

FCC AND ISED CERTIFICATION TEST REPORT

FOR

Applicant	:	Ruijie Networks Co., Ltd.
Address	:	Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District, Fuzhou, Fujian, China
Equipment under Test	:	Wireless Access Point
Model No.	:	RG-RAP73HD
Trade Mark	:	
FCC ID	:	2AX5J-RAP73HD
IC	:	27676-RAP73HD
Manufacturer	:	Ruijie Networks Co., Ltd.
Address	:	Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District, Fuzhou, Fujian, China

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

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REPORT

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Test Report Declare

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Equipment under Test	:	Wireless Access Point
Model No	:	RG-RAP73HD
Trade Mark	:	
Manufacturer	:	Ruijie Networks Co., Ltd.
Address	:	Building 19, Juyuanzhou Industrial Park, No. 618 Jinshan Road, Cangshan District, Fuzhou, Fujian, China

Test Standard Used: FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 2 February 2017.

Test procedure used: ANSI C63.10:2013, RSS-Gen Issue 5, Apr. 2018, 558074 D01 15.247 Meas Guidance v05r02, 662911 D01 Multiple Transmitter Output v02r01

We Declare:

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC&ISED standards.

Report No:	DDT-RE23032214-2E01		
Date of Receipt:	Mar. 07, 2023	Date of Test:	Mar. 07, 2023 ~ Jul. 05, 2023

Prepared By:

Ella Gong

Ella Gong/Engineer

Approved By:



Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jul. 05, 2023	

1. Summary of Test Results

The EUT have been tested according to the applicable standards as referenced below.		
Description of Test Item	Standard	Results
6dB Bandwidth and 99% Bandwidth	FCC Part 15: 15.247(a)(2) RSS-247 Issue 2 clause 5.2(a) RSS-Gen Issue 5 clause 6.7	PASS
Conducted Output Power	FCC Part 15: 15.247(b)(3) RSS-247 Issue 2 clause 5.4(d)	PASS
Power Spectral Density	FCC Part 15:15.247(e) RSS-247 Issue 2 clause 5.2(b)	PASS
Band-edge and Spurious Emissions (Conducted)	FCC Part 15: 15.247(d) RSS-247 Issue 2 clause 5.5	PASS
Radiated Spurious Emissions	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.247(d) RSS-247 Issue 2 clause 5.5 RSS-Gen Issue 5 clause 8.9 RSS-Gen Issue 5 clause 8.10	PASS
Radiated Band Edge Compliance	FCC Part 15: 15.205 FCC Part 15: 15.209 FCC Part 15: 15.247(d) RSS-247 Issue 2 clause 5.5 RSS-Gen Issue 5 clause 8.9 RSS-Gen Issue 5 clause 8.10	PASS
Power Line Conducted Emission	FCC Part 15: 15.207(a) RSS-Gen Issue 5 clause 8.8	PASS
Antenna requirement	FCC Part 15: 15.203 RSS-Gen Issue 5 clause 6.8	PASS

2. General Test Information

2.1. Description of EUT

EUT* Name	: Wireless Access Point
Model Number	: RG-RAP73HD
EUT function description	: Please reference user manual of this device
Power supply	: DC 48V from external adapter /POE
Radio Technology	: IEEE 802.11b/g/n/ax/be
Operation frequency	: IEEE 802.11b: 2412MHz-2462MHz IEEE 802.11g: 2412MHz-2462MHz IEEE 802.11n HT20: 2412MHz-2462MHz IEEE 802.11n HT40: 2422MHz-2452MHz IEEE 802.11ax HE20: 2412MHz-2462MHz IEEE 802.11ax HE40: 2422MHz-2452MHz IEEE 802.11be EHT20: 2412MHz-2462MHz IEEE 802.11be EHT40: 2422MHz-2452MHz
Modulation	: IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax HE20, HE40: OFDMA (1024QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11be EHT20, EHT40: OFDMA (1024QAM, 64QAM, 16QAM, QPSK, BPSK)
Antenna Type	: Antenna 1: PIFA antenna, Maximum PK gain: 6.71 dBi Antenna 2: PIFA antenna, Maximum PK gain: 6.72 dBi Antenna 3: PIFA antenna, Maximum PK gain: 6.52 dBi Antenna 4: PIFA antenna, Maximum PK gain: 5.85 dBi
Sample Number	: S23032214-02 for conductive test, S23032214-03 for radiation test

Note 1: EUT is the ab. of equipment under test.

Note 2: According exploratory explorer test, for 802.11ax Mode and 802.11be Mode, there is no significant difference, so the final test was only performed with EUT working in 802.11be mode.

2.4 GHz Antenna information						
Antenna Type :PIFA				Beamforming Directional Gain (dBi)	CDD Directional Gain (dBi)	
Antenna 1 Gain(dBi)	Antenna 2 Gain(dBi)	Antenna 3 Gain(dBi)	Antenna 4 Gain(dBi)		Power	PSD
6.71	6.72	6.52	5.85	12.74	6.72	12.74

Remark:

The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

Directional gain = $G_{ANT} + \text{Array Gain}$, where Array Gain is as follows:

- 1) For power spectral density (PSD) measurements on all devices.
Array Gain = $10 \log (N_{ANT} / N_{SS})$ dB;
- 2) For power measurements on IEEE 802.11 devices.
Array Gain = 0 dB for $N_{ANT} < 4$;

The EUT also supports beamforming mode, and the beamforming support 802.11n/ac/ax/be only, not include 802.11a/b/g. BF Directional Gain = Max. Gain + $10 \log (N_{ANT} / N_{SS})$.

For beamforming operation, manufacturer automatically backs power down based on a 10log

(N_{ANT}) factor based on CDD power, Therefore, only the CDD mode was evaluated in this report.

Channel information					
CH	Frequency (MHz)	CH	Frequency (MHz)	CH	Frequency (MHz)
1	2412	5	2432	9	2452
2	2417	6	2437	10	2457
3	2422	7	2442	11	2462
4	2427	8	2447	/	/

For this device,

802.11 ax only support full RU mode.

802.11be support small size RU, as below,

Indices for Small Size MRUs in an OFDMA 20 MHz EHT PPDU

MRU type	MRU index	MRU combination
52+26-tone MRU	MRU 1	52-tone RU 2 + 26-tone RU 2
	MRU 2	52-tone RU 2 + 26-tone RU 5
	MRU 3	52-tone RU 3 + 26-tone RU 8
106+26-tone MRU	MRU 1	106-tone RU 1 + 26-tone RU 5
	MRU 2	106-tone RU 2 + 26-tone RU 5

Indices for Small Size MRUs in an OFDMA 40 MHz EHT PPDU

MRU type	MRU index	MRU combination
52+26-tone MRU	MRU 1	52-tone RU 2 + 26-tone RU 2
	MRU 2	52-tone RU 2 + 26-tone RU 5
	MRU 3	52-tone RU 3 + 26-tone RU 8
	MRU 4	52-tone RU 6 + 26-tone RU 11
	MRU 5	52-tone RU 6 + 26-tone RU 14
	MRU 6	52-tone RU 7 + 26-tone RU 17
106+26-tone MRU	MRU 1	106-tone RU 1 + 26-tone RU 5
	MRU 2	106-tone RU 2 + 26-tone RU 5
	MRU 3	106-tone RU 3 + 26-tone RU 14
	MRU 4	106-tone RU 4 + 26-tone RU 14

Note:

1. 802.11be support full RU tone and partial RU tone, both full RU and partial RU are tested for conducted power/PSD, according to TCB Workshop, if Partial_RU PSD < Full_RU PSD, perform additional testing on that Partial_RU modes for band edge and spurious emissions.

2. According to above MRU combination, 52+26_Tone MRU (Index 1, 2 and 3) represents 52+26_Tone MRU (Index 4, 5 and 6), so Partial_RU modes tested MRU combination 52+26_Tone MRU (Index 1, 2 and 3), 106+26_Tone MRU (Index 1, 2, 3 and 4)

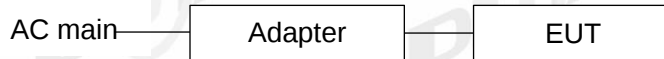
2.2. Accessories of EUT

Description of Accessories	Manufacturer	Model number	Other
POE Power Supply	RISUNIC Technology (ShenZhen) Co., Ltd	RP026-5601080YX	Input: 100-240~50/60Hz, 1.5A Max Output: DC 56.0V/1.08A, 60.48W

2.3. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	EMC Compliance	SN
N/A	N/A	N/A	N/A	N/A

2.4. Block diagram of EUT configuration for test



Test software: QATool_20221007C.exe

The test software was used to control EUT work in Continuous Tx mode and select test channel, wireless mode as below table.

The pathloss of external cable: 0.5dB (According to the manufacturer's claims)

Tested mode, channel, and data rate information					
Mode	Setting Tx Power		data rate (Mbps) (see Note)	Channel	Frequency (MHz)
	ANT1	ANT2			
IEEE 802.11b	10	10	1	LCH: CH1	2412
	10	10	1	MCH: CH6	2437
	10	10	1	HCH: CH11	2462
IEEE 802.11g	5	5	6	LCH: CH1	2412
	5	5	6	MCH: CH6	2437
	5	5	6	HCH: CH11	2462
IEEE 802.11n HT20	4.5	4.5	MCS 24	LCH: CH1	2412
	4.5	4.5	MCS 24	MCH: CH6	2437
	4.5	4.5	MCS 24	HCH: CH11	2462
IEEE 802.11n HT40	4.5	4.5	MCS 24	LCH: CH3	2422
	4.5	4.5	MCS 24	MCH: CH6	2437
	4.5	4.5	MCS 24	HCH: CH9	2452
IEEE 802.11ax HE20	4.5	4.5	MCS 0	LCH: CH1	2412
	4.5	4.5	MCS 0	MCH: CH6	2437
	4.5	4.5	MCS 0	HCH: CH11	2462
IEEE 802.11ax HE40	4.5	4.5	MCS 0	LCH: CH3	2422
	4.5	4.5	MCS 0	MCH: CH6	2437
	4.5	4.5	MCS 0	HCH: CH9	2452
IEEE 802.11 be EHT20	4.5	4.5	MCS 0	LCH: CH1	2412
	4.5	4.5	MCS 0	MCH: CH6	2437
	4.5	4.5	MCS 0	HCH: CH11	2462
IEEE 802.11 be EHT40	4.5	4.5	MCS 0	LCH: CH3	2422
	4.5	4.5	MCS 0	MCH: CH6	2437
	4.5	4.5	MCS 0	HCH: CH9	2452

Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

2.5. Deviations of test standard

No Deviation

2.6. Test environment conditions

Temperature range:	+15℃ to +35 ℃
Humidity range:	20% to 75%
Pressure range:	86 kPa to 106 kPa

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808.

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20155, G-20118

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.38 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$)
Frequencies Stability	6.7×10^{-8} (Antenna couple method) 5.5×10^{-8} (Conducted method)
Conducted spurious emissions	0.86 dB ($10 \text{ MHz} \leq f < 3.6 \text{ GHz}$); 1.40 dB ($3.6 \text{ GHz} \leq f < 8 \text{ GHz}$); 1.66 dB ($8 \text{ GHz} \leq f < 22 \text{ GHz}$)
Uncertainty for radio frequency (RBW < 20 kHz)	3×10^{-8}
Temperature	0.4 ℃
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V) 4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz) 4.40 dB (6 GHz - 18 GHz) 3.54 dB (18 GHz - 26 GHz) 4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.34dB (150KHz-30MHz) 3.72dB (9KHz-150KHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

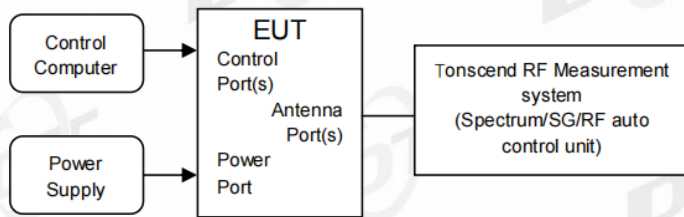
3. Equipment Used During Test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑RF Connected Test (Tonscend RF Measurement System 4#)					
Signal & Spectrum analyzer	R&S	FSV3044	101173	May 26, 2022 Apr. 23, 2023	1 Year
Wideband Radio Communication tester	R&S	CMW500	120259	May 26, 2022 Apr. 27, 2023	1 Year
Vector Signal Generator	Agilent	N5182A	MY48180737	Apr. 27, 2023	1 Year
Vector Signal Generator	Agilent	E8267D	US49060192	Sep. 28, 2022	1 Year
RF Control Unit	Tonsend	JS0806-2	2118060485	May 28, 2022 Apr. 27, 2023	1 Year
Temp&Humi Programmable	ZHIXIANG	ZXGDJS-150L	ZX170110-A	May 26, 2022 May 15, 2023	1 Year
Test Software	JS Tonscend	JS1120-3	Ver.3.2.22	N/A	N/A
☑Radiation 3#chamber					
EMI Test Receiver	R&S	ESU26	100472	May 19, 2022 Apr. 23, 2023	1 Year
Spectrum analyzer	Agilent	E4447A	MY50180031	May 17, 2022 Apr. 23, 2023	1 Year
Active Loop antenna	Schwarzbeck	FMZB-1519	1519-038	Sep. 29, 2022	1 Year
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	01429	Jul. 22, 2022	1 Year
Double Ridged Horn Antenna	Schwarzbeck	BBHA9120 D	02468	Sep. 29, 2022	1 Year
Broad Band Horn Antenna	Schwarzbeck	BBHA 9170	790	May 06, 2022 Apr. 26, 2023	1 Year
Pre-amplifier	COM-POWER	PAM-118A	18040084	Aug. 17, 2022	1 Year
Pre-amplifier	COM-POWER	PAM-840A	461369	May 26, 2022 Apr. 27, 2023	1 Year
RE Cable	N/A	W23.02 CP1-X2 + W23.09 AP1-X8+ JCT26S-NJ-NJ-1.5M+ JCT26S-NJ-NJ-1.5M	4.5M+8M+1.5M+1.5M	Aug. 17, 2022	1 Year
RF Cable	Yuhu Technology	JCTB810-NJ-NJ-9M	21123964	May 19, 2022 Apr. 23, 2023	1 Year
RF Cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	21073466	Aug. 17, 2022	1 Year
Micro-Tronics filters	REBES	BRM50702	G555	N/A	N/A
Micro-Tronics filters	REBES	BRM50716	G392	N/A	N/A
High Pass filter	XB	XBLBQ-GTA67	210820-2-3	N/A	N/A
Test software	Tonscend	JS32-RE	V 5.0.0.1	N/A	N/A
☑Power Line Conducted Emissions Test 1#					
Test Receiver	R&S	ESCI	100551	Aug. 26, 2022	1 Year
LISN 1	R&S	ENV216	101109	Aug. 26, 2022	1 Year

LISN 2	R&S	ESH2-Z5	100309	Aug. 26, 2022	1 Year
Pulse Limiter	R&S	ESH3-Z2	101242	Aug. 26, 2022	1 Year
CE Cable 1	HUBSER	N/A	W10.01	Aug. 26, 2022	1 Year
Test software	Audix	E3	V 6.11111b	N/A	N/A
Test Receiver	R&S	ESCI	100551	Aug. 26, 2022	1 Year

4. 6dB Bandwidth

4.1. Block diagram of test setup



4.2. Limits

For direct sequence systems, the minimum 6 dB bandwidth shall be at least 500 kHz

4.3. Test procedure

- (1) The test according to ANSI C63.10-2013 clause 11.8.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results
- (3) Set the EUT as maximum power setting and enable the EUT transmit continuously
- (4) Use the following spectrum analyzer settings for 6 dB Bandwidth:

RBW:	100 kHz
VBW:	$\geq [3 \times \text{RBW}]$
Detector Mode:	peak
Sweep time:	auto
Trace mode	max hold

Allow the trace to stabilize, measure the 6 dB bandwidth of signal, and record the results in the report

4.4. Test result

Test Mode	Antenna	Frequency [MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
11B	Ant1	2412	8.04	2407.96	2416.00	0.5	PASS
	Ant2	2412	8.04	2407.96	2416.00	0.5	PASS
	Ant3	2412	8.04	2407.96	2416.00	0.5	PASS
	Ant4	2412	8.04	2407.96	2416.00	0.5	PASS
	Ant1	2437	8.04	2432.96	2441.00	0.5	PASS
	Ant2	2437	8.04	2432.96	2441.00	0.5	PASS
	Ant3	2437	8.04	2432.96	2441.00	0.5	PASS
	Ant4	2437	8.04	2432.96	2441.00	0.5	PASS
	Ant1	2462	8.04	2457.96	2466.00	0.5	PASS
	Ant2	2462	8.04	2457.96	2466.00	0.5	PASS
	Ant3	2462	8.04	2457.96	2466.00	0.5	PASS
	Ant4	2462	8.04	2457.96	2466.00	0.5	PASS
11G-CDD	Ant1	2412	15.36	2404.20	2419.56	0.5	PASS
	Ant2	2412	15.36	2404.40	2419.76	0.5	PASS
	Ant3	2412	15.48	2404.08	2419.56	0.5	PASS
	Ant4	2412	15.36	2404.20	2419.56	0.5	PASS
	Ant1	2437	15.16	2429.40	2444.56	0.5	PASS
	Ant2	2437	15.16	2429.40	2444.56	0.5	PASS
	Ant3	2437	15.16	2429.40	2444.56	0.5	PASS
	Ant4	2437	15.68	2429.08	2444.76	0.5	PASS
	Ant1	2462	15.36	2454.20	2469.56	0.5	PASS
	Ant2	2462	15.16	2454.40	2469.56	0.5	PASS
	Ant3	2462	15.36	2454.20	2469.56	0.5	PASS
	Ant4	2462	15.16	2454.40	2469.56	0.5	PASS
11N20MIMO	Ant1	2412	15.16	2404.40	2419.56	0.5	PASS
	Ant2	2412	16.52	2403.60	2420.12	0.5	PASS
	Ant3	2412	16.32	2403.80	2420.12	0.5	PASS
	Ant4	2412	15.76	2403.80	2419.56	0.5	PASS
	Ant1	2437	15.68	2429.08	2444.76	0.5	PASS
	Ant2	2437	16.32	2428.80	2445.12	0.5	PASS
	Ant3	2437	16.28	2428.84	2445.12	0.5	PASS
	Ant4	2437	15.72	2429.40	2445.12	0.5	PASS
	Ant1	2462	15.16	2454.40	2469.56	0.5	PASS
	Ant2	2462	16.32	2453.80	2470.12	0.5	PASS
	Ant3	2462	16.28	2453.84	2470.12	0.5	PASS
	Ant4	2462	15.76	2453.80	2469.56	0.5	PASS
11N40MIMO	Ant1	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant2	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant3	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant4	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant1	2437	35.12	2419.48	2454.60	0.5	PASS
	Ant2	2437	33.92	2420.68	2454.60	0.5	PASS
	Ant3	2437	35.12	2419.48	2454.60	0.5	PASS
	Ant4	2437	35.12	2419.48	2454.60	0.5	PASS
	Ant1	2452	35.12	2434.48	2469.60	0.5	PASS
	Ant2	2452	33.92	2435.68	2469.60	0.5	PASS
	Ant3	2452	35.12	2434.48	2469.60	0.5	PASS
	Ant4	2452	35.12	2434.48	2469.60	0.5	PASS

11AX20MIMO	Ant1	2412	18.16	2402.92	2421.08	0.5	PASS
	Ant2	2412	17.68	2403.08	2420.76	0.5	PASS
	Ant3	2412	17.48	2403.00	2420.48	0.5	PASS
	Ant4	2412	18.04	2402.96	2421.00	0.5	PASS
	Ant1	2437	17.56	2428.20	2445.76	0.5	PASS
	Ant2	2437	17.80	2427.96	2445.76	0.5	PASS
	Ant3	2437	16.84	2428.68	2445.52	0.5	PASS
	Ant4	2437	17.80	2428.20	2446.00	0.5	PASS
	Ant1	2462	17.24	2453.52	2470.76	0.5	PASS
	Ant2	2462	16.80	2453.72	2470.52	0.5	PASS
	Ant3	2462	17.80	2452.96	2470.76	0.5	PASS
	Ant4	2462	17.80	2452.96	2470.76	0.5	PASS
11AX40MIMO	Ant1	2422	35.28	2404.24	2439.52	0.5	PASS
	Ant2	2422	33.84	2405.76	2439.60	0.5	PASS
	Ant3	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant4	2422	35.04	2404.48	2439.52	0.5	PASS
	Ant1	2437	33.92	2420.68	2454.60	0.5	PASS
	Ant2	2437	33.84	2420.76	2454.60	0.5	PASS
	Ant3	2437	34.40	2420.20	2454.60	0.5	PASS
	Ant4	2437	35.04	2419.48	2454.52	0.5	PASS
	Ant1	2452	35.12	2434.48	2469.60	0.5	PASS
	Ant2	2452	35.04	2434.48	2469.52	0.5	PASS
	Ant3	2452	33.84	2435.76	2469.60	0.5	PASS
	Ant4	2452	35.04	2434.48	2469.52	0.5	PASS
11BE20MIMO	Ant1	2412	15.16	2404.40	2419.56	0.5	PASS
	Ant2	2412	16.32	2403.24	2419.56	0.5	PASS
	Ant3	2412	15.20	2404.36	2419.56	0.5	PASS
	Ant4	2412	16.32	2403.24	2419.56	0.5	PASS
	Ant1	2437	15.16	2429.40	2444.56	0.5	PASS
	Ant2	2437	15.12	2429.40	2444.52	0.5	PASS
	Ant3	2437	15.20	2429.36	2444.56	0.5	PASS
	Ant4	2437	17.60	2428.20	2445.80	0.5	PASS
	Ant1	2462	15.20	2454.36	2469.56	0.5	PASS
	Ant2	2462	15.12	2454.40	2469.52	0.5	PASS
	Ant3	2462	16.60	2452.96	2469.56	0.5	PASS
	Ant4	2462	15.56	2453.96	2469.52	0.5	PASS
11BE40MIMO	Ant1	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant2	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant3	2422	35.12	2404.48	2439.60	0.5	PASS
	Ant4	2422	33.76	2405.76	2439.52	0.5	PASS
	Ant1	2437	35.12	2419.48	2454.60	0.5	PASS
	Ant2	2437	35.12	2419.48	2454.60	0.5	PASS
	Ant3	2437	35.12	2419.48	2454.60	0.5	PASS
	Ant4	2437	33.76	2420.76	2454.52	0.5	PASS
	Ant1	2452	33.92	2435.68	2469.60	0.5	PASS
	Ant2	2452	33.84	2435.76	2469.60	0.5	PASS
	Ant3	2452	35.04	2434.48	2469.52	0.5	PASS
	Ant4	2452	35.04	2434.48	2469.52	0.5	PASS

4.5. Test graphs











