	24.40	1.86	45.43	0.40	30.36	54.00	-23.64	A
*	4823.76	60.25	32.97	4.38	44.32	0.22	53.51	74.00	-20.49	P
*	4823.76	50.38	32.97	4.38	44.32	0.22	43.64	54.00	-10.36	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11g mode / CH Low				**Measurement Distance at 3m**					**Vertical polarity**
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.00	53.58	24.40	1.86	45.43	0.40	34.81	74.00	-39.19	P
*	1000.00	46.38	24.40	1.86	45.43	0.40	27.61	54.00	-26.39	A
*	4824.13	63.45	32.97	4.39	44.32	0.22	56.71	74.00	-17.29	P
*	4824.13	54.08	32.97	4.39	44.32	0.22	47.34	54.00	-6.66	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11g TX (CH Middle)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11g mode / CH Middle				**Measurement Distance at 3m**				**Horizontal polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	56.62	24.40	1.86	45.43	0.40	37.85	74.00	-36.15	P
*	1000.02	48.48	24.40	1.86	45.43	0.40	29.71	54.00	-24.29	A
*	4873.85	58.88	33.12	4.41	44.33	0.23	52.31	74.00	-21.69	P
*	4873.85	48.67	33.12	4.41	44.33	0.23	42.10	54.00	-11.90	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11g mode / CH Middle				**Measurement Distance at 3m**				**Vertical polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	53.52	24.40	1.86	45.43	0.40	34.75	74.00	-39.25	P
*	1000.02	44.87	24.40	1.86	45.43	0.40	26.10	54.00	-27.90	A
*	4874.14	61.68	33.12	4.41	44.33	0.23	55.11	74.00	-18.89	P
*	4874.14	52.17	33.12	4.41	44.33	0.23	45.60	54.00	-8.40	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11g TX (CH High)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11g mode / CH High				**Measurement Distance at 3m**					**Horizontal polarity**
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.03	57.28	24.40	1.86	45.43	0.40	38.51	74.00	-35.49	P
*	1000.03	48.64	24.40	1.86	45.43	0.40	29.87	54.00	-24.13	A
*	4923.97	57.42	33.27	4.44	44.35	0.23	51.01	74.00	-22.99	P
*	4923.97	47.38	33.27	4.44	44.35	0.23	40.97	54.00	-13.03	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11g mode / CH High				**Measurement Distance at 3m**					**Vertical polarity**
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	54.52	24.40	1.86	45.43	0.40	35.75	74.00	-38.25	P
*	1000.02	46.28	24.40	1.86	45.43	0.40	27.51	54.00	-26.49	A
*	4924.20	61.24	33.27	4.44	44.35	0.23	54.84	74.00	-19.16	P
*	4924.20	50.89	33.27	4.44	44.35	0.23	44.49	54.00	-9.51	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11n HT20 TX (CH Low)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11n HT20 mode / CH Low	**Measurement Distance at 3m**					**Horizontal polarity**			
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	57.86	24.40	1.86	45.43	0.40	39.09	74.00	-34.91	P
*	1000.02	49.36	24.40	1.86	45.43	0.40	30.59	54.00	-23.41	A
*	4824.28	60.38	32.97	4.39	44.32	0.22	53.64	74.00	-20.36	P
*	4824.28	51.28	32.97	4.39	44.32	0.22	44.54	54.00	-9.46	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11n HT20 mode / CH Low	**Measurement Distance at 3m**					**Vertical polarity**			
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.05	54.45	24.40	1.86	45.43	0.40	35.68	74.00	-38.32	P
*	1000.05	46.08	24.40	1.86	45.43	0.40	27.31	54.00	-26.69	A
*	4823.88	63.58	32.97	4.38	44.32	0.22	56.84	74.00	-17.16	P
*	4823.88	54.36	32.97	4.38	44.32	0.22	47.62	54.00	-6.38	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11n HT20 TX (CH Middle)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11n HT20 mode / CH Middle				**Measurement Distance at 3m**				**Horizontal polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.04	57.52	24.40	1.86	45.43	0.40	38.75	74.00	-35.25	P
*	1000.04	48.78	24.40	1.86	45.43	0.40	30.01	54.00	-23.99	A
*	4874.24	57.58	33.12	4.41	44.33	0.23	51.01	74.00	-22.99	P
*	4874.24	48.64	33.12	4.41	44.33	0.23	42.07	54.00	-11.93	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11n HT20 mode / CH Middle				**Measurement Distance at 3m**				**Vertical polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.00	54.28	24.40	1.86	45.43	0.40	35.51	74.00	-38.49	P
*	1000.00	46.08	24.40	1.86	45.43	0.40	27.31	54.00	-26.69	A
*	4873.79	61.45	33.12	4.41	44.33	0.23	54.88	74.00	-19.12	P
*	4873.79	51.35	33.12	4.41	44.33	0.23	44.78	54.00	-9.22	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11n HT20 TX (CH High)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11n HT20 mode / CH High				**Measurement Distance at 3m**				**Horizontal polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.03	57.36	24.40	1.86	45.43	0.40	38.59	74.00	-35.41	P
*	1000.03	49.28	24.40	1.86	45.43	0.40	30.51	54.00	-23.49	A
*	4924.15	58.45	33.27	4.44	44.35	0.23	52.04	74.00	-21.96	P
*	4924.15	47.68	33.27	4.44	44.35	0.23	41.27	54.00	-12.73	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11n HT20 mode / CH High				**Measurement Distance at 3m**				**Vertical polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	54.23	24.40	1.86	45.43	0.40	35.46	74.00	-38.54	P
*	1000.02	46.13	24.40	1.86	45.43	0.40	27.36	54.00	-26.64	A
*	4923.85	60.42	33.27	4.44	44.35	0.23	54.01	74.00	-19.99	P
*	4923.85	49.86	33.27	4.44	44.35	0.23	43.45	54.00	-10.55	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11n HT40 TX (CH Low)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11n HT40 mode / CH Low	**Measurement Distance at 3m**					**Horizontal polarity**			
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.01	57.23	24.40	1.86	45.43	0.40	38.46	74.00	-35.54	P
*	1000.01	48.96	24.40	1.86	45.43	0.40	30.19	54.00	-23.81	A
*	4844.24	59.48	33.03	4.40	44.33	0.22	52.81	74.00	-21.19	P
*	4844.24	50.36	33.03	4.40	44.33	0.22	43.69	54.00	-10.31	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11n HT40 mode / CH Low	**Measurement Distance at 3m**					**Vertical polarity**			
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.03	54.68	24.40	1.86	45.43	0.40	35.91	74.00	-38.09	P
*	1000.03	45.85	24.40	1.86	45.43	0.40	27.08	54.00	-26.92	A
*	4844.18	61.68	33.03	4.40	44.33	0.22	55.01	74.00	-18.99	P
*	4844.18	52.45	33.03	4.40	44.33	0.22	45.78	54.00	-8.22	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11n HT40 TX (CH Middle)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11n HT40 mode / CH Middle				**Measurement Distance at 3m**				**Horizontal polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	57.33	24.40	1.86	45.43	0.40	38.56	74.00	-35.44	P
*	1000.02	49.28	24.40	1.86	45.43	0.40	30.51	54.00	-23.49	A
*	4874.65	56.68	33.12	4.41	44.33	0.23	50.11	74.00	-23.89	P
*	4874.65	47.52	33.12	4.41	44.33	0.23	40.95	54.00	-13.05	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11n HT40 mode / CH Middle				**Measurement Distance at 3m**				**Vertical polarity**	
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.00	54.45	24.40	1.86	45.43	0.40	35.68	74.00	-38.32	P
*	1000.00	46.23	24.40	1.86	45.43	0.40	27.46	54.00	-26.54	A
*	4874.26	60.52	33.12	4.41	44.33	0.23	53.95	74.00	-20.05	P
*	4874.26	50.98	33.12	4.41	44.33	0.23	44.41	54.00	-9.59	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*

Product Name	Micro Wireless Router	**Test Date**	2018/08/01
Model	BRE70n	**Test By**	Ted Huang
Test Mode	IEEE 802.11n HT40 TX (CH High)	**TEMP& Humidity**	26.8℃, 53%

	TX / IEEE 802.11n HT40 mode / CH High	**Measurement Distance at 3m**					**Horizontal polarity**			
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	57.25	24.40	1.86	45.43	0.40	38.48	74.00	-35.52	P
*	1000.02	49.38	24.40	1.86	45.43	0.40	30.61	54.00	-23.39	A
*	4905.60	57.23	33.22	4.43	44.34	0.23	50.76	74.00	-23.24	P
*	4905.60	46.28	33.22	4.43	44.34	0.23	39.81	54.00	-14.19	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

	TX / IEEE 802.11n HT40 mode / CH High	**Measurement Distance at 3m**					**Vertical polarity**			
	Freq.	**Reading**	**AF**	**Cable Loss**	**Pre-amp**	**Filter**	**Level**	**Limit**	**Margin**	**Mark**
	(MHz)	**(dBμV)**	**(dB/m)**	**(dB)**	**(dB)**	**(dB)**	**(dBμV/m)**	**(dBμV/m)**	**(dB)**	**(P/Q/A)**
*	1000.02	54.45	24.40	1.86	45.43	0.40	35.68	74.00	-38.32	P
*	1000.02	46.28	24.40	1.86	45.43	0.40	27.51	54.00	-26.49	A
*	4903.68	58.63	33.21	4.43	44.34	0.23	52.16	74.00	-21.84	P
*	4903.68	48.78	33.21	4.43	44.34	0.23	42.31	54.00	-11.69	A
	N/A	------	------	------	------	------	------	------	------	P
	N/A	------	------	------	------	------	------	------	------	A

REMARK:

1. *AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: 2.4GHz~2.5GHz Filter Insertion Loss*
2. *Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz*
3. *The result basic equation calculation is as follow:*
   Level = Reading + AF + Cable – Preamp + Filter , Margin = Level-Limit
4. *The other emission levels were 20dB below the limit*
5. *The test limit distance is 3M limit.*