

SPECTRUM REPORT

Applicant: SHENZHEN WLINK TECHNOLOGY CO.,LIMITED

Address of Applicant: 319, YiBen Electronic Business Building, NO.1063 ChaGuang Road, XiLi, NanShan District, ShenZhen, China

Manufacturer/Factory: SHENZHEN WLINK TECHNOLOGY CO.,LIMITED

Address of Manufacturer/ Factory: 319, YiBen Electronic Business Building, NO.1063 ChaGuang Road, XiLi, NanShan District, ShenZhen, China

Equipment Under Test (EUT)

Product Name: Industrial 3G/4G Cellular Router

Model No.: WL-R520

Applicable standards: ETSI EN 301 908-1 V11.1.1 (2016-07)
ETSI EN 301 908-2 V11.1.1 (2016-07)
ETSI EN 301 908-13 V11.1.1 (2016-07)
ETSI EN 300 328 V2.1.1 (2016-11)

Date of sample receipt: May 25, 2017

Date of Test: May 25, 2017 – June 15, 2017

Date of report issued: June 15, 2017

Test Result : PASS *

*In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives. The protection requirements with respect to electromagnetic compatibility contained in Directive 2014/50/EU are considered.



Robinson Lo

Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	June 15, 2017	Original

Prepared By:

Edward Pan

Date:

June 15, 2017

Project Engineer

Check By:

Andy Wu

Date:

June 15, 2017

Reviewer

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4 Test Summary

UTRA FDD (EN 301 908-1 V7.1.1/EN 301 908-2 V7.1.1)				
Test Item	Test Requirement	Test method	Limit/Severity	Result
Radiated emissions	ETSI EN 301 908-1 Section 4.2.2	ETSI EN 301 908-1 Section 5.3.1	Table 4.2.2.2-1	Pass
E-UTRA (EN 301 908-1 V7.1.1/EN 301 908-13 V7.1.1)				
Test Item	Test Requirement	Test method	Limit/Severity	Result
Radiated emissions	ETSI EN 301 908-1 Section 4.2.2	ETSI EN 301 908-1 Section 5.3.1	Table 4.2.2.2-1	Pass
WIFI (EN 300 328 V1.9.1)				
Test Item	Test Requirement	Test method	Limit/Severity	Result
Transmitter unwanted emissions in the spurious domain	Clause 4.3.2.9	Clause 5.3.10.2	Clause 4.3.2.9.3	Pass
Receiver spurious emissions	Clause 4.3.2.10	Clause 5.3.11.2	Clause 4.3.2.10.3	Pass

Remark:

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	SHENZHEN WLINK TECHNOLOGY CO.,LIMITED
Address of Applicant:	319, YiBen Electronic Business Building, NO.1063 ChaGuang Road, XiLi, NanShan District, ShenZhen, China
Manufacturer/Factory:	SHENZHEN WLINK TECHNOLOGY CO.,LIMITED
Address of Manufacturer/ Factory:	319, YiBen Electronic Business Building, NO.1063 ChaGuang Road, XiLi, NanShan District, ShenZhen, China

5.2 General Description of EUT

Product Name:	Industrial 3G/4G Cellular Router
Model No.:	WL-R520
Operation Frequency:	UTRA-FDD: BAND 1, BAND 8 E-UTRA: BAND 1, BAND 3, BAND 7, BAND 8, BAND 20 WIFI: 2412MHz ~ 2472MHz
Modulation Type:	UTRA-FDD & E-UTRA: QPSK, 16QAM WIFI: DSSS, OFDM
Antenna Type:	External Antenna
Antenna Gain:	UTRA-FDD & E-UTRA WIFI:2dBi
Power Supply:	AC-DC Adapter Model:TS-A018-120015AZ Input:100-240V, 50/60Hz, 0.6A Output: DC 12.0V, 1.5A

5.3 Description of Support Units

The EUT was test as an independent unit

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016.

● **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Deviation from Standards

None

5.7 Other Information Requested by the Customer

None.

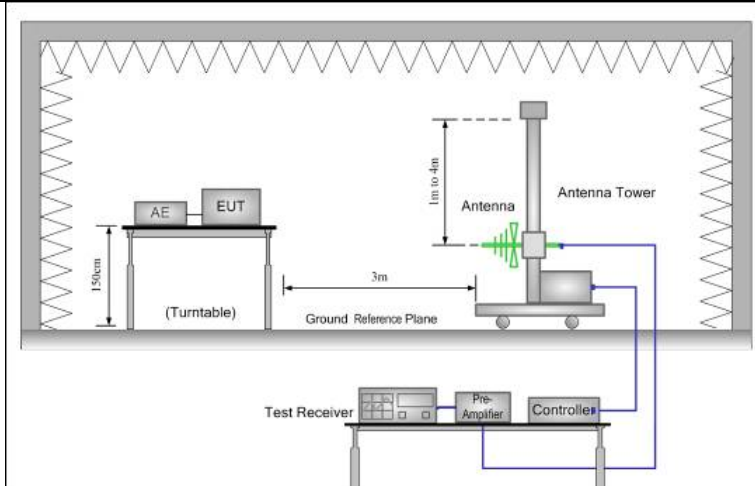
6 Test Instruments List

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 29 2016	June. 28 2017
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 29 2016	June. 28 2017
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June. 29 2016	June. 28 2017
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 29 2016	June. 28 2017
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 29 2016	June. 28 2017
9	Coaxial Cable	GTS	N/A	GTS211	June. 29 2016	June. 28 2017
10	Coaxial cable	GTS	N/A	GTS210	June. 29 2016	June. 28 2017
11	Coaxial Cable	GTS	N/A	GTS212	June. 29 2016	June. 28 2017
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 29 2016	June. 28 2017
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June. 29 2016	June. 28 2017
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 29 2016	June. 28 2017
15	Band filter	Amindeon	82346	GTS219	June. 29 2016	June. 28 2017
16	Constant temperature and humidity box	Oregon Scientific	BA-888	GTS248	June. 29 2016	June. 28 2017
17	D.C. Power Supply	Instek	PS-3030	GTS232	June. 29 2016	June. 28 2017
18	Universal radio communication tester	Rohde & Schwarz	CMU200	GTS235	June. 29 2016	June. 28 2017
19	Baseband Signal Generator and Fading Simulator	Rohde & Schwarz	AMU200A	GTS632	June. 29 2016	June. 28 2017
20	Splitter	Agilent	11636B	GTS237	June. 29 2016	June. 28 2017
21	Signal Generator	Rohde & Schwarz	SML03	GTS236	June. 29 2016	June. 28 2017

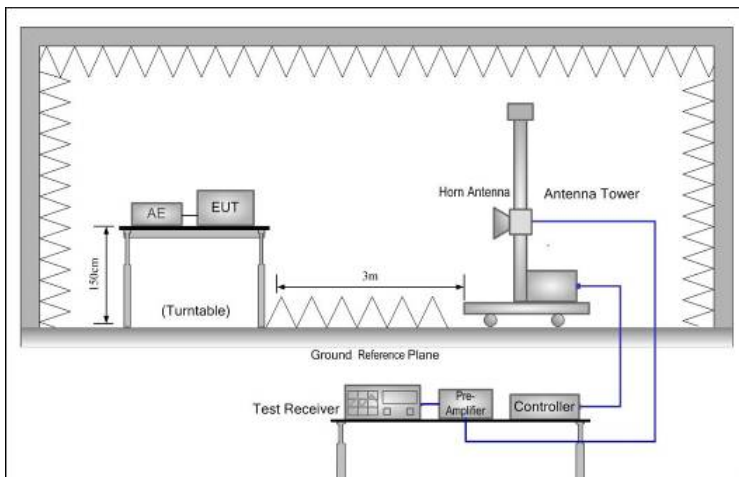
Conducted:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Signal Analyzer	Agilent	N9010A	MY48030494	June. 29 2016	June. 28 2017
2	vector Signal Generator	Agilent	E4438C	MY49070163	June. 29 2016	June. 28 2017
3	splitter	Mini-Circuits	ZAP-50W	NN256400424	June. 29 2016	June. 28 2017
4	Directional Coupler	Agilent	87300C	MY44300299	June. 29 2016	June. 28 2017
5	vector Signal Generator	Agilent	E4438C	US44271917	June. 29 2016	June. 28 2017
6	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54080020	June. 29 2016	June. 28 2017
7	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54110001	June. 29 2016	June. 28 2017
8	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY53480008	June. 29 2016	June. 28 2017
9	X-series USB Peak and Average Power Sensor	Agilent	U2021XA	MY54080019	June. 29 2016	June. 28 2017
10	4 Ch.Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063507	June. 29 2016	June. 28 2017
11	4 Ch.Simultaneous Sampling 14 Bits 2 MS/s	Agilent	U2531A	TW54063513	June. 29 2016	June. 28 2017
12	splitter	Mini	PS3-7	4463	June. 29 2016	June. 28 2017

6.1 Radiated Spurious emissions

Test Requirement:	UTRA FDD & E-UTRA: ETSI EN 301 908-1 clause 4.2.2 WIFI: ETSI EN 300 328 clause 4.3.2.9		
Test Method:	UTRA FDD & E-UTRA: ETSI EN 301 908-1 clause 5.3.1 WIFI: ETSI EN 300 328 clause 5.3.10.2		
Receiver setup:	Below 1GHz :RBW=100KHz, VBW=30KHz, Detector= peak Above 1GHz :RBW=1MHz, VBW=3MHz,Detector=Peak		
Limit:	UTRA-FDD & E-UTRA		
	Frequency		Limit
	30MHz to 1000 MHz		-36dBm
	1GHz to 12.75GHz		-30dBm
	GPS:		
	Frequency	Limit(narrowband)	Limit(wideband)
	30MHz to 1000 MHz	2nW(-57dBm)	-107dBm/Hz
	1GHz to 12.75GHz	20nW(-47dBm)	-97dBm/Hz
	WIFI (Transmitting mode)		
	Frequency Range	Maximum power e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz)	Bandwidth
	30 MHz to 47 MHz	-36 dBm	100 kHz
	47 MHz to 74 MHz	-54 dBm	100 kHz
	74 MHz to 87.5 MHz	-36 dBm	100 kHz
87.5 MHz to 118 MHz	-54 dBm	100 kHz	
118 MHz to 174 MHz	-36 dBm	100 kHz	
174 MHz to 230 MHz	-54 dBm	100 kHz	
230 MHz to 470 MHz	-36 dBm	100 kHz	
470 MHz to 862 MHz	-54 dBm	100 kHz	
862 MHz to 1 GHz	-36 dBm	100 kHz	
1 GHz to 12.75 GHz	-30 dBm	1 MHz	
WIFI (Receiving mode)			
Frequency	Maximum power e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz)	Measurement bandwidth	
30MHz to 1000 MHz	-57 dBm	100 kHz	
1GHz to 12.75GHz	-47 dBm	1 MHz	
Test mode:	Kept UE in Transmitting mode		
Test Instruments:	See section 6.0		
Test Frequency range:	UTRA FDD & E-UTRA & WIFI:30MHz to 12.75GHz		
Test setup:	Below 1GHz		



Above 1GHz



Test procedure:

Substitution method was performed to determine the actual ERP emission levels of the EUT.

The following test procedure as below:

1>.Below 1GHz test procedure:

1. On the test site as test setup graph above,the EUT shall be placed at the 1.5m support on the turntable and in the position closest to normal use as declared by the provider.
2. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter.The output of the test antenna shall be connected to the measuring receiver.
3. The transmitter shall be switched on, if possible, without modulation and the measuring receiver shall be tuned to the frequency of the transmitter under test.
4. The test antenna shall be raised and lowered from 1m to 4m until a maximum signal level is detected by the measuring receiver. Then the turntable should be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
5. Repeat step 4 for test frequency with the test antenna polarized horizontally.
6. Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The

	<p>center of the substitution antenna should be approximately at the same location as the center of the transmitter. At the lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.</p> <p>7. Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends vertically polarized, and with the signal generator tuned to a particular test frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.</p> <p>8. Repeat step 7 with both antennas horizontally polarized for each test frequency.</p> <p>9. Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps 7 and 8 by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula: $\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dB)}$ where: Pg is the generator output power into the substitution antenna.</p> <p>2>.Above 1GHz test procedure: Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber, and the test antenna do not need to raise from 1 to 4m, just test in 1.5m height.</p>
Measurement Record:	Uncertainty: $\pm 6\text{dB}$

Measurement Data:

UTRA-FDD:

Band I

Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
178.81	Vertical	-66.69	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
452.16	V	-70.11		
4100.00	V	-40.83		
5865.00	V	-43.32		
7868.00	V	-40.34		
170.07	Horizontal	-57.16		
477.42	H	-69.24		
4100.00	H	-47.47		
5865.00	H	-44.73		
7868.00	H	-40.18		

Band VIII

Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
164.08	Vertical	-62.51	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
364.89	V	-65.75		
4414.00	V	-38.73		
6179.00	V	-39.06		
8182.00	V	-38.26		
71.06	Horizontal	-53.10		
577.00	H	-65.10		
4414.00	H	-38.13		
6179.00	H	-38.87		
8182.00	H	-37.18		

**E-UTRA:
Band 1**

Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
113.29	Vertical	-65.23	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
459.01	V	-70.17		
4280.00	V	-42.09		
6420.00	V	-41.52		
8560.00	V	-43.22		
28.38	Horizontal	-66.50		
664.27	H	-69.38		
4280.00	H	-40.83		
6420.00	H	-42.01		
8560.00	H	-41.58		

Band 3

Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
131.84	Vertical	-68.48	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
478.41	V	-71.64		
3494.00	V	-42.39		
6988.00	V	-45.34		
10482.00	V	-42.50		
126.24	Horizontal	-58.63		
500.32	H	-71.09		
3494.00	H	-49.20		
6988.00	H	-46.29		
10482.00	H	-42.13		

Band 7

Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
124.42	Vertical	-65.87	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
381.86	V	-68.63		
5070.00	V	-41.66		
7605.00	V	-42.85		
10140.00	V	-42.30		
40.80	Horizontal	-55.86		
592.21	H	-68.58		
5070.00	H	-41.37		
7605.00	H	-41.80		
10140.00	H	-40.85		

Band 8

Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
141.23	Vertical	-68.62	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
524.17	V	-71.76		
1760.00	V	-42.51		
2640.00	V	-45.49		
3520.00	V	-42.66		
134.99	Horizontal	-58.74		
540.21	H	-71.24		
1760.00	H	-49.33		
2640.00	H	-46.41		
3520.00	H	-42.28		

Band 20

Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
132.43	Vertical	-65.12	-36 dBm below 1GHz, -30 dBm above 1GHz.	Pass
389.80	V	-70.08		
1694.00	V	-41.99		
2541.00	V	-41.40		
4235.00	V	-43.09		
43.65	Horizontal	-66.42		
603.41	H	-69.27		
1694.00	H	-40.73		
2541.00	H	-41.91		
4235.00	H	-41.47		

WIFI (Transmitting mode)

802.11b mode					
The lowest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result	
	polarization	Level(dBm)			
96.18	Vertical	-69.77	-54.00	Pass	
485.92	V	-66.23	-54.00		
4824.00	V	-42.02	-30.00		
7236.00	V	-44.64	-30.00		
9648.00	V	-41.19	-30.00		
12060.00	V	-42.34	-30.00		
178.83	Horizontal	-68.53	-54.00		
671.48	H	-64.11	-54.00		
4824.00	H	-44.31	-30.00		
7236.00	H	-44.77	-30.00		
The highest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)		Test Result
	polarization	Level(dBm)			
144.03	Vertical	-71.21	-36.00	Pass	
635.10	V	-62.55	-54.00		
4944.00	V	-42.53	-30.00		
7416.00	V	-44.11	-30.00		
9888.00	V	-42.87	-30.00		
12360.00	V	-42.46	-30.00		
256.40	Horizontal	-68.59	-36.00		
837.30	H	-61.60	-54.00		
4944.00	H	-43.67	-30.00		
7416.00	H	-44.55	-30.00		

802.11g mode					
The lowest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result	
	polarization	Level(dBm)			
101.87	Vertical	-70.70	-54.00	Pass	
403.57	V	-67.44	-36.00		
4824.00	V	-51.50	-30.00		
7236.00	V	-44.87	-30.00		
9648.00	V	-41.62	-30.00		
12060.00	V	-43.92	-30.00		
128.75	Horizontal	-68.70	-36.00		
729.43	H	-68.03	-54.00		
4824.00	H	-50.54	-30.00		
7236.00	H	-44.31	-30.00		
The highest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)		Test Result
	polarization	Level(dBm)			
157.48	Vertical	-69.84	-36.00	Pass	
989.90	V	-62.40	-36.00		
4944.00	V	-51.22	-30.00		
7416.00	V	-44.23	-30.00		
9888.00	V	-42.22	-30.00		
12360.00	V	-42.44	-30.00		
126.74	Horizontal	-69.09	-36.00		
796.21	H	-70.94	-54.00		
4944.00	H	-50.46	-30.00		
7416.00	H	-44.74	-30.00		

802.11n(HT20) mode					
The lowest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result	
	polarization	Level(dBm)			
197.88	Vertical	-69.11	-54.00	Pass	
801.36	V	-63.60	-54.00		
4824.00	V	-51.90	-30.00		
7236.00	V	-44.45	-30.00		
9648.00	V	-42.72	-30.00		
12060.00	V	-42.75	-30.00		
206.46	Horizontal	-69.33	-54.00		
743.33	H	-61.59	-54.00		
4824.00	H	-51.85	-30.00		
7236.00	H	-45.38	-30.00		
The highest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)		Test Result
	polarization	Level(dBm)			
287.48	Vertical	-68.48	-36.00	Pass	
931.65	V	-65.31	-36.00		
4944.00	V	-51.41	-30.00		
7416.00	V	-43.47	-30.00		
9888.00	V	-42.32	-30.00		
12360.00	V	-43.35	-30.00		
146.60	Horizontal	-71.31	-36.00		
903.87	H	-70.72	-36.00		
4944.00	H	-50.07	-30.00		
7416.00	H	-45.90	-30.00		

802.11n(HT40) mode					
The lowest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result	
	polarization	Level(dBm)			
118.46	Vertical	-68.89	-36.00	Pass	
507.74	V	-59.76	-54.00		
4844.00	V	-51.69	-30.00		
7266.00	V	-44.72	-30.00		
9688.00	V	-42.14	-30.00		
12110.00	V	-44.38	-30.00		
156.20	Horizontal	-67.76	-36.00		
727.87	H	-62.79	-54.00		
4844.00	H	-51.39	-30.00		
7266.00	H	-44.87	-30.00		
The highest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)		Test Result
	polarization	Level(dBm)			
120.61	Vertical	-68.59	-36.00	Pass	
877.14	V	-61.73	-36.00		
4924.00	V	-51.48	-30.00		
7386.00	V	-45.04	-30.00		
9848.00	V	-41.48	-30.00		
12310.00	V	-44.22	-30.00		
197.22	Horizontal	-66.29	-54.00		
630.35	H	-63.45	-54.00		
4924.00	H	-49.59	-30.00		
7386.00	H	-45.43	-30.00		

WIFI (Receiving mode)

802.11b mode					
The lowest channel					
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result	
	polarization	Level(dBm)			
121.31	Vertical	-71.22	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass	
780.99	V	-65.21			
4824.00	V	-64.36			
7236.00	V	-57.55			
9648.00	V	-54.06			
12060.00	V	-53.56			
234.00	Horizontal	-70.95			
501.43	H	-64.09			
4824.00	H	-61.29			
7236.00	H	-57.95			
The highest channel					
Frequency (MHz)	Spurious Emission				Limit (dBm)
	polarization	Level(dBm)			
102.80	Vertical	-71.80	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass	
608.00	V	-64.98			
4944.00	V	-62.60			
7416.00	V	-57.85			
9888.00	V	-54.08			
12360.00	V	-52.65			
182.28	Horizontal	-69.87			
525.48	H	-63.44			
4944.00	H	-61.92			
7416.00	H	-55.20			

802.11g mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
110.90	Vertical	-70.25	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
636.73	V	-66.24		
4944.00	V	-62.66		
7416.00	V	-57.75		
9888.00	V	-53.52		
12360.00	V	-52.90		
127.18	Horizontal	-69.87		
572.63	H	-66.02		
4944.00	H	-61.43		
7416.00	H	-55.19		
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
147.83	Vertical	-71.65	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
647.03	V	-72.36		
4944.00	V	-61.98		
7416.00	V	-57.05		
9888.00	V	-53.08		
12360.00	V	-52.54		
157.25	Horizontal	-71.14		
733.91	H	-67.41		
4944.00	H	-61.23		
7416.00	H	-56.62		

802.11n(HT20) mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
131.39	Vertical	-70.55	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
594.03	V	-68.70		
4824.00	V	-55.84		
7236.00	V	-60.11		
9648.00	V	-57.58		
12060.00	V	-55.29		
137.39	Horizontal	-70.63		
730.86	H	-63.18		
4824.00	H	-55.24		
7236.00	H	-60.67		
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
244.95	Vertical	-69.05	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
910.70	V	-66.43		
4944.00	V	-63.13		
7416.00	V	-59.90		
9888.00	V	-55.91		
12360.00	V	-54.16		
330.26	Horizontal	-66.04		
924.34	H	-62.26		
4944.00	H	-60.89		
7416.00	H	-56.55		

802.11n(HT40) mode				
The lowest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
128.93	Vertical	-67.94	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
776.74	V	-71.75		
4844.00	V	-63.12		
7266.00	V	-56.38		
9688.00	V	-52.74		
12110.00	V	-52.95		
178.64	Horizontal	-66.98		
884.36	H	-71.03		
4844.00	H	-61.43		
7266.00	H	-57.26		
The highest channel				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Test Result
	polarization	Level(dBm)		
320.06	Vertical	-68.85	2nW/ -57dBm below 1GHz, 20nW/ -47dBm above 1GHz.	Pass
632.23	V	-71.33		
4924.00	V	-62.60		
7386.00	V	-57.85		
9848.00	V	-54.08		
12310.00	V	-53.00		
376.31	Horizontal	-67.77		
642.57	H	-71.16		
4924.00	H	-61.59		
7386.00	H	-56.30		

7 Test Setup Photo



8 EUT Constructional Details

Reference to the test report No. GTSE201705000235E01

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