



A Test Lab Techno Corp.

Changan Lab : No. 140 -1, Changan Street, Bade City, Taoyuan County, Taiwan R.O.C.
Tel : 886-3-271-0188 / Fax : 886-3-271-0190



MPE Report

Test Report No.	: 1502FS11-06
Applicant	: ZyXEL Communications Corporation
Manufacturer (1)	: MitraStar Technology Corporation
Manufacturer (2)	: WuXi MitraStar Technology Co. Ltd
Product Type	: Simultaneous Dual-Band Wireless AC2350 Ultra HD Media Router
Trade Name	: ZyXEL
Model Number	: NBG6816
Date of Received	: Jan. 21, 2015
Test Period	: Jan. 27 ~ Feb. 05, 2015
Date of Issued	: Jun. 24, 2015
Test Specification	: 47 CFR § 2.1091 47 CFR §1.1310 ANSI / IEEE Std.C95.1-1992
Location of Test Lab.	: Chang-an Lab.

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
3. The measurement report has to be written approval of A Test Lab Techno Corp. It may only be reproduced or published in full. This report shall not be reproduced except in full, without the written approval of A Test Lab Techno Corp.
4. This document may be altered or revised by A Test Lab Techno. Corp. personnel only, and shall be noted in the revision section of the document.

Approved By : Bill Hu
(Bill Hu)

Tested By : Sky Chou
(Sky Chou)



Contents

1.	Description of Equipment under Test (EUT).....	3
2.	Human Exposure Assessment.....	4
3.	RF Output Power	5
4.	Test Result	13
5.	Simultaneous Transmitting Evaluate	15



1. Description of Equipment under Test (EUT)

Applicant	ZyXEL Communications Corporation				
Applicant Address	No.2, Gongye E. 9th Road, Hsinchu Science Park, Hsinchu, Taiwan				
Manufacturer (1)	MitraStar Technology Corporation				
Manufacturer Address (1)	No. 6, Innovation Rd II, Science-Based Industrial, Hsinchu, Taiwan				
Manufacturer (2)	WuXi MitraStar Technology Co. Ltd				
Manufacturer Address (2)	60#-E, Minshan Road, New district WuXi, Jiangsu, P.R. China				
Product Type	Simultaneous Dual-Band Wireless AC2350 Ultra HD Media Router				
Trade Name	ZyXEL				
Model Number	NBG6816				
Hardware Version	80-035-008001ACB				
Software Version	3.40(VSI.7)01				
Radio Hardware Version	2.4GHz	5GHz			
	80-035-008001ACB	80-035-008001ACB			
Radio Software Version	2.4GHz	5GHz			
	QCA-wifi-10.2.2.60.9	v36.7.4.17			
FCC ID	I88NBG6816				
Frequency Range	IEEE 802.11b / 802.11g / 802.11n 2.4GHz (20MHz): 2412 ~ 2462 MHz IEEE 802.11n 2.4GHz (40MHz): 2422 ~ 2452 MHz IEEE 802.11a / 802.11n 5GHz (20MHz): 5180 ~ 5240 MHz / 5745 ~ 5825 MHz IEEE 802.11n 5GHz (40MHz): 5190 ~ 5230 MHz / 5755 ~ 5795 MHz IEEE 802.11ac 5GHz (80MHz): 5210 MHz / 5775 MHz				
Transmit Power (conducted power)	Band	Max. Power			
		(dBm)		(W)	
	IEEE 802.11b	29.74		0.942	
	IEEE 802.11g	29.47		0.885	
	IEEE 802.11n 2.4GHz (20MHz)	29.29		0.849	
	IEEE 802.11n 2.4GHz (40MHz)	28.68		0.738	
	Band	Beanforming On Max. Power		Beanforming Off Max. Power	
		(dBm)	(W)	(dBm)	(W)
	IEEE 802.11a	24.99	0.336	29.16	0.825
	IEEE 802.11n 5GHz (20MHz)	25.09	0.323	29.39	0.869
	IEEE 802.11n 5GHz (40MHz)	25.27	0.337	29.24	0.840
IEEE 802.11ac 5GHz (80MHz)	25.40	0.347	28.40	0.692	
Antenna Specification	2.4GHz: 2.94 dBi 5GHz U-NII Band I: 4.26 dBi 5GHz U-NII Band III: 4.15 dBi				
Antenna Designation	Dipole Antenna (Reversed-SMA Connector)				
RF Evaluation	3.33 W/m ²				
Simultaneous Transmitting Evaluate	5.07 W/m ²				

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 & 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties



2. Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR §1.1310 titled "Radiofrequency radiation exposure limits", generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as "a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. " This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: "IMPORTANT: To meet the FCC's RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna". Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a "mobile device" as defined in section § 2.1091 paragraph (b).

Exposure evaluation

$$S = \frac{PG}{4\pi R^2}$$

Where

S: power density

P: power input to the antenna

G: power gain of the antenna in the direction of interest relative to an isotropic radiator.

R: distance to the center of radiation of the antenna.



3. RF Output Power

Band	Data Rate	CH	Frequency (MHz)	RF Power setting in Test Software	Test Software Version
IEEE 802.11b	1M	1	2412.0	22.0	ART2-GUI (Ver. 2.3)
		6	2437.0	24.0	
		11	2462.0	20.0	
IEEE 802.11g	6M	1	2412.0	17.5	
		6	2437.0	24.0	
		11	2462.0	17.0	
IEEE 802.11n 20MHz	19.5M	1	2412.0	17.5	
		6	2437.0	24.0	
		11	2462.0	17.0	
IEEE 802.11n 40MHz	40.5M	3	2422.0	13.0	
		6	2437.0	24.0	
		9	2452.0	11.5	

Band	Data Rate	CH	Frequency (MHz)	Average Conducted power (dBm)			
				ANT-0	ANT-1	ANT-2	ANT-0+1+2
IEEE 802.11b	1M	1	2412.0	22.53	22.33	22.99	27.40
		6	2437.0	24.87	25.05	24.97	29.74
		11	2462.0	19.50	19.77	19.83	24.47
	2M	6	2437.0	24.38	24.27	24.38	29.11
	5.5M	6	2437.0	24.25	24.18	24.41	29.05
	11M	6	2437.0	24.19	24.01	24.27	28.93
IEEE 802.11g	6M	1	2412.0	18.15	17.86	18.73	23.03
		6	2437.0	24.58	24.65	24.86	29.47
		11	2462.0	16.71	17.01	16.97	21.67
	9M	6	2437.0	24.56	24.64	24.86	29.46
	12M	6	2437.0	24.52	24.61	24.83	29.43
	18M	6	2437.0	24.50	24.57	24.80	29.40
	24M	6	2437.0	24.48	24.54	24.44	29.26
	36M	6	2437.0	24.43	24.52	24.43	29.23
	48M	6	2437.0	24.38	24.49	24.40	29.19
	54M	6	2437.0	24.32	24.46	24.36	29.15
IEEE 802.11n 2.4GHz (20MHz)	19.5M	1	2412.0	18.12	17.97	18.67	23.04
		6	2437.0	24.34	24.50	24.70	29.29
		11	2462.0	16.53	16.93	16.85	21.54
	39M	6	2437.0	24.28	24.47	24.67	29.25
	58.5M	6	2437.0	24.23	24.44	24.64	29.21
	78M	6	2437.0	24.20	24.41	24.59	29.17
	117M	6	2437.0	24.17	24.36	24.56	29.14
	156M	6	2437.0	24.14	24.34	24.54	29.11
	175.5M	6	2437.0	24.11	24.31	24.51	29.08
	195M	6	2437.0	24.09	24.27	24.47	29.05
IEEE 802.11n 2.4GHz (40MHz)	40.5M	3	2422.0	13.11	12.89	13.73	18.03
		6	2437.0	23.86	23.84	24.02	28.68
		9	2452.0	11.27	11.11	12.02	16.26
	81M	6	2437.0	23.83	23.80	23.98	28.64
	121.5M	6	2437.0	23.81	23.76	23.95	28.61
	162M	6	2437.0	23.77	23.73	23.94	28.59
	243M	6	2437.0	23.76	23.70	23.91	28.56
	324M	6	2437.0	23.72	23.67	23.88	28.53
	364.5M	6	2437.0	23.70	23.66	23.85	28.51
	405M	6	2437.0	23.66	23.64	23.83	28.48



Beamforming on					
Band	Date Rate	CH	Frequency (MHz)	RF power setting in Test Software	Test Software Version
IEEE 802.11a	6M	36	5180.0	19	DOS
		40	5200.0	19	
		44	5220.0	19	
		48	5240.0	19	
		149	5745.0	19	
		153	5765.0	19	
		157	5785.0	19	
		161	5805.0	19	
		165	5825.0	19	
IEEE 802.11n 20MHz	26M	36	5180.0	19	
		40	5200.0	19	
		44	5220.0	19	
		48	5240.0	19	
		149	5745.0	19	
		153	5765.0	19	
		157	5785.0	19	
		161	5805.0	19	
		165	5825.0	19	
IEEE 802.11n 40MHz	54M	38	5190.0	19	
		46	5230.0	19	
		151	5755.0	19	
		159	5795.0	19	
IEEE 802.11ac 80MHz	117.2M	42	5210.0	19	
		155	5775.0	19	

Band	Data Rate	CH	Frequency (MHz)	Beamforming On Average Conducted power (dBm)				
				ANT-0	ANT-1	ANT-2	ANT-3	ANT-0+1+2+3
IEEE 802.11a	6M	36	5180.0	18.89	17.77	19.94	19.01	24.99
		40	5200.0	18.61	17.54	19.85	19.03	24.86
		44	5220.0	18.70	17.68	20.00	19.04	24.95
		48	5240.0	18.62	17.62	19.84	19.09	24.89
		149	5745.0	18.96	18.56	18.60	19.11	24.83
		153	5765.0	18.76	18.60	18.65	19.43	24.89
		157	5785.0	18.99	18.84	18.61	19.30	24.96
		161	5805.0	19.06	18.61	18.51	19.15	24.86
		165	5825.0	18.64	18.52	18.35	19.19	24.71
	54M	36	5180.0	18.08	17.04	19.21	18.34	24.26
		40	5200.0	18.55	17.51	19.39	19.07	24.71
		44	5220.0	18.67	17.70	19.98	19.08	24.95
		48	5240.0	18.63	17.61	19.80	19.13	24.89
		149	5745.0	18.53	18.22	18.25	18.76	24.47
		153	5765.0	18.41	18.25	18.27	19.01	24.52
		157	5785.0	18.62	18.42	18.26	18.78	24.55
		161	5805.0	18.71	18.26	18.15	18.73	24.49
		165	5825.0	18.30	18.17	17.97	18.75	24.33
IEEE 802.11n 5GHz (20MHz)	26M	36	5180.0	19.03	17.48	19.62	18.71	24.80
		40	5200.0	18.69	17.86	19.59	19.23	24.91
		44	5220.0	18.66	17.69	20.03	18.87	24.91
		48	5240.0	18.59	17.85	19.77	19.08	24.90
		149	5745.0	19.31	19.03	18.77	19.15	25.09
		153	5765.0	19.16	18.91	18.52	19.21	24.98
		157	5785.0	18.99	18.81	18.38	19.28	24.90
		161	5805.0	19.16	18.77	18.67	19.08	24.95
		165	5825.0	19.01	18.53	18.37	19.15	24.80
	260M	36	5180.0	18.85	17.35	19.49	18.58	24.66
		40	5200.0	18.53	17.74	19.47	19.07	24.77
		44	5220.0	18.52	17.53	19.89	18.74	24.77
		48	5240.0	18.47	17.68	19.59	18.95	24.75
		149	5745.0	18.78	18.46	18.22	18.62	24.55
		153	5765.0	18.60	18.35	17.98	18.63	24.42
		157	5785.0	18.38	18.31	17.81	18.76	24.35
		161	5805.0	18.61	18.21	18.09	18.53	24.39
		165	5825.0	18.49	18.00	17.77	18.58	24.24

Band	Data Rate	CH	Frequency (MHz)	Beamforming On Average Conducted power (dBm)				
				ANT-0	ANT-1	ANT-2	ANT-3	ANT-0+1+2+3
IEEE 802.11n 5GHz (40MHz)	54M	38	5190.0	19.24	20.16	18.29	19.11	25.27
		46	5230.0	18.67	19.66	17.61	18.58	24.71
		151	5755.0	19.17	19.00	18.96	19.72	25.24
		159	5795.0	19.11	18.76	18.85	19.55	25.10
	540M	38	5190.0	18.78	19.39	17.27	18.20	24.50
		46	5230.0	18.17	18.88	16.61	17.70	23.94
		151	5755.0	18.39	18.29	18.17	18.86	24.46
		159	5795.0	18.38	18.01	18.03	18.80	24.34
IEEE 802.11ac 5GHz (80MHz)	117.2M	42	5210.0	18.89	19.88	18.92	19.49	25.34
		155	5775.0	19.22	19.62	18.95	19.70	25.40
	1733.2M	42	5210.0	17.98	18.93	17.94	18.46	24.37
		155	5775.0	18.00	18.44	17.65	18.45	24.17

Beamforming off					
Band	Date Rate	CH	Frequency (MHz)	RF power setting in Test Software	Test Software Version
IEEE 802.11a	6M	36	5180.0	23	DOS
		40	5200.0	23	
		44	5220.0	23	
		48	5240.0	23	
		149	5745.0	23	
		153	5765.0	23	
		157	5785.0	23	
		161	5805.0	23	
		165	5825.0	23	
IEEE 802.11n 20MHz	26M	36	5180.0	23	
		40	5200.0	23	
		44	5220.0	23	
		48	5240.0	23	
		149	5745.0	23	
		153	5765.0	23	
		157	5785.0	23	
		161	5805.0	23	
		165	5825.0	23	
IEEE 802.11n 40MHz	54M	38	5190.0	23	
		46	5230.0	23	
		151	5755.0	22	
		159	5795.0	22	
IEEE 802.11ac 80MHz	117.2M	42	5210.0	23	
		155	5775.0	22	

Band	Data Rate	CH	Frequency (MHz)	Beanforming Off Average Conducted power (dBm)				
				ANT-0	ANT-1	ANT-2	ANT-3	ANT-0+1+2+3
IEEE 802.11a	6M	36	5180.0	21.34	20.22	22.39	21.46	27.44
		40	5200.0	21.41	20.34	22.65	21.83	27.66
		44	5220.0	21.50	20.48	22.80	21.84	27.75
		48	5240.0	21.42	20.42	22.64	21.89	27.69
		149	5745.0	23.17	22.77	22.81	23.32	29.04
		153	5765.0	22.96	22.80	22.85	23.63	29.09
		157	5785.0	23.19	23.04	22.81	23.50	29.16
		161	5805.0	23.26	22.81	22.71	23.35	29.06
		165	5825.0	22.84	22.72	22.55	23.39	28.91
	54M	36	5180.0	21.20	20.16	22.33	21.46	27.38
		40	5200.0	21.31	20.27	22.15	21.83	27.47
		44	5220.0	21.43	20.46	22.74	21.84	27.71
		48	5240.0	21.39	20.37	22.56	21.89	27.65
		149	5745.0	23.03	22.72	22.75	23.26	28.97
		153	5765.0	22.91	22.75	22.77	23.51	29.02
		157	5785.0	23.12	22.92	22.76	23.28	29.05
		161	5805.0	23.21	22.76	22.65	23.23	28.99
		165	5825.0	22.80	22.67	22.47	23.25	28.83
IEEE 802.11n 5GHz (20MHz)	26M	36	5180.0	22.03	20.48	22.62	21.71	27.80
		40	5200.0	21.56	20.73	22.46	22.10	27.78
		44	5220.0	21.53	20.56	22.90	21.74	27.78
		48	5240.0	21.46	20.72	22.64	21.95	27.77
		149	5745.0	23.61	23.33	23.07	23.45	29.39
		153	5765.0	23.46	23.21	22.82	23.51	29.28
		157	5785.0	23.29	23.11	22.68	23.58	29.20
		161	5805.0	23.46	23.07	22.97	23.38	29.25
		165	5825.0	23.31	22.83	22.67	23.45	29.10
	260M	36	5180.0	21.92	20.42	22.56	21.65	27.73
		40	5200.0	21.47	20.68	22.41	22.01	27.71
		44	5220.0	21.46	20.47	22.83	21.68	27.71
		48	5240.0	21.41	20.62	22.53	21.89	27.69
		149	5745.0	23.38	23.06	22.82	23.22	29.15
		153	5765.0	23.20	22.95	22.58	23.23	29.02
		157	5785.0	22.98	22.91	22.41	23.36	28.95
		161	5805.0	23.21	22.81	22.69	23.13	28.99
		165	5825.0	23.09	22.60	22.37	23.18	28.84

Band	Data Rate	CH	Frequency (MHz)	Beamforming Off Average Conducted power (dBm)				
				ANT-0	ANT-1	ANT-2	ANT-3	ANT-0+1+2+3
IEEE 802.11n 5GHz (40MHz)	54M	38	5190.0	22.50	23.42	21.55	22.37	28.53
		46	5230.0	22.63	23.62	21.57	22.54	28.67
		151	5755.0	23.17	23.00	22.96	23.72	29.24
		159	5795.0	23.11	22.76	22.85	23.55	29.10
	540M	38	5190.0	22.10	22.71	20.59	21.52	27.82
		46	5230.0	22.22	22.93	20.66	21.75	27.99
		151	5755.0	22.39	22.29	22.17	22.86	28.46
		159	5795.0	22.38	22.01	22.03	22.80	28.34
IEEE 802.11ac 5GHz (80MHz)	117.2M	42	5210.0	21.83	22.82	21.86	22.43	28.28
		155	5775.0	22.22	22.62	21.95	22.70	28.40
	1733.2M	42	5210.0	21.02	21.97	20.98	21.50	27.41
		155	5775.0	21.00	21.44	20.65	21.45	27.17

4. Test Result

Band	Data Rate	Frequency (MHz)	Limit (mw/cm ²)	Distance (cm) [R]	Max Tune-up Power(upper limit) (dBm) [P]	ANT Gain (dBi)	Numeric Gain (dBi) [G]	Duty Cycle	[P] x [G] With Duty Cycle (mW) [TP]	Power Density (mw/cm ²) [S]
IEEE 802.11b	1 M	2412	1.000	30	29	2.94	1.97	1	1564.830	0.138
		2437	1.000	30	30	2.94	1.97	1	1970.000	0.174
		2462	1.000	30	26	2.94	1.97	1	784.270	0.069
IEEE 802.11a Beamforming on for 4TX	6M	5180	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5200	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5220	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5240	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5745	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5765	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5785	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5805	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5825	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
IEEE 802.11a Beamforming off for 4TX	6M	5180	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5200	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5220	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5240	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5745	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5765	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5785	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5805	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5825	1.000	30	30	4.15	2.60	1	2600.000	0.230

Note: 1.The Numeric Gain calculated by $10^{(\text{ant. Gain(dBi)} / 10)}$.

2.If the conducted power of (IEEE 802.11g & IEEE 802.11n) are higher than IEEE 802.11b 0.25dB, (IEEE 802.11g & IEEE 802.11n) are supposed to be tested.

3.The Beamforming on ANT Gain = Directional gain

5150~5250MHz:Directional gain=GANT+10*log(NANT/NSS)=10.26dBi

5725~5850MHz:Directional gain=GANT+10*log(NANT/NSS)=10.15dBi

Band	Data Rate	Frequency (MHz)	Limit (mw/cm ²)	Distance (cm) [R]	Max Tune-up Power(upper limit) (dBm) [P]	ANT Gain (dBi)	Numeric Gain (dBi) [G]	Duty Cycle	[P] x [G] With Duty Cycle (mW) [TP]	Power Density (mw/cm ²) [S]
IEEE 802.11n 5GHz (20MHz) Beamforming on for 4TX	26M	5180	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5200	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5220	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5240	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5745	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5765	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5785	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5805	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5825	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
IEEE 802.11n 5GHz (20MHz) Beamforming off for 4TX	26M	5180	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5200	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5220	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5240	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5745	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5765	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5785	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5805	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5825	1.000	30	30	4.15	2.60	1	2600.000	0.230
IEEE 802.11n 5GHz (40MHz) Beamforming on for 4TX	54M	5190	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5230	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5755	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
		5795	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
IEEE 802.11n 5GHz (40MHz) Beamforming off for 4TX	54M	5190	1.000	30	30	4.26	2.67	1	2670.000	0.236
		5230	1.000	30	30	4.26	2.67	1	2670.000	0.236
		5755	1.000	30	30	4.15	2.60	1	2600.000	0.230
		5795	1.000	30	30	4.15	2.60	1	2600.000	0.230

Note: 1.The Numeric Gain calculated by $10^{(\text{ant. Gain(dBi)} / 10)}$.

2.The Beamforming on ANT Gain = Directional gain

5150~5250MHz:Directional gain=GANT+10*log(NANT/NSS)=10.26dBi

5725~5850MHz:Directional gain=GANT+10*log(NANT/NSS)=10.15dBi

Band	Data Rate	Frequency (MHz)	Limit (mw/cm ²)	Distance (cm) [R]	Max Tune-up Power(upper limit) (dBm) [P]	ANT Gain (dBi)	Numeric Gain (dBi) [G]	Duty Cycle	[P] x [G] With Duty Cycle (mW) [TP]	Power Density (mw/cm ²) [S]
IEEE 802.11ac 5GHz (80MHz) Beamforming on for 4TX	117.2M	5210	1.000	30	25.5	10.26	10.62	1	3768.120	0.333
		5775	1.000	30	25.5	10.15	10.35	1	3672.320	0.325
IEEE 802.11ac 5GHz (80MHz) Beamforming off for 4TX	117.2M	5210	1.000	30	29	4.26	2.67	1	2120.860	0.188
		5775	1.000	30	29	4.15	2.60	1	2065.250	0.183

Note: 1.The Numeric Gain calculated by $10^{(\text{ant. Gain(dBi)} / 10)}$.

2.The Beamforming on ANT Gain = Directional gain

5150~5250MHz:Directional gain=GANT+10*log(NANT/NSS)=10.26dBi

5725~5850MHz:Directional gain=GANT+10*log(NANT/NSS)=10.15dBi

5. Simultaneous Transmitting Evaluate

$$0.174 \text{ mw/cm}^2 \text{ (WLAN 2.4G)} + 0.333 \text{ mw/cm}^2 \text{ (WLAN 5G)} = 0.507 \text{ mw/cm}^2 < 1 \text{ mw/cm}^2$$

The Simultaneous result is pass.