

REAU Test Report No.: PSZ-QSZ2504020109RF06

C	HAN	INEL	(Channel 15	57	DETEC				
F	REQ		ANGE	30MHz ~ 1	GHz	DETEC	TOR FUNC	TION	Quasi-Peak ((QP)
			ANTEN	NA POLA	RITY & TE	ST DISTA	NCE: VERT	ICAL A	Т 3 М	
	Rg	Frequency [MHz]	QPK Level [dBµV/m]	QPK Limit [dBµV/m]	QPK Margin [dB]	Correction [dB]	Polarization	Azimut [deg]	h Antenna Height [m]	Meas. BW [kHz]
ĺ	1	43.968	26.53	40.00	13.47	-10.23	v	203	2.00	120.000
	1	74.766	16.13	40.00	23.87	-16.49	v	1	1.00	120.000
ĺ	1	138.349	22.17	43.50	21.33	-13.76	v	355.1	2.00	120.000
	1	217.453	16.61	46.00	29.39	-10.29	V	155.8	1.00	120.000
	1	351.943	18.39	46.00	27.61	-4.24	V	355.1	2.00	120.000
	1	869.681	25.24	46.00	20.76	1.73	v	359.1	1.00	120.000

REMARKS:

- Emission level (dBuV/m) = Read level (dBuV) + Correction Factor (dB/m). 1.
- 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
- 3. The other emission levels were very low against the limit.





ABOVE 1GHz WORST-CASE DATA

Band 1 802.11AC80 **CHANNEL** TX Channel 42 Peak (PK) DETECTOR **FUNCTION** Average (AV) **FREQUENCY RANGE** 1GHz ~ 40GHz ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M PK+ AVG Antenna Correction Frequency [MHz] PK+ Level PK+ Limit AVG Level AVG Limit Azimuth Margin [dB] Margin [dB] Height [m] Rg Polarization [dBµV/m] [dBµV/m] [dBµV/m] [dBµV/m] [dB] [deg] 2 10,420.000 44.87 74.00 29.13 34.59 54.00 19.41 6.98 н 359 2.00 2 15,630.000 47.77 74.00 37.44 16.56 9.07 н 1.00 26.23 54.00 359 Level in dBµV/m 75 72.5 70 67.5 65 62.5 60 57.5 55 52.5 50 47.5 45 42.5 40 37.5 35 32.5 30 27.5 25 22.5 20 17.5 15 12.5 10 7.5 5 2.5 0 2 G 3 G 4 G 5 G 6G 7G 8G 9G 10G 20 G 30 G 40 G Frequency in Hz 1 G O PK+ Level @CriticalPoint ↓ AVG Limit @FCC_RE_HF_LIMIT ↓ PK+ Limit @FCC_RE_HF_LIMIT ○ AVG Level @CriticalPoint

Note: For higher frequency, the emission is too low to be detected.



Test Report No.: PSZ-QSZ2504020109RF06

	ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M										
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,420.000	45.82	74.00	28.18	34.53	54.00	19.47	6.98	v	359.1	1.00
2	15,630.000	48.40	74.00	25.60	37.55	54.00	16.45	9.07	v	251.9	2.00
E 8	0							-			
2 1	5 -										
BP 72.	5 -										
. 7	0 – 5 –										
a 6	5										
62.	5 -										
6 57	0 – 5 –										
5	5 –										
52.	5 -										
5	0 – 5 –								Q		
4	5 –							φ			
42.	5 -										
4	0										
37.	5 -								Ψ		
32.	5										
3	0										
27.	5 -										
22.	5 -										
2	0										
17.	5 -										
12.	5										
1	0										
7.	5 -										
2.	5 -										
	0		1			1 1 1					
	1 G		2 G	3 G	4 G 5	G 6G 7	G 8G 9G 1	10 G	20 0	3	30 G 40 G
	1G ○AVGLevel@	CriticalPoint C	2 G) PK+ Level @CriticalP	3 G oint ∿AVG	4 G 5	G 6G 7 i MIT ∕\PK+Limit@FC	G 8G 9G 1	10 G	20 0	Э Fr	30 G equency i

REMARKS:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
- 2. Margin value = Limit value- Emission level.
- 3. 5210MHz: Fundamental frequency.



BUREAU VERITAS Test Report No.: PSZ-QSZ2504020109RF06

	Band 2 802.11 AC80									
CHANNEL	тх	Channel	58	D	етесто	R		Peal	k (PK)	
FREQUENCY RANG	E 1GI	Hz ∼ 400	GHz	F	UNCTIO	N		Aver	age (AV)
ANTI	ENNA PO	OLARIT	Y & TEST	F DIST	ANCE: HO	ORIZON	TAL A	AT 3	М	
Rg Frequency PK+ Level [MHz] [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limi [dBµV/m]	t AVG Margin [dB]	Correction [dB]	Polari	zation	Azimuth [deg]	Antenna Height [m]
2 10,580.000 46.87	74.00	27.13	35.40	54.00	18.60	7.19	ŀ	1	314.9	1.00
2 15,870.000 48.50	74.00	25.50	38.57	54.00	15.43	9.77	ŀ	4	1	2.00
75 - 97 72.5 97 67.5 62.5 - 62.5 - 52.5 - 52.5 - 52.5 - 52.5 - 52.5 - 52.5 - 53.5 - 52.5 - 53.5 - 35.5 - 30.7.5 - 32.5 - 30.7.5 - 32.5 - 30.7.5 - 32.5 - 30.7.5 - 31.6 - 11.6 -	23	36	4G 5	G 6G	76 86 96 ·	Q 0 0 0 0		220 (3 Fr	30 G 40 G equency in Hz



Test Report No.: PSZ-QSZ2504020109RF06

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	10,580.000	45.66	74.00	28.34	35.48	54.00	18.52	7.19	v	251.8	2.00
2	15,870.000	48.21	74.00	25.79	38.58	54.00	15.42	9.77	v	111.7	1.00
F 80)										
1 75	5 _										
72.	5 -										
70											
65	5 -										
62.5	5 -										
60)										
57.5	5 -										
52.	5 -										
50)								~		
47.	5							0	Ψ		
4:	5 -							4			
40	,										
37.	5								φ		
35	5										
32.5	5 -										
27.	5										
25	5										
22.	5										
20 17 -	5 -										
15	5										
12.	5										
10											
7.	5										
2.	5 -										
(1		1	1 1					-
	1 G		2 G	3 G	4G 5	G 6G 7	G 8G 9G 1	10 G	20 0	6	30 G 40 G

REMARKS:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
- 2. Margin value = Limit value- Emission level.
- 3. 5290MHz: Fundamental frequency.



BUREAU VERITAS Test Report No.: PSZ-QSZ2504020109RF06

	Band 3 802.11AC80								
CHANNEL	TX Cr	nannel 10	06	DET	ECTOR	R	Peak	(PK)	
FREQUENCY RANG	E 1GHz	~ 40GH	z	FUN			Aver	age (AV)	
ANTE	ENNA PO	DLARIT	Y & TES	F DISTAI	NCE: H	ORIZON	TAL AT 3	М	
Rg Frequency PK+ Level [MHz] [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2 11,060.000 47.08	74.00	26.92	35.59	54.00	18.41	7.36	н	254.3	2.00
2 16,590.000 50.69	74.00	23.31	40.24	54.00	13.76	12.38	Н	359	2.00
75 - 90 72.5 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 67.5 - 60 - 52.5 - 52.5 - 42.5 - 42.5 - 42.5 - 42.5 - 42.5 - 37.5 - 32.5 - 22.5 - 22.5 - 22.5 - 10 - 7.5 - 5 - 5 - 5 - 6 - 7.5 - 5 - 5 - <td>26</td> <td></td> <td>4 5 5</td> <td>G 6G 7</td> <td>3 86 96</td> <td>Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q</td> <td></td> <td>6</td> <td>30 G 40.0</td>	26		4 5 5	G 6G 7	3 86 96	Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q		6	30 G 40.0



AU Test Report No.: PSZ-QSZ2504020109RF06

Rg Frequet [MHz] 2 11,060.0 2 16,590.0 2 16,590.0 2 16,590.0 2 16,590.0 3 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 65 - 50 - 425 - 30 - 27.5 - 25 - 20 - 17.5 - 20 - 17.5 -	ency [dBµV/m 0.000 45.66 0.000 50.21	evel [dBµV/m] 36 74.00 21 74.00	PK+ Margin [dB] 28.34 23.79	AVG Level [dBµV/m] 35.44 40.39	AVG Limit [dBµV/m] 54.00 54.00	AVG Margin [dB] 18.56 13.61	Correction [dB] 7.36 12.38	Polarization V V	Azimuth [deg] 359 1	Antenna Height [m] 2.00 2.00
2 11,060.0 2 16,590.0 2 16,590.0 E 80 97 25 97 67.5 62.5 62.5 60 57.5 555 555 50 47.5 42.5 40 37.5 355 32.5 30 27.5 255 20 17.5 16 20	0.000 45.66	36 74.00 21 74.00	28.34 23.79	35.44 40.39	54.00	18.56 13.61	7.36 12.38		359	2.00 2.00
2 16,590.0 E 80 75 - 97 65 65 - 62.5 - 60 - 57.5 - 50 - 47.5 - 42.5 - 40 - 37.5 - 32.5 - 30 - 27.5 - 22.5 - 20 - 17.5 -	0.000 50.21	21 74.00	23.79	40.39	54.00	13.61	12.38	v	1	2.00
B B M 75 GP 72.5 GP 72.5 GS 65 60 - 57.5 - 52.5 - 50 - 42.5 - 42.5 - 30 - 37.5 - 30.7 - 27.5 - 20 - 17.5 - 20 - 17.5 -							<u>.</u>			
Anti 75 - 72.5 - 72.5 - 70 - 65 - 65 - 60 - 57.5 - 52.5 - 50 - 47.5 - 42.5 - 40 - 37.5 - 32.5 - 30.0 - 27.5 - 25 - 20 - 17.5 - 20 - 17.5 -							P			
CP 72.5 - 1 70 - - 65 - - - 65 - - - 60 - - - 57.5 - - - 52.5 - - - 50 - - - 42.5 - - - 42.5 - - - 30.5 - - - 32.5 - - - 30.0 - - - 27.5 - - - 22.5 - - - 20.0 - - - 17.5 - - - 20 - - - 17.5 - - -										
Image: Top of the second sec							Р 			
A) 65 62.5 60 62.5 60 57.5 - 50 - 42.5 - 40 - 37.5 - 32.5 - 30 - 27.5 - 22.5 - 20 - 17.5 - 25 - 20 - 17.5 - 20 - 17.5 -								P		
62.5 60 60 57.5 55 55 50								······		
60							P	φ		
37.5 - 55 - 50 - 47.5 - 42.5 - 40 - 37.5 - 32.5 - 30 - 27.5 - 25 - 20 - 17.5 - 50 - 26.5 - 20 - 17.5 -								φ		
52.5 - 50 - 47.5 - 42.5 - 40 - 37.5 - 30 - 27.5 - 25 - 20 - 17.5 - 26 - 27.5 - 26 - 27.5 - 26 - 27.5 - 26 - 27.5 - 26 - 27.5 - 26 - 27.5 - 20 - 17.5 -							φ			
50								•••••		
47.5 - 42.5 - 40 - 37.5 - 35 - 35 - 30 - 27.5 - 25 - 22.5 - 20 - 17.5 - 20 - 17.5 - 20 - 17.5 - 20 - 20 - 21.5 - 20 - 21.5 - 20 - 21.5 - 20 - 21.5 -							9			
42.5 - 40 - 37.5 - 35 - 32.5 - 30 - 27.5 - 25 - 22.5 - 20 - 17.5 - 15 - 15 - 22.5 - 20 - 17.5 - 22.5 - 20 - 22.5 - 20 - 22.5 - 20 - 22.5 - 22.5 - 20 - 22.5 - 20 - 22.5 - 25.5 -										
40 - 37.5 - 35 - 32.5 - 30 - 27.5 - 25 - 22.5 - 20 - 17.5 - 15 - 15 - 25 - 20 - 17.5 - 25 - 20 - 25 - 20 - 20 - 21.5 - 22 - 20 - 22 - 25 -										
37.5 - 35 - 32.5 - 27.5 - 25 - 25 - 20 - 17.5 - 20 - 15 -								φ		
35										
30 - 27.5 - 25 - 22.5 - 20 - 15 -							Ý			
27.5 - 25 - 22.5 - 20 - 17.5 -										
25 - 22.5 - 20 - 17.5 -										
22.5 - 20 - 17.5 -										
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5										
2.5 -										
0					i i i		- ; I			
1 G			20	10					-	an ca

REMARKS:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
- 2. Margin value = Limit value- Emission level.
- 3. 5530MHz: Fundamental frequency.
- 4. #: Out of restricted band.



BUREAU VERITAS Test Report No.: PSZ-QSZ2504020109RF06

CHANNEL FREQUENCY RANGE	TX Channe			Band 4 802.11AC80							
FREQUENCY RANGE	CHANNEL TA Channel 157 DETECTOR Peak (PK) ERECUENCY RANGE 1GHz ~ 40GHz FUNCTION Average (AV)										
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M											
ANTE	NNA POLA	RITY & TEST	DISTAN	NCE: HO	ORIZON	TAL AT 3	М				
Rg Frequency PK+ Level I [MHz] [dBµV/m]	PK+ Limit [dBµV/m] [dl	K+ rgin B] AVG Level [dBμV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]			
2 11,570.000 46.21	74.00 27.	.79 36.26	54.00	17.74	8.00	н	0.9	2.00			
2 17,355.000 51.11	74.00 22.	.89 39.80	54.00	14.20	13.24	н	0.9	2.00			
min 72.5 min 70 min 70 min 65 62.5 60 57.5 55 52.5 50 40 42.5 40 42.5 32.5 33 32.5 33 32.5 22.5 20 17.5 15 15 12.5 5 25.5 5 52.5 5 53 5 55 5 56 5 57 5 58 5 59 5 50 5 50 5 50 5 50 5 50 5 50 5 50 5 50 5 50 5 50 5 50 5 50 5 50 5 50 5											



Test Report No.: PSZ-QSZ2504020109RF06

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M											
Rg	Frequency [MHz]	PK+ Level [dBµV/m]	PK+ Limit [dBµV/m]	PK+ Margin [dB]	AVG Level [dBµV/m]	AVG Limit [dBµV/m]	AVG Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	11,570.000	47.95	74.00	26.05	36.90	54.00	17.10	8.00	v	276.6	1.00
2	17,355.000	49.67	74.00	24.33	39.60	54.00	14.40	13.24	v	64.3	2.00
E 80	0							1			1
7	5 -										
9 72.	5 -										
ב 70 ב 67.5	5 -										
ی 65	5										
62.	5 -										
57.5	5 -										
55	5										
52.	5 -								0		
47.5	5 -							Ģ	φ		
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42.	5 -										
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20 17.5	5 -										
15	5										
12.	5 -										
7.5	5 _										
Ę	5										
2.	5 -										
(1G		2 G	3 G	4G 5	G 6G 70	G 8G 9G	10 G	20 0	6	30 G 40 G
									200	- Fr	equency in Hz

REMARKS:

- 1. Emission Level = Read Level+ Antenna Factor + Cable Loss- Preamp Factor
- 2. Margin value = Limit value- Emission level.
- 3. 5785MHz: Fundamental frequency.

3.2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTE	D LIMIT (dBµV)
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56	56 to 46
0.5 ~ 5	56	46
5 ~ 30	60	50

NOTE:

- 1 The lower limit shall apply at the transition frequencies.
- 2 The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.
- 3 All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

Equipment Manufacturer Model No. Serial No. Last Cal. Next Cal. **EMI** Test Receiver Rohde&Schwarz ESR3 102749 Mar.28,24 Mar.27,26 ELEKTRA test software Rohde&Schwarz ELEKTRA NA N/A N/A LISN network Rohde&Schwarz ENV216 102640 Mar.28,24 Mar.27,26 CABLE Rohde&Schwarz W61.01 N/A Apr.27,24 Apr.26,25 N/A CABLE Rohde&Schwarz W61.01 Apr.26,25 Apr.25,26 CABLE Rohde&Schwarz W601 N/A Apr.27,24 Apr.26,25 W601 N/A CABLE Rohde&Schwarz Apr.26,25 Apr.25,26

3.2.2 TEST INSTRUMENTS

NOTE:

- 1. The test was performed in CE shielded room.
- 2. The calibration interval of the above test instruments is 12/24 months. And the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.



- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit 20dB) was not recorded.

NOTE: All modes of operation were investigated and the worst-case emissions are reported.



No deviation.

3.2.5 TEST SETUP





For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.2.6 EUT OPERATING CONDITIONS

Same as 3.1.7.

	CONDUCTED WORST-CASE DATA											
FRE RAN	QUENCY GE		15	0KHz ~ 3	0MHz	DETE RESC	CTOR FU	JNCTION BANDW	I & IDTH	Quasi- Averaç	Peak (je (AV)	QP) /), 9 kHz
INPU	JT POWER		12	0Vac, 60ł	Ηz		RONMEN	TAL		26deg	C, 51	%RH
TES	TED BY		Ha	nwen Xu								
Rg	Frequency [MHz]	QPK L [dBµ	evel V]	QPK Limit [dBµV]	QPK Margin [dB]	CAV Level [dBµV]	CAV: AVG Limit [dBµV]	CAV Margin [dB]	Corr [(ection dB]	Line	Meas. BW [kHz]
1	0.182	51.7	2	64.42	12.70	47.95	54.42	6.47	12	2.21	L1	9.000
1	0.420	23.9	4	57.45	33.51	23.32	47.45	24.13	11	1.76	L1	9.000
1	1.680	13.1	0	56.00	42.90	10.24	46.00	35.76	1 1	1.75	L1	9.000
1	5.033	16.2	9	60.00	43.71	13.78	50.00	36.22	11	1.79	L1	9.000
1	14.262	35.4	0	60.00	24.60	34.71	50.00	15.29	11	1.84	L1	9.000
1	26.840	27.3	3	60.00	32.67	23.02	50.00	26.98	11	1.90	L1	9.000

REMARKS:

- 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
- 2. "-": The Quasi-peak reading value also meets average limit and
- 3. measurement with the average detector is unnecessary.
- 4. The emission levels of other frequencies were very low against the limit.
- 5. Margin value = Limit value Emission level
- Correction factor = Insertion loss + Cable loss
 Emission Level = Correction Factor + Reading Value



Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, China

Tel: +86 (0557) 368 1008



BUREAU VERITAS Test Report No.: PSZ-QSZ2504020109RF06

FRE RAN	QUENCY GE		150)KHz ~ 3	0MHz	DETE RESC BAND	DETECTOR FUNCTION & RESOLUTION BANDWIDTH				Peak (ge (AV)	QP) /), 9 kHz
INPU	JT POWER		120)Vac, 60I	Ηz	ENVIE	RONMEN	TAL		26deg	. C, 51	%RH
TES	TED BY		Ha	nwen Xu								
Rg	Frequency [MHz]	QPK L [dBµ	evel V]	QPK Limit [dBµV]	QPK Margin [dB]	CAV Level [dBµV]	CAV: AVG Limit [dBµV]	CAV Margin [dB]	Corr [ection dB]	Line	Meas. BW [kHz]
1	0.182	51.8	35	64.42	12.57	47.87	54.42	6.55	1:	2.23	N	9.000
1	0.420	24.7	7	57.45	32.68	24.14	47.45	23.31	1:	2.81	Ν	9.000
1	1.379	7.4	4	56.00	48.56	1.70	46.00	44.30	1:	2.74	Ν	9.000
1	5.874	17.9	99	60.00	42.01	15.70	50.00	34.30	1:	2.77	Ν	9.000
1	14.262	36.2	20	60.00	23.80	35.52	50.00	14.48	1:	2.82	Ν	9.000
1	26.844	31.0	8	60.00	28.92	29.94	50.00	20.06	1:	2.88	Ν	9.000
∧r18p ui leva 62. 57. 52. 52. 52. 52. 52. 52. 52. 52. 52. 52	3. measu 4. The er 5. Margir 6. Correc 7. Emiss	Ireme mission value ction faion Le	nt with the second seco	vith the avvels of ot Limit valu r = Insert = Correc	/erage de her frequ ie - Emiss ion loss - tion Facto	encies w sion level + Cable lo or + Reac	unnecess ere very li pss ling Value	sary. ow again:	st the	limit.	* * * * * * * * *	M 30 M Juency in Hz
	◇ AVG Level @Spectrum C ◇ CAV Level @Final Result	verview s		∕ PK+ Level @Spectru ◇ QPK Level @Final R	im Overview esults	∕ AVG Limit @F ∕ QPK Limit @F	CC Part 15 Voltage Main CC Part 15 Voltage Mai	ns Class B ns Class B				

3.3.1 LIMITS OF MAXIMUM CONDUCTED OUTPUT POWER MEASUREMENT

Operation Band		EUT Category	LIMIT
		Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p ≦ 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
U-NII-1		Fixed point-to-point Access Point	1 Watt (30 dBm)
		Indoor Access Point	1 Watt (30 dBm)
	\checkmark	Client devices	250mW (24 dBm)
U-NII-2A		\checkmark	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-2C		\checkmark	250mW (24 dBm) or 11 dBm+10 log B*
U-NII-3		\checkmark	1 Watt (30 dBm)

NOTE: Where B is the 26dB emission bandwidth in MHz.



FOR POWER OUTPUT MEASUREMENT

802.11a, 802.11n/ac(20MHz), 802.11 n/ac (40MHz) ,802.11 ac (80MHz) TEST CONFIGURATION



FOR 26dB BANDWIDTH





BUREAU VERITAS Test Report No.: PSZ-QSZ2504020109RF06

3.3.3 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	R&S	ESW 44	101973	Mar.28,24	Mar.27,26
Open Switch and Control Unit	R&S	OSP-B157W8	100836	N/A	N/A
Vector Signal Generator	R&S	SMBV100B	102176	Mar.29,24	Mar.28,26
Signal Generator	R&S	SMB100A03	182185	Mar.29,24	Mar.28,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Hygrothermograph	DELI	20210528	SZ015	Sep.06,23	Sep.05,25
PC	LENOVO	E14	HRSW0024	N/A	N/A
CABLE	R&S	J12J103539- 00-1	SEP-03-20-069	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539- 00-1	SEP-03-20-069	Apr.26,25	Apr.25,26
CABLE	R&S	J12J103539- 00-1	SEP-03-20-070	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539- 00-1	SEP-03-20-070	Apr.26,25	Apr.25,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26
Power Meter	R&S	NRX	102380	Mar.28,24	Mar.27,26
Power Meter probe	R&S	NRP6A	102942	Mar.28,24	Mar.27,26

NOTE:

- 1. The calibration interval of the above test instruments is 12 /24months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
- 2. The test was performed in RF Oven room.

FOR POWER MEASUREMENT

For 802.11a, 802.11n/ac (20MHz), 802.11 n/ac (40MHz) ,802.11 ac (80MHz)

Method PM is used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

FOR 99 PERCENT OCCUPIED BANDWIDTH

The following procedure shall be used for measuring (99 %) power bandwidth:

- 1. Set center frequency to the nominal EUT channel center frequency.
- 2. Set span = 1.5 times to 5.0 times the OBW.
- 3. Set RBW = 1 % to 5 % of the OBW
- 4. Set VBW \geq 3 \cdot RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

6. Use the 99 % power bandwidth function of the instrument (if available).

7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

FOR 26dB BANDWIDTH

- 1) Set RBW = shall be in the range of 1% to 5% of the emission bandwidth.
- 2) Set the VBW > RBW.
- 3) Detector = Peak.
- 4) Trace mode = max hold.
- 5) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is in the range of 1% to 5%.



BUREAU VERITAS Test Report No.: PSZ-QSZ2504020109RF06

FOR 6dB BANDWIDTH

- 1. Set RBW = 100 kHz.
- 2. Set the video bandwidth (VBW) \geq 3 RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

3.3.5 DEVIATION FROM TEST STANDARD

No deviation.

3.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.



Please Refer to Appendix of this test report.

3.4.1 LIMITS OF MAXIMUM POWER SPECTRAL DENSITY MEASUREMENT

Operation Band	EUT Category		LIMIT	
U-NII-1		Outdoor Access Point		
		Fixed point-to-point Access Point	17dBm/ MHz	
		Indoor Access Point		
	\checkmark	Client devices	11dBm/ MHz	
U-NII-2A		\checkmark	11dBm/ MHz	
U-NII-2C		\checkmark	11dBm/ MHz	
U-NII-3			30dBm/ 500kHz	

3.4.2 TEST SETUP



3.4.3 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.



UREAU FRITAS Test Report No.: PSZ-QSZ2504020109RF06

3.4.4 TEST PROCEDURES

Using method SA-2(Band1/2/3)

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.

2) Set RBW = 1 MHz, Set VBW ≥ 3 MHz, Detector = RMS

3) Set Channel power measure = 1MHz

4) Sweep time = auto, trigger set to "free run".

5) Trace average at least 100 traces in power averaging mode.

6) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).

7) Record the max value

Using method SA-2 (Band4)

1) Set span to encompass the entire emission bandwidth (EBW) of the signal.

2) Set RBW = 300 kHz, Set VBW ≥ 1 MHz, Detector = RMS

3) Set Channel power measure = 1MHz

4) Sweep time = auto, trigger set to "free run".

5) Trace average at least 100 traces in power averaging mode.

6) Add 10 log(500kHz/RBW) to the test result. 10 log(500kHz/300KHZ) = 2.22dBm

7) Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission).

8) Record the max value

3.4.5 DEVIATION FROM TEST STANDARD

No deviation.

3.4.6 EUT OPERATING CONDITIONS

Same as 3.1.7.



Please Refer to Appendix of this test report.



3.5 AUTOMATICALLY DISCONTINUE TRANSMISSION

3.5.1 LIMIT OF AUTOMATICALLY DISCONTINUE TRANSMISSION

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information, or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

3.5.2 TEST INSTRUMENTS

Refer to section 3.3.3 to get information of above instrument.

3.5.3 TEST RESULT

While the EUT is not transmitting any information, the EUT can automatically discontinue transmission and become standby mode for power saving. The EUT can detect the controlling of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3.6.1 STANDARD APPLICABLE

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmits power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.6.2 ANTENNA CONNECTED CONSTRUCTION

An Dipole Antenna design is used.



The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit and PSD limit.

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Please refer to the attached file (Test Setup Photo).



No modifications were made to the EUT by the lab during the test.

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EMISSION BANDWIDTH

TEST RESULT

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
		5180	25.080	5167.840	5192.920		
		5200	23.200	5188.160	5211.360		
		5240	23.760	5228.200	5251.960		
		5260	23.080	5248.320	5271.400		
		5300	22.480	5288.960	5311.440		
		5320	24.120	5307.760	5331.880		
11A	Ant1	5500	22.920	5488.640	5511.560		
		5580	22.720	5568.600	5591.320		
		5700	22.640	5688.720	5711.360		
		5720	22.480	5708.440	5730.920		
		5720_UNII-2C	16.56	5708.440	5725		
		5720_UNII-3	5.92	5725	5730.920		
	Ant1	5180	23.680	5168.240	5191.920		
		5200	23.720	5188.120	5211.840		
		5240	23.680	5228.160	5251.840		
		5260	23.920	5247.520	5271.440		
		5300	23.600	5287.800	5311.400		
111/208180		5320	24.120	5307.680	5331.800		
1111203130		5500	24.240	5487.760	5512.000		
		5580	22.960	5568.680	5591.640		
		5700	23.120	5688.560	5711.680		
		5720	23.320	5708.240	5731.560		
		5720_UNII-2C	16.76	5708.240	5725		
		5720_UNII-3	6.56	5725	5731.560		
	Ant1	5190	41.600	5169.200	5210.800		
		5230	41.200	5209.680	5250.880		
11N40SISO		5270	41.040	5249.520	5290.560		
		5310	41.520	5289.280	5330.800		
		5510	41.360	5489.520	5530.880		
		5550	40.720	5529.600	5570.320		

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BUREAU VERITAS Test Report No.: PSZ-QSZ2504020109RF06

		5670	41.680	5649.120	5690.800	
		5710	42.000	5688.800	5730.800	
		5710_UNII-2C	36.2	5688.800	5725	
		5710_UNII-3	5.8	5725	5730.800	
		5180	23.440	5168.480	5191.920	
		5200	24.240	5188.200	5212.440	
		5240	23.760	5228.000	5251.760	
		5260	22.840	5248.640	5271.480	
		5300	24.000	5288.280	5312.280	
444.0000100	0	5320	23.440	5308.000	5331.440	
11AC205150	Ant1	5500	23.480	5488.000	5511.480	
		5580	23.280	5568.480	5591.760	
		5700	22.680	5688.640	5711.320	
		5720	23.520	5708.040	5731.560	
		5720_UNII-2C	16.96	5708.040	5725	
		5720_UNII-3	6.56	5725	5731.560	
	Ant1	5190	41.600	5169.280	5210.880	
		5230	41.440	5209.360	5250.800	
		5270	41.360	5249.280	5290.640	
		5310	41.200	5289.280	5330.480	
1100408180		5510	41.200	5489.440	5530.640	
1140403130		5550	41.040	5529.680	5570.720	
		5670	40.880	5649.360	5690.240	
		5710	40.800	5689.600	5730.400	
		5710_UNII-2C	35.4	5689.600	5725	
		5710_UNII-3	5.4	5725	5730.400	
	A ot 1	5210	90.080	5164.080	5254.160	
444.000010.0		5290	90.240	5243.440	5333.680	
		5530	88.800	5484.240	5573.040	
1140003130	AIIU	5690	88.000	5644.240	5732.240	
		5690_UNII-2C	80.76	5644.240	5725	
		5690_UNII-3	7.24	5725	5732.240	



TEST GRAPHS

















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