FCC Test Report

Report No.: AGC04845170301FE04

FCC ID	: 2ADLJ-VOLT8	
APPLICATION PURPOSE	: Original Equipment	
PRODUCT DESIGNATION	: Mobile Phone	
BRAND NAME	: VORTEX	
MODEL NAME	: VOLT 8, UW5009K	
CLIENT	: Xwireless LLC	
DATE OF ISSUE	: May. 03, 2017	
STANDARD(S) TEST PROCEDURE(S)	FCC Part 15.247 KDB 558074 v03r02	
REPORT VERSION	: V1.0	



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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	May. 03, 2017	Valid	Original Report

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	•••••
Applicant	Xwireless LLC
Address	11426 Rockville pike, Rockville, MD 20852United States
Manufacturer	Xwireless LLC
Address	11426 Rockville pike, Rockville, MD 20852United States
Product Designation	Mobile Phone
Brand Name	VORTEX
Test Model	VOLT 8
Series model	UW5009K
Difference Description	All the same except the model name.
Date of test	Apr. 17, 2017~Apr. 28, 2017
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BGN/RF

1. VERIFICATION OF CONFORMITY

We hereby certify that:

The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

donjon . strong Tested By Donjon Huang(Huang Apr. 28, 2017 Dongyang) Bong sie **Reviewed By** Bart Xie(Xie Xiaobin) May. 03, 2017 Approved By Solger Zhang(Zhang Hongyi) May. 03, 2017 Authorized Officer

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as "Tablet". It is designed by way of utilizing the DSSS and OFDM technology to achieve the system operation.

A major technical description of 2011's described as following			
2.412 GHz~2.462GHz			
IEEE 802.11b: 14.69 IEEE 802.11g: 12.84 dBm			
EEE 802.11n(20): 11.72 dBm, IEEE 802.11n(40): 10.82 dBm;			
DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)			
11			
T55_MB_V11			
full_t55_hengcs_x51_user_201704051821			
PIFA Antenna			
1.19dBi			
DC3.7V by Built-in Li-ion Battery			

A major technical description of EUT is described as following

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
	1	2412 MHZ
	2	2417 MHZ
	3	2422 MHZ
	4	2427 MHZ
	5	2432 MHZ
2400~2483.5MHZ	6	2437 MHZ
	7	2442 MHZ
	8	2447 MHZ
	9	2452 MHZ
	10	2457 MHZ
	11	2462 MHZ

Note: For 20MHZ bandwidth system use Channel 1 to Channel 11 For 40MHZ bandwidth system use Channel 3 to Channel 9

MCS Index	Nss	Modulation	R	NBPSC	NCBPS NDBPS		rate(I	ata Abps) nsGl		
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0

2.3. IEEE 802.11N MODULATION SCHEME

Symbol	Explanation	
NSS	Number of spatial streams	
R	Code rate	
NBPSC Number of coded bits per single carrie		
NCBPS	Number of coded bits per symbol	
NDBPS	Number of data bits per symbol	
GI Guard interval		

2.4. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2ADLJ-VOLT8** filing to comply with the FCC Part 15 requirements.

2.5. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.247 rules KDB 558074 D01 DTS Meas Guidance v03r02.

2.6. SPECIAL ACCESSORIES

Refer to section 5.2.

2.7. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

3. MEASUREMENT UNCERTAINTY

Conducted measurement: +/- 2.75dB Radiated measurement: +/- 3.2dB

4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION			
1	Low channel TX			
2	Middle channel TX			
3	High channel TX			
4	Normal operating			
Note: Transmit by 802.11b with Date rate (1/2/5.5/11) Transmit by 802.11g with Date rate (6/9/12/18/24/36/48/54) Transmit by 802.11n (20MHz) with Date rate (6.5/13/19.5/26/39/52/58.5/65)				

Transmit by 802.11n (20MHz) with Date rate (6.5/13/19.5/26/39/52/58.5/65)

Transmit by 802.11n (40MHz) with Date rate (13.5/27/40.5/54/81/108/121.5/135)

Note:

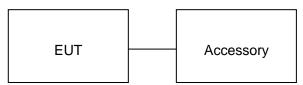
1. The EUT has been set to operate continuously on the lowest, middle and highest operation frequency Individually, and the eut is operating at its maximum duty cycle>or equal 98%

- 2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
- 3. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configure:



5.2. EQUIPMENT USED IN EUT SYSTEM

ltem	Equipment	Model No.	ID or Specification	Note
1	Mobile Phone	e VOLT 8 2ADLJ-VOLT8 E		EUT
2	Adapter	GS03	DC5V /700mA	Accessory
3	Battery	GS03	DC3.7V/2000mAh	Accessory
4	USB Cable	N/A	N/A	Accessory

Note: All the accessories have been used during the test in conduction emission test.

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	Conducted Spurious Emission	Compliant
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Line Conduction Emission	Compliant

Note: The EUT received power from DC3.8V lithium battery.

6. TEST FACILITY

Site	Dongguan Precise Testing Service Co., Ltd.
Location	Building D,Baoding Technology Park,Guangming Road2,Dongcheng District, Dongguan, Guangdong, China,
FCC Registration No.	371540
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.10:2013.

ALL TEST EQUIPMENT LIST

FOR RADIATED EMISSION TEST (BELOW 1GHZ)

Radiated Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 3, 2016	July 2, 2017
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 3, 2016	July 2, 2017
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 3, 2016	July 2, 2017
RF Cable	SCHWARZBECK	AK9515E	96221	July 3, 2016	July 2, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 5, 2016	June 4, 2017
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 5, 2016	June 4, 2017
Spectrum analyzer	Agilent	E4407B	MY46185649	June 5, 2016	June 4, 2017
Power Probe	R&S	NRP-Z23	100323	July 24,2016	July 23,2017
RF attenuator	N/A	RFA20db	68	N/A	N/A

FOR RADIATED EMISSION TEST (1GHZ ABOVE)

	Radiated Emission Test Site				
Name of Equipment	Manufacturer Model Number		Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 3, 2016	July 2, 2017
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	July 10, 2016	July 9, 2017
Spectrum Analyzer	Agilent	E4411B	MY4511453	July 3, 2016	July 2, 2017
Signal Amplifier	SCHWARZBECK	BBV 9718	9718-269	July 6, 2016	July 5, 2017
RF Cable	SCHWARZBECK	AK9515H	96220	July 7, 2016	July 6, 2017
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 5, 2016	June 4, 2017
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A

Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	9170-181	June 5, 2016	June 4, 2017
Power Probe	R&S	NRP-Z23	100323	July 24,2016	July 23,2017
RF attenuator	N/A	RFA20db	68	N/A	N/A

	Conducted Emission Test Site				
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 3, 2016	July 2, 2017
Artificial Mains Network	Narda	L2-16B	000WX31025	July 7, 2016	July 6, 2017
Artificial Mains Network (AUX)	Narda	L2-16B	000WX31026	July 7, 2016	July 6, 2017
RF Cable	SCHWARZBECK	AK9515E	96222	July 3, 2016	July 2, 2017
Shielded Room	CHENGYU	843	PTS-002	June 5,2016	June 4,2017

7. OUTPUT POWER

7.1. MEASUREMENT PROCEDURE

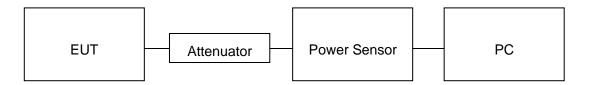
For max average conducted output power test:

- 1. Connect EUT RF output port to power probe through an RF attenuator.
- 2. Connect the power probe to the PC.
- 3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 4. Record the maximum power from the software.

Note : The EUT was tested according to KDB 558074v03r02 for compliance to FCC 47CFR 15.247 requirements.

7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

AVERAGE POWER SETUP



7.3. LIMITS AND MEASUREMENT RESULT

TEST ITEM	OUTPUT POWER
TEST MODE	802.11b with data rate 1

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	14.69	30	Pass
2.437	14.52	30	Pass
2.462	14.51	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11g with data rate 6

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	12.84	30	Pass
2.437	12.80	30	Pass
2.462	12.73	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11n 20 with data rate 6.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	11.37	30	Pass
2.437	11.72	30	Pass
2.462	11.31	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11n 40 with data rate 13.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	10.53	30	Pass
2.437	10.64	30	Pass
2.452	10.82	30	Pass

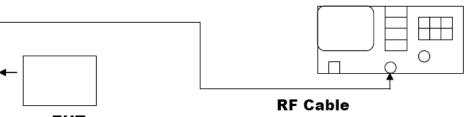
8. 6DB BANDWIDTH

8.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW \ge 3×RBW.
- 4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



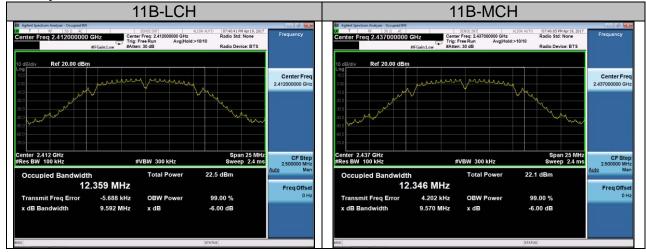
EUT

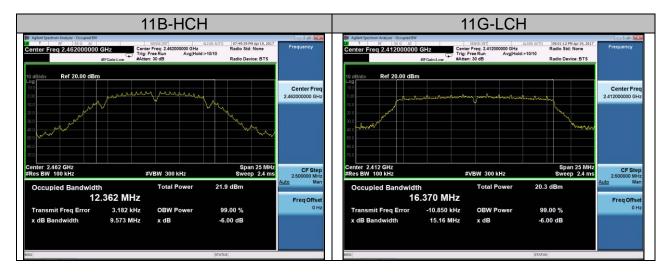
8.3. LIMITS AND MEASUREMENT RESULTS

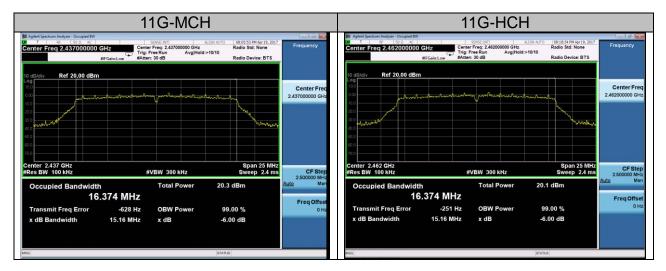
Mode	Channel	6dB Bandwidth [MHz]	Verdict
	LCH	9.592	PASS
11B	MCH	9.570	PASS
	НСН	9.573	PASS
	LCH	15.16	PASS
11G	MCH	15.16	PASS
	НСН	15.16	PASS
	LCH	17.62	PASS
11nHT20	MCH	17.62	PASS
	НСН	17.62	PASS
	LCH	36.07	PASS
11nHT40	MCH	36.09	PASS
	НСН	35.95	PASS

Spectrum Analyzer

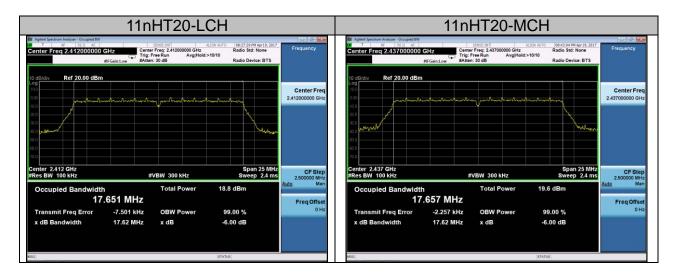
Test Graph

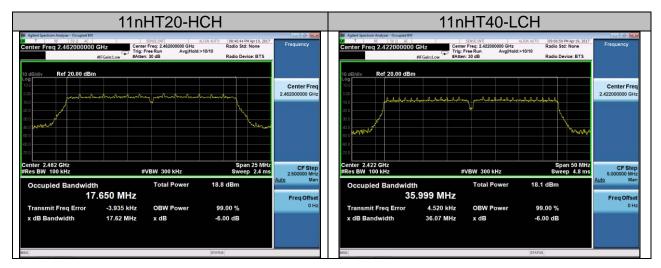


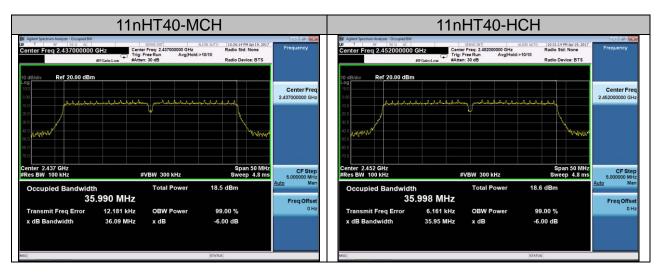




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9. CONDUCTED SPURIOUS EMISSION

9.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set SPA Trace 1 Max hold, then View.
- Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements. Owing to satisfy the requirements of the number of measurement points, we set the RBW=1MHz, VBW > RBW, scan up through 10th harmonic, and consider the tested results as the worst case, if the tested results conform to the requirement, we can deem that the real tested results(set the RBW=100KHz, VBW > RBW) are conform to the requirement.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 8.2.

9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT			
Applieghte Limite	Measurement Result		
Applicable Limits	Test Data	Criteria	
In any 100 KHz Bandwidth Outside the	At least -20dBc than the limit		
frequency band in which the spread spectrum	Specified on the BOTTOM	PASS	
intentional radiator is operating, the radio frequency	Channel		
power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power. In addition, radiation emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in§15.209(a))	At least -20dBc than the limit Specified on the TOP Channel	PASS	

Test Graph

11B-LCH	11B-LCH	
T BE 50.0 AC SENSE INT ALTON AUTO 07-43-40 PM Apr 19, 2017	Image: Second	Peak Search
Ref Offset2 dB Mkr1 2.413 GHz 10 dB/div Ref 10.00 dBm 6.359 dBm	Auto Tune Ref Offset 2 dB Mkr1 627.52 MHz 10 dB/div Ref 10.00 dBm -56.887 dBm	Next Peak
	Center Freq 200 50000000 GHz 100	Next Pk Right
325 400 100 100 100 100 100 100 100 100 100	Start Freq 0000000 GHz 200	Next Pk Left
10.00 (10	Stop Freq 300 3	Marker Delta
Auto	CF Step Start 30.0 MHz Stop 1.0000 GHz \$00.00000 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 92.73 ms (1001 pts) o Man \$100 kHz \$100 kHz \$100 kHz	Mkr→CF
MRF MODE TRC SCL X Y FUNCTION WIDTH FUNCTION WALE A	Instruction Instruction Instruction Participation Participation<	Mkr→RefLvl
		More 1 of 2
MBG STATUS	MEG STATUS	

11B-LCH		11B-MCH
Image: Second	Peak Search	Splant Spectrum Analyser - Swept SA SPIGE_DIT ALIGN AUTO 07-45 SPI 4/2 T SA V F MF 59.0 A/2 SPIGE_DIT ALIGN AUTO 07-45 SPI 4/2 T S, 212 T Start Freq 1.000000000 GHz Fract Trig: Free Run Avg Type: Log-Pwr Trig: Free Run Avg Type: Log-Pwr Figure Rev Affate: 30 dB Arg Type: Log-Pwr Trig: Free Run Avg Type: Log-Pwr
Ref Offset 2 dB Mkr1 24.925 GHz 10 dB/div Ref 10.00 dBm -46.052 dBm	Next Peak	Ref Offset 2 dB Mkr1 2.440 GHz Auto Tune 10 dB/div Ref 10.00 dBm 4.753 dBm
100	Next Pk Right	Log 0 00 .100 .200
100	Next Pk Left	318 Start Freq 400
	Marker Delta	010 Image: Control of the second
Start 10.000 CHz Stop 25.000 CHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.134 s (1001 pts) wirk Note Rtc Stall x Y Flaction Flaction withtin Flaction withtin	Mkr→CF	Start 1.000 GHz Stop 10.000 GHz CF stop 000000000 MHZ Stop 10.000 GHz CF stop 000000000 MHZ Stop 10.000 GHz CF stop 000000000 MHZ Mark Mon Root RH CS LL x Y Function Institution Instit
1 1 2 24.925 GHz 46.052 dBm 2 3 - - - 3 - - - - 4 - - - - 5 - - - - -	Mkr→RefLvl	N 1 f 2.440 GHz 4753 dBm 3 3 3 5 6 7
	More 1 of 2	
MSG STATUS		MSG STATUS

11B-MCH			11B-MCH
Aglert Spectrum Analyzer - Singel SA F	Avg Type: Log-Pwr TRACE 12 3 4 5 0 Run Avg Hold:>10/10 Type	Peak Search	Marker 19 See Ac SEE
Ref Offset 2 dB 10 dB/div Ref 10.00 dBm	Mkr1 924.34 MHz -56.970 dBm	NextPeak	Reforment all Mikr1 24,835 GHz
-10.0	-15.25 (59)	Next Pk Right	Sto Noto
400		Next Pk Left	Next Pk Left
800		Marker Delta	ano da anticipationa da anticipationa de la construcción de la constru
Start 30.0 MHz #Res BW 100 kHz #VBW 300 kHz	Stop 1.0000 GHz Sweep 92.73 ms (1001 pts)	Mkr→CF	Start 10.000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.434 s (1001 pts) Mkr⊸CF
MRR MODE TRCI SCL X Y 1 N 1 f 924.34 MHz -56.970 dB 3 4 4 5 6		Mkr→RefLvl	INFN MODE TPC SCL X Y PUACTON FUNCTION MODTH FUNCTION MODTH FUNCTION MODULE > 1 1 f 24.835 GHz 45760 dBm
7 8 9 10 11 11		More 1 of 2	7 9 10 1 of 2
NSG	STATUS		MSG STATUS

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11B-HCH		11G-LCH
If Applet Spectrum Analyzer - Swept SA SDECENT 41/04 AUTO 07/57:41 PH 4pr15, 2017 Marker 1 24, 79000000000 GHz Trig: Free Run AvgType: Log-Powr TRICE BEST PRO: Faur Trig: Free Run AvgType: Log-Powr TRICE BEST If Science Trig: Free Run AvgType: Log-Powr TRICE BEST If Science Trig: Free Run AvgType: Log-Powr TRICE BEST	Peak Search	Mit Agiter Spectrum Andrew Sweet 54. StrotE.Infl ALION AUTO 0660130 PM Agris, 2017 T Mit System Structure StrotE.Infl ALION AUTO 0660130 PM Agris, 2017 Start Freq 1.0000000000 SHZ Trig: Free Run Avg Type: Log-Pwr Trig: Start Frequency Ficinit Aw Matem: 30 Bit Array Avg Type: Log-Pwr Trig: Free Run Avg Type: Log-Pwr Trig: Free Run
Ref Offset2 dB Mkr1 24.790 GHz 10 dB/div Ref 10.00 dBm -45.001 dBm	NextPeak	Ref Offset 2 dB 10 dB/div Ref 10.00 dBm -0.831 dBm
100	Next Pk Right	Center Freq 5.0000000 GHz 0.00
	Next Pk Left	Start Freq
	Marker Delta	600 (750) (7
Start 10.000 GHz Stop 25.000 GHz #Res BW 100 Hz #VBW 300 kHz Sweep 1.434 s (1001 pts) win word fire Skill x Y #action #action	Mkr→CF	Start 1.000 GHz Stop 10.000 GHz CF Step 500.00000 MHz #Res BW 100 Hz #VBW 300 kHz Sweep 880.1 ms (1001 pts) Source0000 MHz Mart control Functions x y Fastrow Naming Auto
1 N 1 f 24.790 GHz 45.001 dBm	Mkr→RefLvl	1 N 1 f 2.413 GHz -0.831 dBm 2 3 4 5 6 6 7 6 4 6 6 6 7 7
7 8 9 9 10	More 1 of 2	
MSG STATUS		MSG STATUS

11G-LCH		11G-LCH
Marker 1 978.650000000 MHz File File All Dir Aufor 1 978.6500000000 MHz Marker 1 978.6500000000 MHz Trig: Free Run Resistor Arg Type: Log-Pwr Avg Hold:>1010 Trig: Gree Run Control	Peak Search	Balterl Spectrum Analyzer - Sengt SA Control Contro Co
Ref Offset 2 dB Mkr1 978.66 MHz 10 dBdiv Ref 10.00 dBm -57.138 dBm -57.138 dBm	NextPeak	Ref Offset2 dB Mkr1 24.760 GHz Next Peak 10 db/div Ref 10.00 dBm -45.436 dBm
0.00	Next Pk Right	0.00
300 409 400	Next Pk Left	
600	Marker Delta	00 Marker Delta 70.0 Marker Delta
Start 30.0 MHz Stop 1.0000 GHz #Res BW 100 HHz #VBW 300 HHz Sweep 92.73 ms (1001 pts) MM M00E THO Skil x Y Function Function within 1 punction within 1	Mkr→CF	Start 10.000 GHz #Kes BW 100 kHz #VBW 300 kHz Stop 25.000 GHz Sweep 1.434 s (1001 pHz) Mon load first Stall x y Function Function Mkr—CF
1 N 1 f 978.66 MHz _57.138 dBm	Mkr→RefLvl	N 1 f 24.760 GHz -45.436 dBm 3 4 4 4 4 4 4 4 4 4
	More 1 of 2	7 8 9 10 10 10 10
NSG STATUS		MSG STATUS

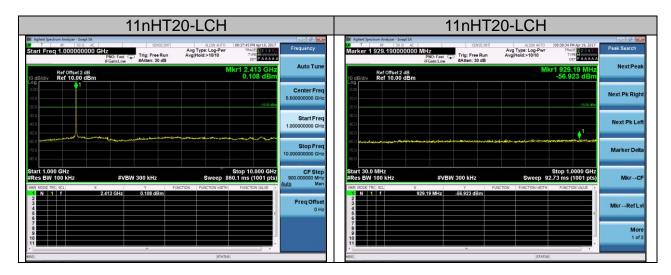
Report No.: AGC04845170301FE04 Page 23 of 43

11G-MCH		11G-MCH
K Aper System Analyse: west 54 T we 1940 AC 1940 T west 1940 AC	Frequency	Bit Agent System Audgers Singet Sin Constraint
10 dB/dV Ref 0.00 dBm 0.680 dBm	Auto Tune	Ref Offert 2 dB Mkr1 871.96 MHz NextPeak 10 dB/ddv Ref 10.00 dBm -56.838 dBm
	Center Freq 5.50000000 GHz	Cop Cop Cop Cop Cop Cop Cop Cop Cop Cop
50.0	Start Freq 1.000000000 GHz	
	Stop Freq 10.000000000 GHz	0 0 size and a second s
	CF Step 900.000000 MHz uto Man	Start 30.0 MHz Stop 1.0000 GHz #Res BW 100 kHz \$Weep 92.73 ms (1001 pts) Mitr.→CF Mitr.→CF
N 1 7 2431 GHz 0.880 dBm	Freq Offset 0 Hz	N 1 F 871,96 MHz 556,838 dBm 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
		More 1 of 2
MEG STATUS		MSG

11G-MCH		11G-HCH
If Aglets (paction Audion: Send Ac. SOUSE:NT 4100 k070 (061731 PM Agr15, 2017) Marker 1 24.//6000000000 GHz Free Run Avg Type: Log-Perr Hip: Fail: Qold Action 1000 THAC 12 4.37 PID: Fail: Qold Action 12000 Free Run Avg Type: Log-Perr Avg Type: Log-Perr Hip: Fail: Qold Action 1000 THAC 12 4.37	Peak Search	Bit Agtert Spectrum Analyser: Swept SA Control Spectrum Aug Provided Spectrum Control Spectrum Frequency
Ref Offset 2 dB Mkr1 24.760 GHz 10 dB/div Ref 10.00 dBm -45.427 dBm	Next Peak	Ref Offset 2 dB Mkr1 2.467 GHz
100	Next Pk Right	Con Center Freq 300 Center Freq 5.0000000 CH2
300	Next Pk Left	100 Start Freq 400 1.00000000 GHz
	Marker Delta	200
Start 10.000 GHz Stop 25.000 GHz #Res BW 100 kHz \$	Mkr→CF	Start 1.000 GH2 Stop 10.000 GH2 CF Step #00.00000 Hz Stop 10.000 GH2 Stop 10.000 GH2 900.00000 Hz 900.0000 Hz 900.00000 Hz 900.0000 Hz
1 N 1 f 247/00 GHz 45.427 dBm 3 4 5	Mkr→RefLvl	I N 1 f 2.467 GHz 1.662 dBm Freq Offset Freq Offset OHz
7	More 1 of 2	
MSG STATUS		MSG STATUS

	11G-HCH		11G-HCH	
[Agiket Spectrum Analyzer - Swept SA T BF 50.0 AC [arker 1 853,530000000 MHz PNO: Fast ↓ IFGain1.ow	SENSE:INT ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>10/10 Atten: 30 dB	08:23:42 PM Apr 19, 2017 TRACE 12 III III TYPE PAAAAA	Marker 1 24.8500000000000 GHz SRVE2ht1 ALIGN AUTO 062417 PM Apr 15, 2017 Marker 1 24.8500000000000 GHz Trig: Free Run Avg Type: Log-Pwr Trig: Run PRO /r str Fig: Free Run Avg Type: Log-Pwr Trig: Run PRO /r str Fig: Free Run Avg Type: Log-Pwr Trig: Free Run	Peak Search
Ref Offset 2 dB 0 dB/div Ref 10.00 dBm	Mł	r1 853.53 MHz -56.050 dBm	Ref Offset2 dB Mkr1 24.850 GHz 0 dB/div Ref 10.00 dBm -45.317 dBm 10 dB/div Ref 10.00 dBm -45.317 dBm	NextPeak
10.0		Next Pk Left	000 0000000000000000000000000000000000	Next Pk Right Next Pk Left
500 500	a Mandala a Marana ang ang ang ang ang ang ang ang ang	Marker Delta	500	Marker Delta
start 30.0 MHz Res BW 100 kHz #VBW 30	00 kHz Sweep 9	Stop 1.0000 GHz 2.73 ms (1001 pts) FUNCTION VALUE	Start 10.000 GHz Stop 25.000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 25.000 GHz Bw Morg Rr Sci x y Pactor Induction upper Pactors	Mkr→CF
1 N 1 f 853.53 MHz -50 2 3 4 5	6.050 dBm	Mkr→RefLvl	N 1 f 24.850 GHz 45.317 dBm	Mkr→RefLv
9 9 9 10		More 1 of 2		More 1 of 2
0	e:	•	King STATUS	

Report No.: AGC04845170301FE04 Page 24 of 43



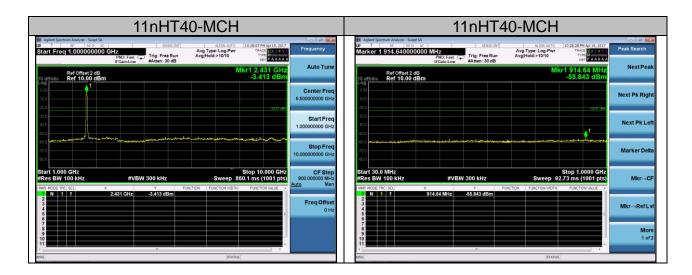
11nHT20-LCH		11nHT20-MCH
Bit Applie Experime Multiples Applie	Peak Search	Bit Against Spectrum Anderson Singer SA Street Singer Singer SA
Ref Offset2 dB Mkr1 24.805 GHz 10 dB/dlv Ref 10.00 dBm -45.215 dBm -45.215 dBm	NextPeak	Ref Offset 2 dB Mkr1 2.431 GHz Auto Tune 10 dB/dV Ref 10.00 dBm -0.325 dBm
100	Next Pk Right	Control Center Freq 0:0
330 420 000 000 000 000 000 000 000 000 00	Next Pk Left	010 Start Freq 410 810
	Marker Delta	000 000 000 000 000 000 000 000
Start 10.000 GHz Stop 25.000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.434 s (1001 pts)	Mkr→CF	Start 1.000 GHz Stop 10.000 GHz CF Step 900.00000 MHz Stop 10.000 GHz CF Step 900.00000 MHz Stop 10.000 GHz CF Step 900.00000 MHz Man
N 1 F 24.805 GHz 45.215 dBm Parton interval Parton interval	Mkr→RefLvl	MMR NOCE THC SLI X Y FUNCTION FUNCTION MODIL Funct
	More 1 of 2	
MSG STATUS		MSG STATUS

11nHT20-MCH		11nHT20-MCH				
B Agenetismer Analysis: See 34 SENSE: Wrt ALIGN M/TO 064:41.3 Wr Apr 19, 2017 Marrik for: 1 918,5200000000 MHz SENSE: Wrt Aug Type: Log-Pwr TMAC 19, 2017 Marrik for: 1 918,520000000 MHz Trig: Free Run Avg Type: Log-Pwr TMAC 19, 2017 PND: Fast Free Run Avg Type: Log-Pwr TMAC 19, 2017	Peak Search	B Agent Spectrum-Andrew Sheet SA Stript System 37 T Stript System 38 Agent Spectrum-Andrew Sheet SA 39 T Stript System 40 T Stript System Marker 1 24,730000000000 GHz Trig: Free Run Avg Type Leg-Pwr Trid: Trig: Free Run Avg Heids - 1010 cr Filteristrum Atter: 30 dB				
Ref Offset 2 dB Mkr1 918.52 MHz 10 dB/div Ref 10.00 dBm -56.550 dBm	NextPeak	Ref Offset 2 dB Mkr1 24,730 GHz 10 dB/dlv Ref 19.00 dBm -45.670 dBm				
020	Next Pk Right	0.00 Next Pk Right				
400 410 411 411 411 411 411 411 411 411	Next Pk Left					
	Marker Delta	And Marker Delta				
Star 30.0 MHz Stop 1.0000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 92.73 ms (1001 pts)	Mkr→CF	Start 10.000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.434 s (1001 pts) MkrCF				
NMM N I F 918.52 MHz -56.550 dBm Function Function worth Function wurdth Function wurdth	Mkr→RefLvl	Image: Note The: X Y Function Function width Funct				
	More 1 of 2	More 10				
STATUS		MSG STATUS				



11nHT20-HCH		11nHT40-LCH
Marker 1 24/790000000000 GHz Stote Setting Angle Setting Setti	Peak Search Next Peak	te Aginet Spectre Adapter Senge 3A Start Freq 1.000000000 GHz Frequency F
10 dBlaiv Ref 10.00 dBm -45.553 dBm	Next Pk Right	Control Center Freq 0:0 0 0:0 0
	Next Pk Left	30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
400	Marker Delta	0.0 70 B 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Start 10.000 CHz Stop 25.000 CHz Stop 25.000 CHz #Res BW 100 KHz #VBW 300 kHz Stweep 1.134 s (1001 pts) MMI MOSE FIGURATION TO A strength of the strenghof the strength of the strengthof the strength of	Mkr→CF	Start 1.000 CHz Stop 10.000 CHz CF Step 90.000000 MHz #VEW 300 kHz Sweep 860.1 ms (1001 pts) Sweep 860.1 ms (1001 pts) Mon Root Rts Sall x y Factors
N 1 1 7 24.700 GHz 46.553 dBm	Mkr→RefLvl	N 1 1 7 2.422 GHz -3.255 dBm Freq Offset 0 Hz
	More 1 of 2	

	11nHT4	IO-LCH		11nHT40-LCH					
Agilent Spectrum Analyzer - Swept SA T IF SOB AC Marker 1 857.41000000		ALIGN AUTO 09:16:56 PM Apr 19, 2017 Avg Type: Log-Pwr TRACE 12:00 Avg[Hold:>10/10 TVPE 0 DET P A A A A A	Peak Search	Mailent Spectrum Analyzer - Swiget SA OP NF So Q AC Marker 1 24,8800000000000 N N N	GHZ PNO: Fast FGain:Low #Atten: 30 dB	ALIGN AUTO 09:17:40 PM Apr 19, 2017 Avg Type: Log-Pwr TRACE 0 2 44 Avg Hold:>10/10 Trine M Der P A A A A	Peak Search		
Ref Offset 2 dB	n	Mkr1 857.41 MHz -56.927 dBm	Next Peak	Ref Offset 2 dB		Mkr1 24.880 GHz -45.798 dBm	NextPeak		
10.0 20.0 30.0			Next Pk Right	-10.0		-25.00 m	Next Pk Right		
40.0 50.0	Manufa sa manakan kara dari fi ki ki kara tari si si manga sa	1	Next Pk Left	-10 0 -50 0 -60 0		har and a share and a share a	Next Pk Left		
			Marker Delta	-70.0					
70.0 80.0				80.0			Marker Delta		
700 800 Start 30.0 MHz Res BW 100 kHz	#VBW 300 kHz	Stop 1.0000 GHz Sweep 92.73 ms (1001 pts)	Mkr→CF	Start 10.000 GHz #Res BW 100 kHz	#VBW 300 kHz	Stôp 25.000 GHz Sweep 1.434 s (1001 pts)	Marker Delta Mkr→CF		
Res BW 100 kHz		Stop 1.0000 GHz Sweep 92.73 ms (1001 pts) scribin – Punctida width – Punctida widue – c	Mkr→CF Mkr→RefLvi	#Res BW 100 kHz		Stop 25.000 GHz Sweep 1.434 s (1001 pts) TOR FRACTION WOTH FUNCTION VALUE 1			
Res BW 100 kHz	X Y FU	Sweep 92.73 ms (1001 pts)		#Res BW 100 kHz	Y FUNC	Sweep 1.434 s (1001 pts)	Mkr→CF		



11ı	nHT40-MCH		11nHT40-HCH
	SENSE:INT ALIGN AUTO Avg Type: Log-Pwr rig: Free Run Avg[Hold:>10/10 Atten: 30 dB	10:29:29 PM Apr 19, 2017 TRACE Dates TYPE DATA AAA DEE DATA AAAA Next Peak	Agent Spectra Approx. Sang 54 29 T Start Freq 1.000000000 GHz Trig Free Run IFGala.com Zatten: 30 dB Trig See Com Zatten: 30 dB Trig See Com Zatten: 30 dB Trig See Com Zatten: 20 dB
Ref Offset 2 dB 10 dB/div Ref 10.00 dBm	M	-46.256 dBm	Ref Offset 2 dB MKT1 2.438 GHZ 10 dB/dv Ref 10.00 dBm -2.939 dBm
-10.0		Next Pk Right	100 Center Freq 108 5000000 GH₂ 20 5000000 GH₂
300	and the second	Next Pk Left	308 Start Freq 409 1.00000000 GHz
600 700 800		Marker Delta	000 000 700 000
Start 10.000 GHz #Res BW 100 kHz #VBW 30	00 kHz Sweep	Stop 25.000 GHz 1.434 s (1001 pts) Mkr→CF	Start 1.000 GHz Stop 10.000 GHz CF Step 900.00000 MHz Stop 10.000 GHz CF Step 900.00000 MHz
	Y FUNCTION FUNCTION WOTH		MM NODE TRC SLI X Y FUNCTION FUNCTION MDTH
7 8 9 10 11		More 1 of 2	
MSG	STATUS		MSG STATUS

11nHT40-HCH		11nHT40-HCH
Ef Agler Spectrum Andrew Spect 3A 20 T = 6 0 0 cm (1000 MT/2 Marken 1475-2300000000 MHz FPI0: Fast FPI0: Fast FPI0: Fast FPI0: Fast For Fast For Fast For Fast	Peak Search	Constrained Augente Standing Stand
Ref Offset2 dB Mkr1 475.23 MHz 0 dB/dtv Ref 10.00 dBm -56.119 dBm 100	Next Pk Right	Ref Orfset 2 dB Mkr1 24,715 GHz 10 dBldiv Ref 10.00 dBm -44.709 dBm -44.709 dBm 9 00
200	Next Pk Left	
200 m. Lesen (1912) en la constanta de la constanta de constanta de la constanta de la constant 	Marker Delta	(1)
Start 30.0 MHz Stop 1.0000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 92.73 ms (1001 pts) INV MODE THE SEC. x Y INV 11 ft 75.23 MHz 55 119 dBm	Mkr→CF	Start 10.000 GHz Stop 25.000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.434 s (1001 pts) MM MORE TRC; ScJ X Y Function 1 1 1 24.715 GHz 44.709 dBm/dt
2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Mkr→RefLvl	Mir-RefLyl
	More 1 of 2	More 9 10 11 1 of 2
MSG STATUS		MSG STATUS

10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

10.1 MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set SPA Trace 1 Max hold, then View.

Note: The method of AVGPSD in the KDB 558074 item 10.3 was used in this testing.

10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 8.2.

10.3 MEASUREMENT EQUIPMENT USED

Refer To Section 6.

10.4 LIMITS AND MEASUREMENT RESULT

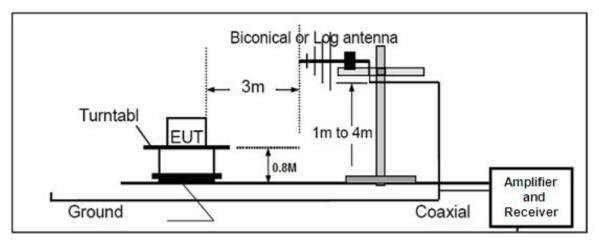
Mode	Channel	PSD [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
	LCH	-7.495	8	PASS
11B	MCH	-8.639	8	PASS
	НСН	-6.781	8	PASS
	LCH	-11.126	8	PASS
11G	MCH	-10.082	8	PASS
	НСН	-10.014	8	PASS
	LCH	-12.462	8	PASS
11nHT20	MCH	-13.273	8	PASS
	НСН	-13.973	8	PASS
	LCH	-17.075	8	PASS
11nHT40	MCH	-16.531	8	PASS
	НСН	-15.701	8	PASS

11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

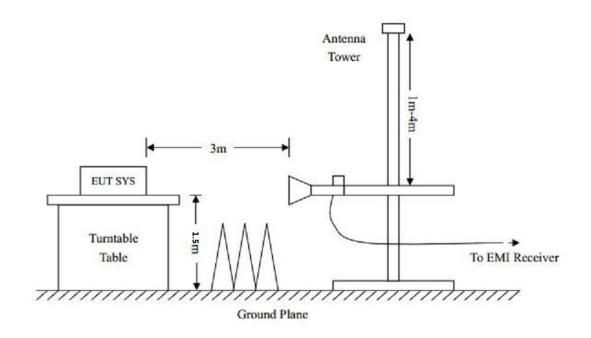
- 1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer. The EUT was placed on the top of the turntable 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8.If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.

11.2. TEST SETUP



RADIATED EMISSION TEST SETUP 30MHz-1000MHz





11.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)		
0.009~0.490	2400/F(KHz)	300		
0.490~1.705	24000/F(KHz)	30		
1.705~30.0	30	30		
30~88	100	3		
88~216	150	3		
216~960	200	3		
Above 960	500	3		

Note: All modes were tested For restricted band radiated emission,

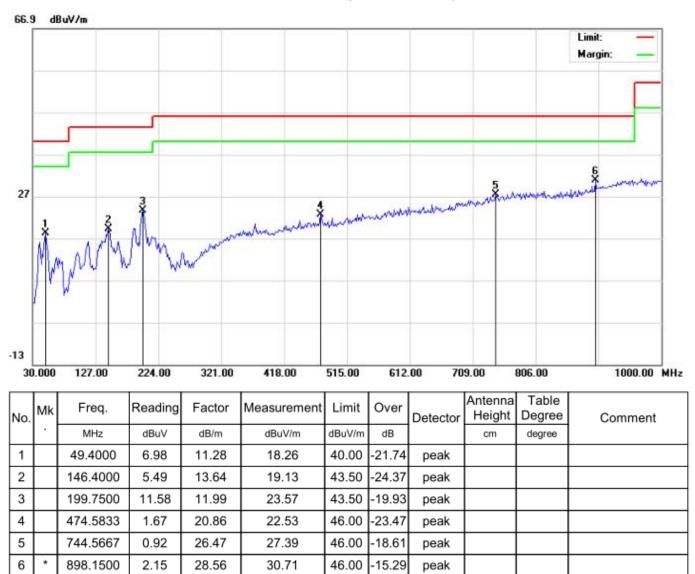
the test records reported below are the worst result compared to other modes.

11.4. TEST RESULT

RADIATED EMISSION BELOW 30MHZ

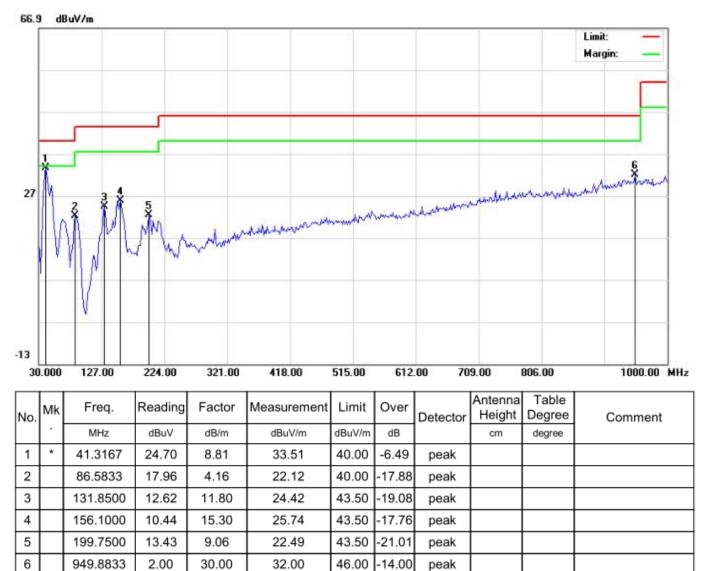
No emission found between lowest internal used/generated frequencies to 30MHz.

RADIATED EMISSION BELOW 1GHZ



RADIATED EMISSION TEST- (30MHZ-1GHZ) -HORIZONTAL

RESULT: PASS



RADIATED EMISSION TEST- (30MHZ-1GHZ) -VERTICAL

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin= Result -Limit.

2. The "Factor" value can be calculated automatically by software of measurement system.

3. All test modes had been pre-tested. The 802.11b at low channel is the worst case and recorded in the report.

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	Common
			TX 11b 2412M	Hz			
4824	41.05 10.44 51.49 74		74	-22.51	Pk	Horizontal	
4824	30.10	10.44	40.54	54	-13.46	AV	Horizontal
7236	41.72	10.39	52.11	74	-21.89	pk	Horizontal
7236	31.83	10.39	42.22	54	-11.78	AV	Horizontal
4824	40.69	10.39	51.08	74	-22.92	Pk	Vertical
4824	28.91	10.39	39.30	54	-14.70	AV	Vertical
7236	41.52	10.68	52.20	74	-21.80	Pk	Vertical
7236	30.33	10.68	41.01	54	-12.99	AV	Vertical
			TX 11b 2437M	Hz			
4874	41.83	10.39	52.22	74	-21.78	Pk	Horizontal
4874	32.29	10.39	42.68	54	-11.32	AV	Horizontal
7311	40.48	12.68	53.16	74	-20.84	Pk	Horizontal
7311	27.11	12.68	39.79	54	-14.21	AV	Horizontal
4874	43.59	10.39	53.98	74	-20.02	Pk	Vertical
4874	30.99	10.39	41.38	54	-12.62	AV	Vertical
7311	42.28	12.68	54.96	74	-19.04	Pk	Vertical
7311	28.17	12.68	40.85	54	-13.15	AV	Vertical
			TX 11b 2462M	Hz			
4924	42.72	10.39	53.11	74	-20.89	pk	Horizontal
4924	29.38	10.39	39.77	54	-14.23	AV	Horizontal
7386	40.57	12.68	53.25	74	-20.75	pk	Horizontal
7386	29.27	12.68	41.95	54	-12.05	AV	Horizontal
4924	43.33	10.39	53.72	74	-20.28	pk	Vertical
4924	31.60	10.39	41.99	54	-12.01	AV	Vertical
7386	40.70	12.68	53.38	74	-20.62	pk	Vertical
7386	29.81	12.68	42.49	54	-11.51	AV	Vertical

RESULT: PASS

Note:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2. Emission Level = Meter Reading + Factor

3. Margin = Emission Leve - Limit

4. All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.

No recording in the test report at least have 20dB margin.

12. BAND EDGE EMISSION

12.1. MEASUREMENT PROCEDURE

1)Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

2)Conducted Emissions at the bang edge

a)The transmitter output was connected to the spectrum analyzer

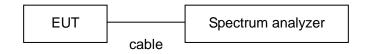
b)Set RBW=100kHz,VBW=300kHz

c)Suitable frequency span including 100kHz bandwidth from band edge

12.2. TEST SET-UP

Radiated same as 11.2

Conducted set up



Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment		
(MHz)	(dBµV)	(dB)	(dBµV/m) (dBµV/m) (dB)		(dB)	Туре			
			TX 11b 2	2412MHz					
2399.9	2399.9 65.90 -13 52.90 74 -21.10								
2399.9	56.68	-13	43.68	54	-10.32	AV	Horizontal		
2400	66.18	-12.99	53.19	74	-20.81	pk	Horizontal		
2400	52.52	-12.99	39.53	54	-14.47	AV	Horizontal		
2399.9	68.83	-12.97	55.86	74	-18.14	pk	Vertical		
2399.9	54.81	-12.97	41.84	54	-12.16	AV	Vertical		
2400	65.38	-12.94	52.44	74	-21.56	pk	Vertical		
2400	55.23	-12.94	42.29	54	-11.71	AV	Vertical		
			TX 11b 2	2462MHz					
2483.5	66.18	-12.78	53.40	74	-20.60	pk	Horizontal		
2483.5	55.83	-12.78	43.05	54	-10.95	AV	Horizontal		
2483.6	66.36	-12.77	53.59	74	-20.41	pk	Horizontal		
2483.6	49.95	-12.77	37.18	54	-16.82	AV	Horizontal		
2483.5	68.44	-12.76	55.68	74	-18.32	pk	Vertical		
2483.5	50.17	-12.76	37.41	54	-16.59	AV	Vertical		
2483.6	68.01	-12.72	55.29	74	-18.71	pk	Vertical		
2483.6	52.47	-12.72	39.75	54	-14.25	AV	Vertical		

12.3. Radiated Test Result

RESULT: PASS

Note: Scan with 11b,11g,11n, the worst casw is 11b Mode

Factor=Antenna Factor + Cable loss - Amplifier gain,

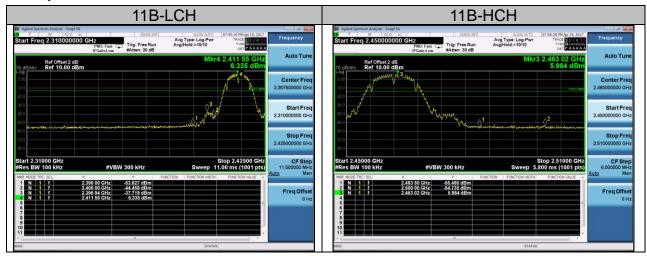
Emission Level = Meter Reading + Factor

Margin= Emission Level -Limit.

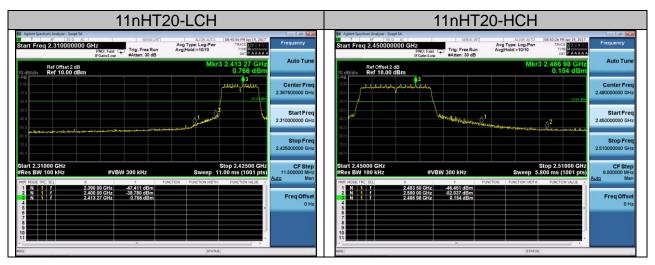
The "Factor" value can be calculated automatically by software of measurement system.

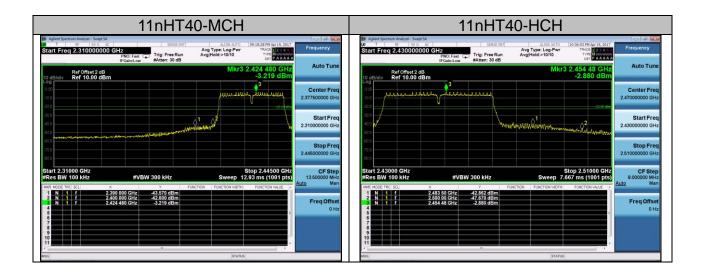
12.4. Conducted Test Result

Test Graph









13. FCC LINE CONDUCTED EMISSION TEST

13.1. LIMITS OF LINE CONDUCTED EMISSION TEST

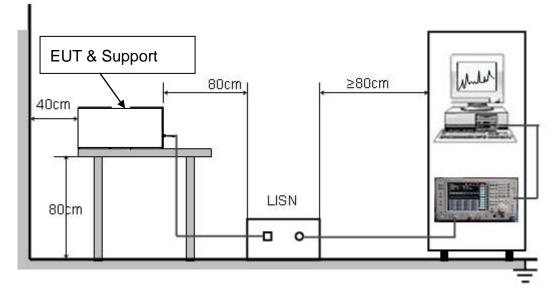
Frequency	Maximum RF Line Voltage						
Frequency	Q.P.(dBuV)	Average(dBuV)					
150kHz~500kHz	66-56	56-46					
500kHz~5MHz	56	46					
5MHz~30MHz	60	50					

Note:

1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

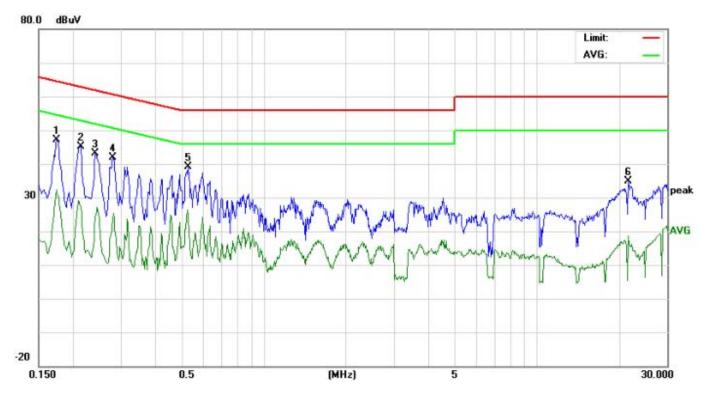
- The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2. Support equipment, if needed, was placed as per ANSI C63.10.
- 3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
- 4. All support equipments received AC120V/60Hz power from a LISN, if any.
- 5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN..
- 6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
- 8. During the above scans, the emissions were maximized by cable manipulation.
- 9. The test mode(s) were scanned during the preliminary test.

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

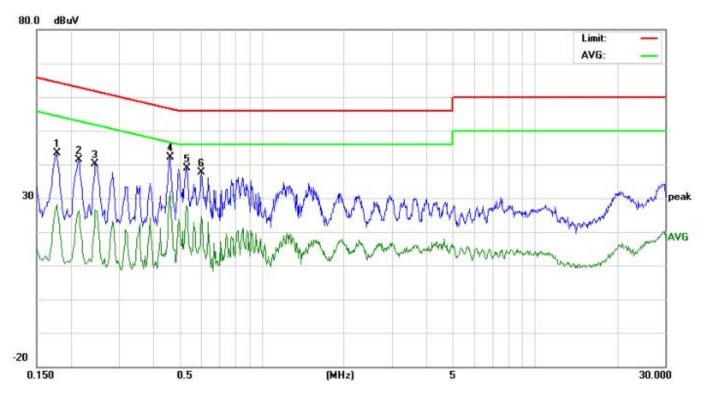
- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
- 3. The test data of the worst case condition(s) was reported on the Summary Data page.

13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST



LINE CONDUCTED EMISSION TEST LINE 1-L

No.	Freq.		ding_L (dBuV)		Correct Factor		easurer (dBuV)			nit uV)		rgin IB)	P/F	Comment
	(MHz)	Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1737	36.98		22.14	10.19	47.17		32.33	64.78	54.78	-17.61	-22.45	Р	
2	0.2139	34.84		17.22	10.23	45.07		27.45	63.05	53.05	-17.98	-25.60	Р	
3	0.2419	32.75		14.17	10.26	43.01		24.43	62.03	52.03	-19.02	-27.60	Ρ	
4	0.2802	31.55		12.99	10.28	41.83		23.27	60.81	50.81	-18.98	-27.54	Р	
5	0.5299	28.85		14.62	10.37	39.22		24.99	56.00	46.00	-16.78	-21.01	Р	
6	21.6615	24.81		8.50	10.12	34.93		18.62	60.00	50.00	-25.07	-31.38	Р	

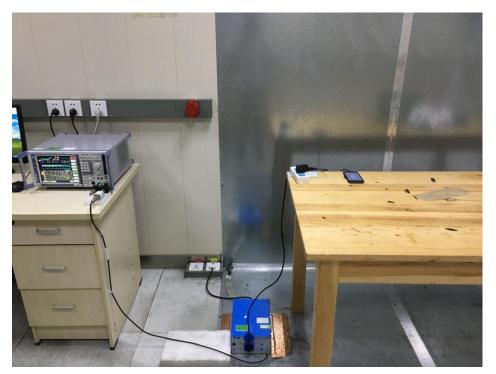


Line Conducted Emission Test Line 2-N

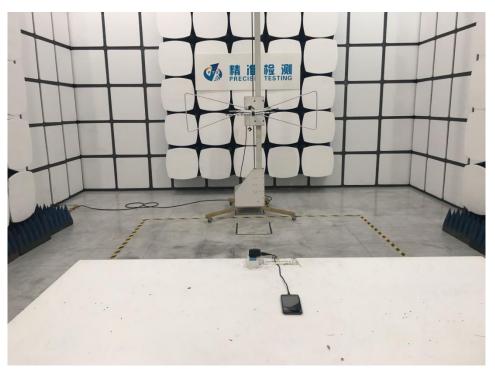
No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1779	33.21		17.90	10.19	43.40		28.09	64.58	54.58	-21.18	-26.49	Р	
2	0.2139	31.19		16.11	10.23	41.42		26.34	63.05	53.05	-21.63	-26.71	Р	
3	0.2479	23.21		5.02	10.27	33.48		15.29	61.82	51.82	-28.34	-36.53	Р	
4	0.4620	31.81		21.78	10.37	42.18		32.15	56.66	46.66	-14.48	-14.51	Р	
5	0.5340	28.52		16.99	10.37	38.89		27.36	56.00	46.00	-17.11	-18.64	Р	
6	0.6018	27.40		14.35	10.31	37.71		24.66	56.00	46.00	-18.29	-21.34	Р	

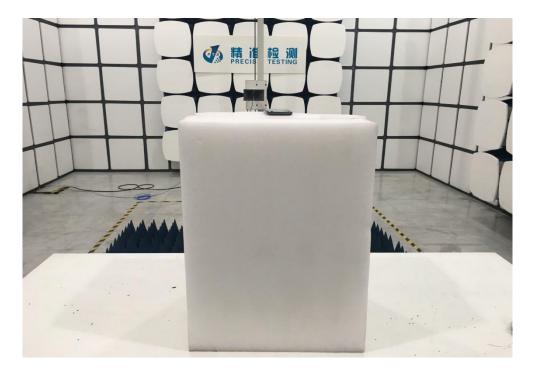
APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP



FCC RADIATED EMISSION TEST SETUP





----END OF REPORT----