

FCC Test Report

Report No.: AGC00677200701FE04

FCC ID : 2ALP3-L2

APPLICATION PURPOSE : Original Equipment

PRODUCT DESIGNATION: Smartphone

BRAND NAME : Kodak

MODEL NAME : Smartway L2, Smartway L2 Series

APPLICNAT: INDUSTRIA FUEGUINA DE RELOJERIA ELECTRONICA SA

DATE OF ISSUE : Aug. 11, 2020

STANDARD(S) FCC Part 15.247

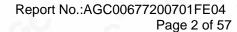
TEST PROCEDURE(S) KDB 558074 D01 15.247 Meas Guidance v05r01

REPORT VERSION : V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	1	Aug. 11, 2020	Valid	Initial Release

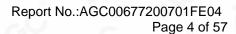
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1. VERIFICATION OF CONFORMITY

INDUSTRIA FUEGUINA DE RELOJERIA ELECTRONICA SA
SARMIENTO 2920 RIO DRAND 9420 Argentina
United Creation Technology Corp.,Ltd
Room 201, Block A, Science and technology buliding phase-2, Nanhai Road 1057, Shekou, Nanshan district, Shenzhen
INDUSTRIA FUEGUINA DE RELOJERIA ELECTRONICA SA
SARMIENTO 2920 RIO DRAND 9420 Argentina
Smartphone
Kodak
Smartway L2
Smartway L2Series
All the same, except for the model name.
Jul. 17, 2020~Aug. 11, 2020
No any deviation from the test method.
Normal
AGCRT-US-BGN/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance(Shenzhen) 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.

The test results of this report relate only to the tested sample identified in this report.

Reviewed By

Max Zhang
(Reviewer)

Aug. 11, 2020

Aug. 11, 2020

Aug. 11, 2020

Approved By

Forrest Lei
(Authorized Officer)

Aug. 11, 2020

Aug. 11, 2020

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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

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

A major technical description of EUT is described as following

	To Lot to decombed do fellowing	
Operation Frequency	2.412 GHz~2.462GHz	
Output Power	IEEE 802.11b: 11.97 dBm, IEEE 802.11g: 10.67 dBm;	
	IEEE 802.11n(20): 10.21 Bm	
Modulation	DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)	
Number of channels 11 Channels (IEEE802.11b/g/n20)		
Hardware Version	J517D	
Software Version 2020.09.02L2.v1		
Antenna Designation	PIFA Antenna(Comply with requirements of the FCC part 15.203)	
Antenna Gain -2.3dBi		
Power Supply DC 3.8V by Built-in Li-ion Battery		

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
S CO	© 1	2412 MHZ
8	2	2417 MHZ
	3	2422 MHZ
100 ac	0 4	2427 MHZ
	5	2432 MHZ
2400~2483.5MHZ	6	2437 MHZ
100 -C	7	2442 MHZ
	8	2447 MHZ
	9	2452 MHZ
60 6	10	2457 MHZ
20	0 11	2462 MHZ

Note: For 20MHZ bandwidth system use Channel 1 to Channel 11 For 802.11n 40MHZ bandwidth system use Channel 3 to Channel 9.

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2.3. IEEE 802.11N MODULATION SCHEME

MCS Index	Nss	Modulation	R	NBPSC	NRPSC		NDBPS			ata Mbps) 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

Symbol	Explanation		
NSS	Number of spatial streams		
R	Code rate		
NBPSC	Number of coded bits per single carrier		
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: 2ALP3-L2** filing to comply with the FCC Part 15 requirements.

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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 15.247 Meas Guidance v05r01.

2.6. SPECIAL ACCESSORIES

Refer to section 5.2.

2.7. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2.8. ANTENNA REQUIREMENT

This intentional radiator is designed with a permanently attached antenna of an antenna to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

For more information of the antenna, please refer to the APPENDIX B: PHOTOGRAPHS OF EUT.

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3. MEASUREMENT UNCERTAINTY

Test	Measurement Uncertainty	Notes
Transmitter power conducted	±0.57 dB	(1)
Transmitter power Radiated	±2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	±2.20 dB	(1)
Occupied Bandwidth	±0.01ppm	(1)
Radiated Emission 30~1000MHz	±4.10dB	(1)
Radiated Emission Above 1GHz	±4.32dB	(1)
Conducted Disturbance0.15~30MHz	±3.20dB	(1)

Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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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)

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.

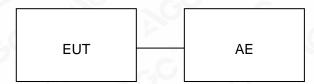
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5 SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configure:



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Smartphone	Smartway L2	FCC ID: 2ALP3-L2	EUT
2	Adapter	KA1508-050100AR	DC 5.0V 1A	AE
3	Battery	L2545216	DC 3.8V 2200mAh	AE
4	USB Cable	N/A	N/A	AE
5	Earphone	N/A	N/A	AE

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

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6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd	
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China	
Designation Number	CN1259	
FCC Test Firm Registration Number	975832	
A2LA Cert. No.	5054.02	
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA	

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2022
LISN	R&S	ESH2-Z5	100086	Aug. 26, 2019	Aug. 25, 2020
Test software	R&S	ES-K1 (Ver V1.71)	N/A	N/A	N/A

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2022
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 18, 2019	Dec. 17, 2020
2.4GHz Fliter	Micro-tronics	087	N/A	Jun. 01, 2020	Jun. 09, 2021
Attenuator	Weinachel Corp	58-30-33	N/A	Jun. 01, 2020	Jun. 09, 2021
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2017	Sep. 20, 2020
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May. 17, 2019	May. 16, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Oct. 15, 2019	Oct. 14, 2020
ANTENNA	SCHWARZBECK	VULB9168	D69250	Jan. 09, 2019	Jan. 08, 2021
Test software	Tonscend	JS32-RE	N/A	N/A	N/A

TEST EQUIPMENT OF RF CONDUCTED TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
USB Wideband Power Sensor	Aglient	U2021XA	MY54110007	Sep. 09, 2019	Sep. 08, 2020
USB Wideband Power Sensor	Aglient	U2021XA	MY54110009	Sep. 09, 2019	Sep. 08, 2020
SIGNAL ANALYZER	Aglient	N9020A	MY52090123	Sep. 09, 2019	Sep. 08, 2020

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6. OUTPUT POWER

6.1. MEASUREMENT PROCEDURE

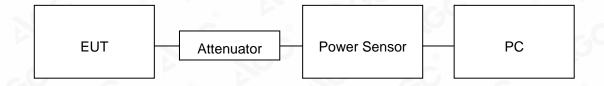
For max average conducted output power test:

- 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 558074 for compliance to FCC 47CFR 15.247 requirements.

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

AVERAGE POWER SETUP



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6.3. LIMITS AND MEASUREMENT RESULT

TEST ITEM	OUTPUT POWER	100	<i>z</i> .G	8	
TEST MODE	802.11b with data rate 1				CC

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	11.97	30	Pass
2.437	10.03	30	Pass
2.462	11.55	30	Pass

TEST ITEM	OUTPUT POWER	100	~0°	-6	
TEST MODE	802.11g with data rate 6	@		10	10°C

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	10.46	30	Pass
2.437	9.95	30	Pass
2.462	10.67	30	Pass

TEST ITEM	OUTPUT POWER	10°C	8	
TEST MODE	802.11n 20 with data rate 6.5			G

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	10.04	30	Pass
2.437	9.54	30	Pass
2.462	10.21	30	Pass

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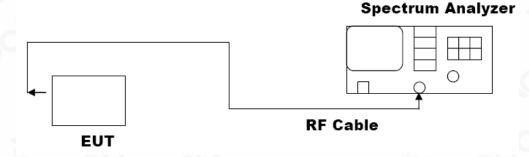
7. 6dB BANDWIDTH

7.1. 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 ≥ 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.

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



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7.3. LIMITS AND MEASUREMENT RESULTS

Mode	Channel	6dB Bandwidth [MHz]	Verdict
100	LCH	9.049	PASS
11b	MCH	9.077	PASS
C.O	HCH	8.565	PASS
100	LCH	16.04	PASS
11g	MCH	16.35	PASS
	HCH	15.79	PASS
100	LCH	16.41	PASS
11nHT20	MCH	17.61	PASS
8	HCH	16.37	PASS

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Test Graph



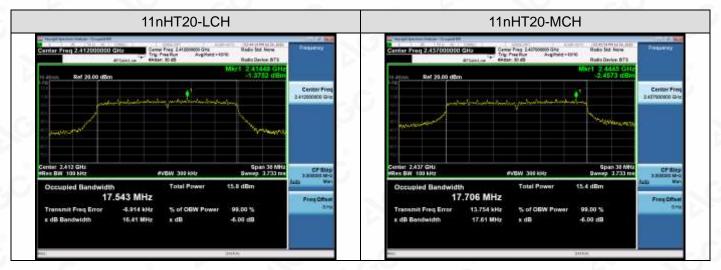


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The test results







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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.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Bedicated restrou/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.



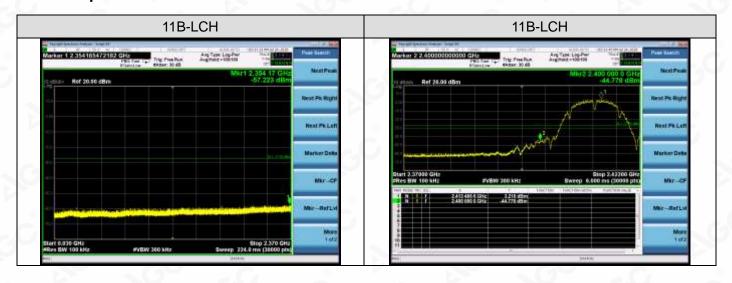
9.4. LIMITS AND MEASUREMENT RESULT

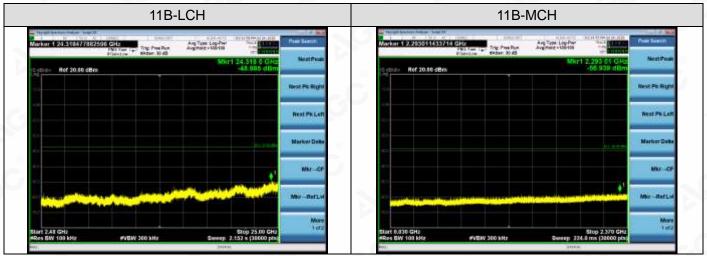
LIMITS AND MEASU	REMENT RESULT	
A mulio abila Limita	Measurement R	esult
Applicable Limits	Test Data (
n any 100 KHz Bandwidth Outside the	10° 20	0
requency band in which the spread spectrum		60
ntentional radiator is operating, the radio frequency		
power that is produce by the intentional radiator		
shall be at least 30 dB below that in 100KHz		6
pandwidth within the band that contains the highest	Refer Test Graph	PASS
evel of the desired power.		
n addition, radiation emissions which fall in the		
restricted bands, as defined in §15.205(a), must also		
comply with the radiated emission limits specified		- GO
n§15.209(a))		

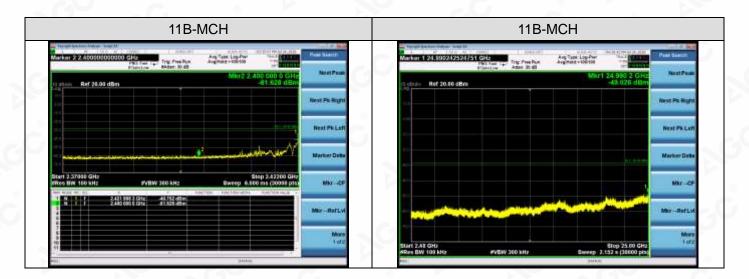
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Test Graph

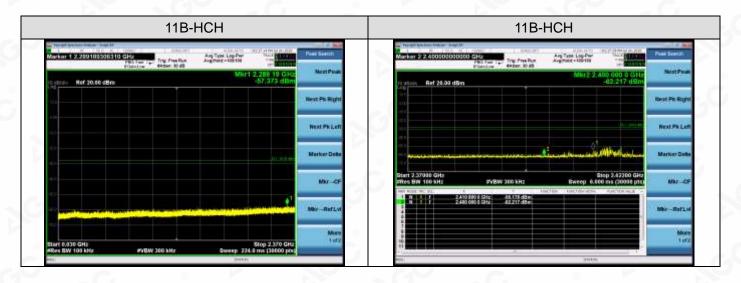


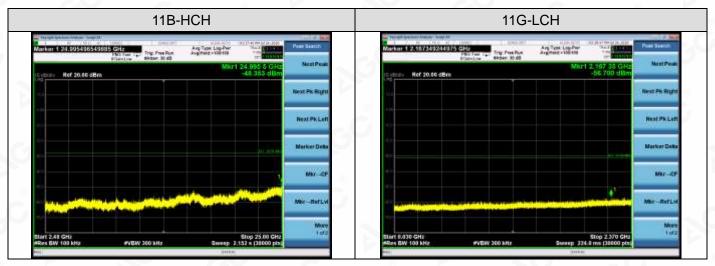


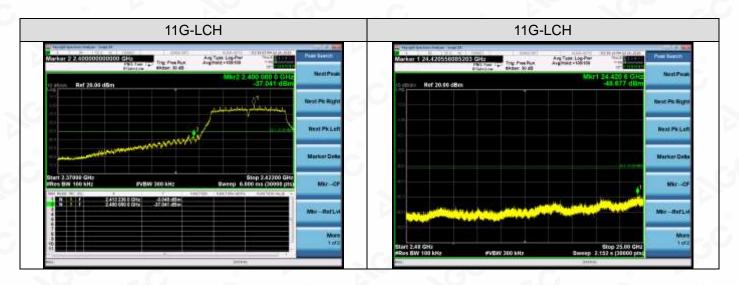


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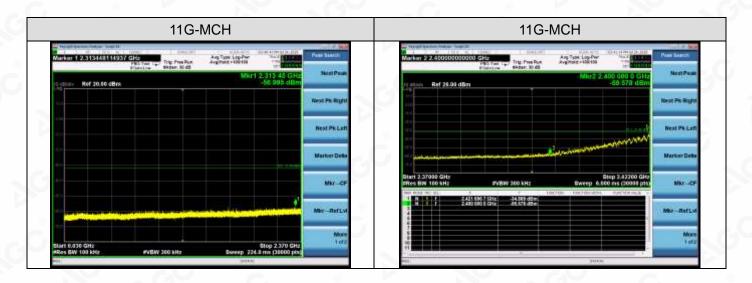


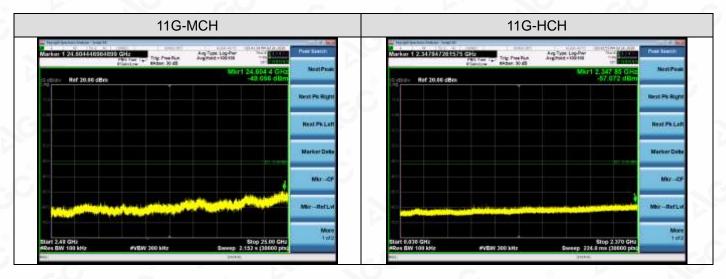


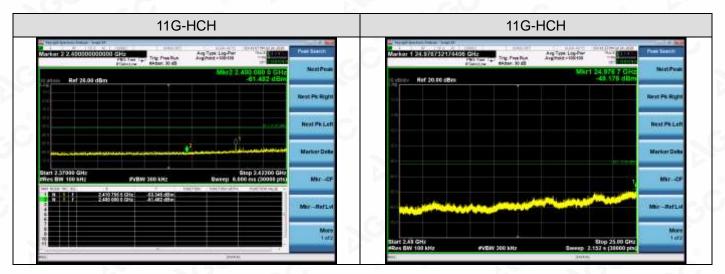


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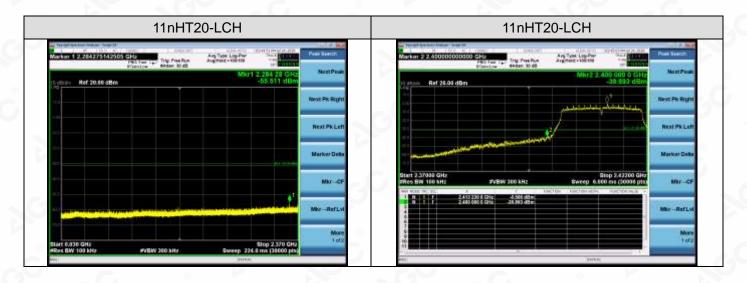


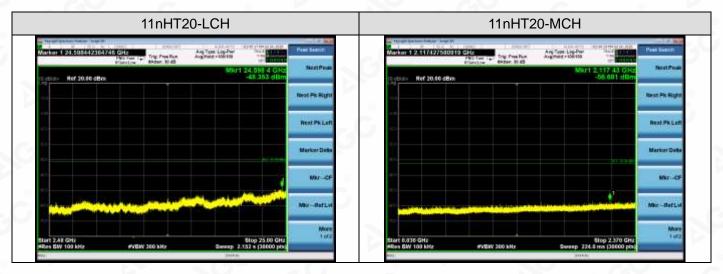


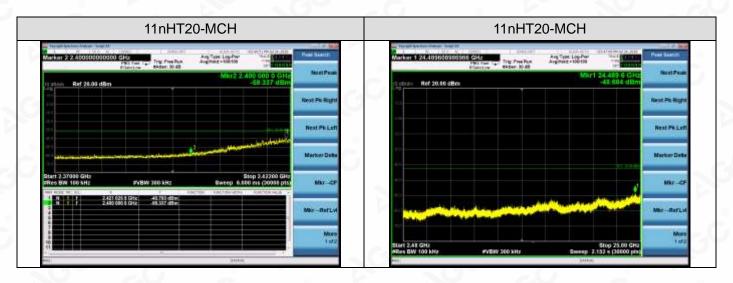


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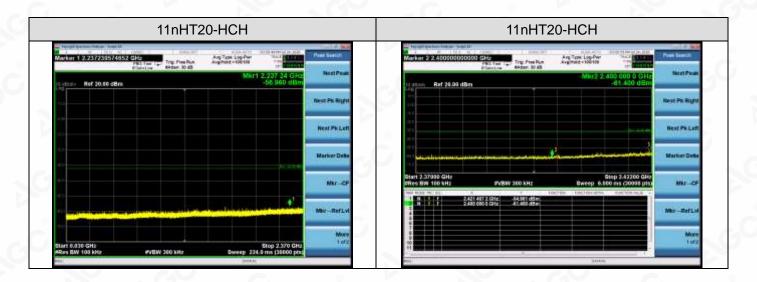






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10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

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-1 in the ANSI C63.10 (2013) item 11.10 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.

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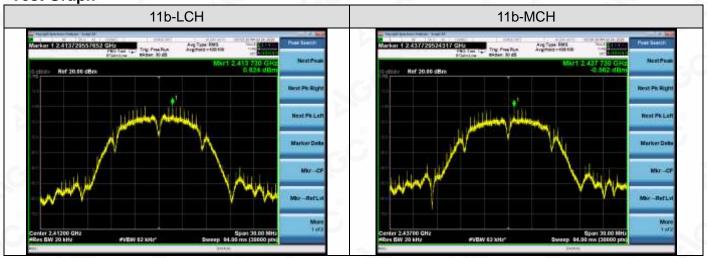
10.4 LIMITS AND MEASUREMENT RESULT

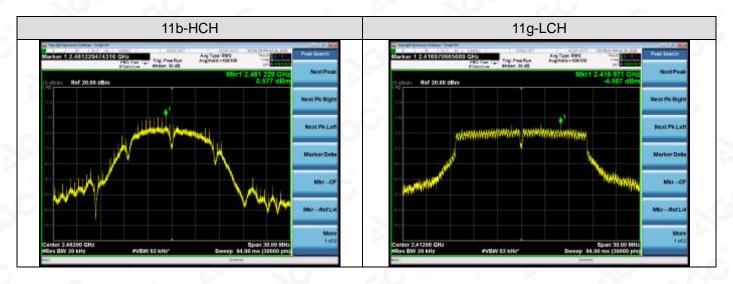
Mode	Channel	PSD [dBm/20kHz]	Limit[dBm/3kHz]	Verdict
	LCH	0.624	8	PASS
11b	MCH	-0.562	8	PASS
	НСН	0.577	8	PASS
	LCH	-4.587	8	PASS
11g	MCH	-3.873	8	PASS
	HCH	-3.995	8	PASS
	LCH	-4.994	8	PASS
11nHT20	MCH	-5.362	8	PASS
	HCH	-4.314	8	PASS

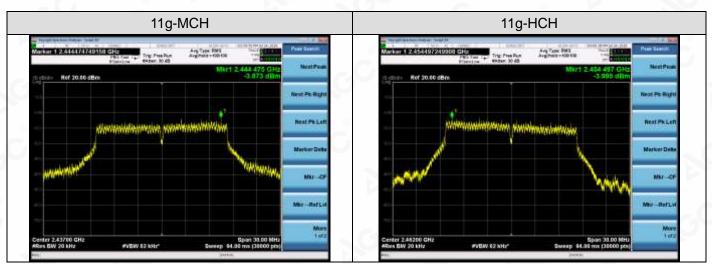
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Test Graph

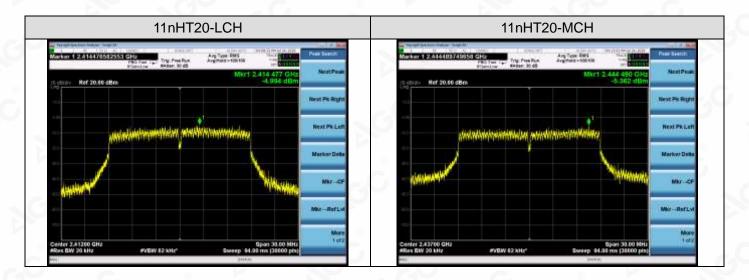


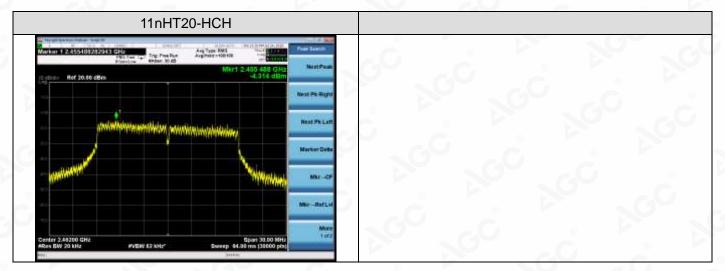




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11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

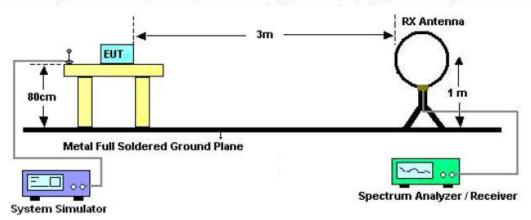
- The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated 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. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 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.

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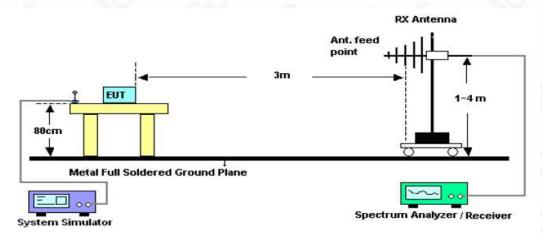


11.2. TEST SETUP

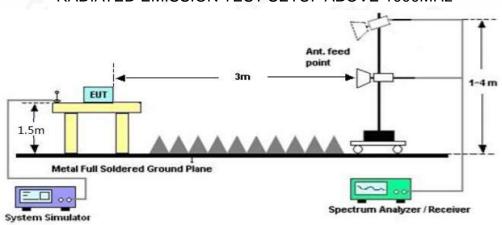
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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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.

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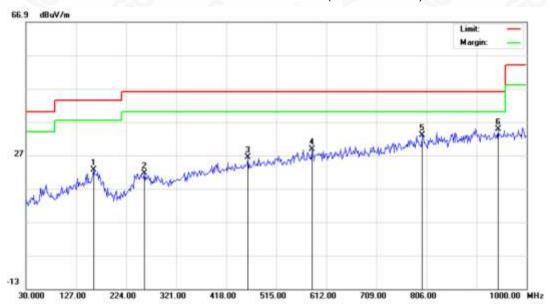
11.4. TEST RESULT

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



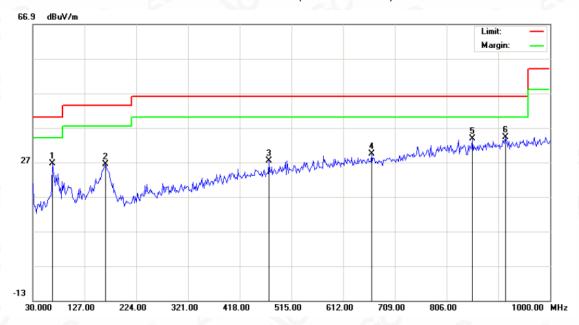
No.	Mk	Freq.	Reading dBuV	Factor dB/m	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector
1		160.9500	3.50	19.09	22.59	43.50	-20.91	peak
2		259.5667	3.27	18.32	21.59	46.00	-24.41	peak
3		460.0333	2.27	24.19	26.46	46.00	-19.54	peak
4		584.5167	2.16	26.65	28.81	46.00	-17.19	peak
5		797.9167	2.70	30.36	33.06	46.00	-12.94	peak
6	*	945.0333	2.73	32.09	34.82	46.00	-11.18	peak

RESULT: PASS

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



No.	Mk		Reading dBuV	Factor dB/m	Measurement dBuV/m	Limit dBuV/m	Over dB	Detector
2		165.8000	7.77	18.59	26.36	43.50	-17.14	peak
3		472.9667	2.88	24.45	27.33	46.00	-18.67	peak
4		665.3500	1.68	27.73	29.41	46.00	-16.59	peak
5		854.5000	2.62	31.11	33.73	46.00	-12.27	peak
6	*	915.9333	2.36	31.84	34.20	46.00	-11.80	peak

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.

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RADIATED EMISSION ABOVE 1GHZ

Frequency	Emission Level	Limits	Margin	Detector	Commont	
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	Туре	Comment	
0	10	TX 11b 2412M	-lz		C .	
4824	49.93	74	-24.07	Pk	Horizonta	
4824	35.37	54	-18.63	AV	Horizonta	
7236	51.57	74	-22.43	pk	Horizonta	
7236	32.69	54	-21.31	AV	Horizonta	
4824	51.41	74	-22.59	Pk	Vertical	
4824	34.00	54	-20.00	AV	Vertical	
7236	47.91	74	-26.09	Pk	Vertical	
7236	38.59	54	-15.41	AV	Vertical	
	60	TX 11b 2437MF	Нz		G	
4874	50.47	74	-23.53	Pk	Horizonta	
4874	31.82	54	-22.18	AV	Horizontal	
7311	47.60	74	-26.4	Pk	Horizonta	
7311	32.90	54	-21.10	AV	Horizonta	
4874	49.64	74	-24.36	Pk	Vertical	
4874	39.72	54	-14.28	AV	Vertical	
7311	45.42	74	-28.58	Pk	Vertical	
7311	37.84	54	-16.16	AV	Vertical	
	G 2G	TX 11b 2462MF	Нz	~ GC	8	
4924	50.16	74	-23.84	Pk	Horizontal	
4924	32.10	54	-21.90	AV	Horizontal	
7386	48.05	74	-25.95	Pk	Horizontal	
7386	32.35	54	-21.65	AV	Horizontal	
4924	51.21	74	-22.79	Pk	Vertical	
4924	38.67	54	-15.33	AV	Vertical	
7386	45.38	74	-28.62	Pk	Vertical	
7386	37.07	54	-16.93	AV	Vertical	

RESULT: PASS Note:

1. Margin = Emission Level - Limit

2.1GHz-25GHz(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).

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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=1MHz,VBW=3MHz
 - c)Suitable frequency span including 100kHz bandwidth from band edge

12.2. TEST SET-UP

Radiated same as 11.2

Note:

- 1. Factor=Antenna Factor + Cable loss Amplifier gain. Field Strength=Factor + Reading level
- 2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μ V) to represent the Amplitude. Use the F dB(μ V/m) to represent the Field Strength. So A=F.

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12.3. TEST RESULT

EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Horizontal

PK



ΑV



RESULT: PASS

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EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Vertical



ΑV



RESULT: PASS

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EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Horizontal



ΑV



RESULT: PASS

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EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Vertical

PK



ΑV



RESULT: PASS

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EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Horizontal



ΑV



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Vertical



ΑV



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Horizontal



ΑV



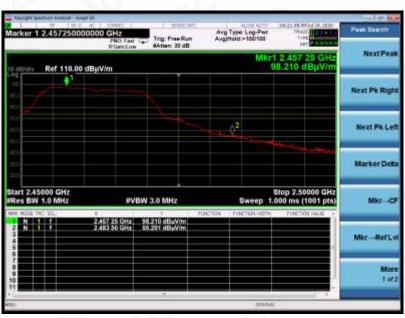
RESULT: PASS

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(%)		(2)	
EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Vertical

PK



ΑV



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated restriction. Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Horizontal



ΑV



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Vertical



ΑV



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Horizontal

PK



ΑV



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the specificated resting/inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



EUT	Smartphone	Model Name	Smartway L2
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Vertical

PK



AV



RESULT: PASS

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated restriction. Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the writter pathorization of AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



13. FCC LINE CONDUCTED EMISSION TEST

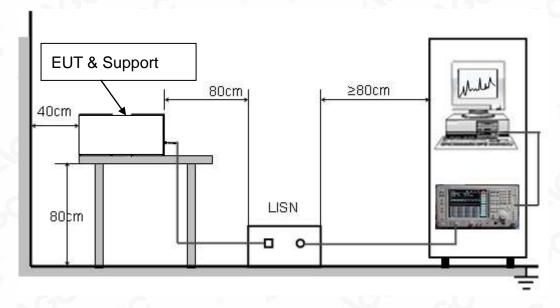
13.1. LIMITS OF LINE CONDUCTED EMISSION TEST

_	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



Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Pesting/Inspe Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The terms of the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the tested report and in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report should be addressed to AGC by agc@agc-cert.com.



13.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. 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 Mara Phones X1 op 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.

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13.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

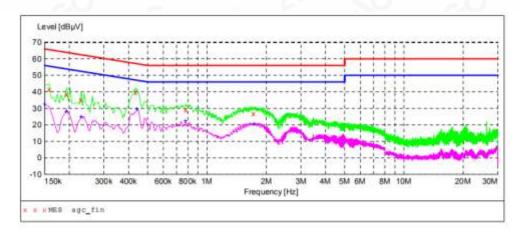
- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were 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.

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13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST LINE 1-L



MEASUREMENT RESULT: "agc fin"

2020/7/17 21:	09						
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.158000	41.50	9.3	66	24.1	QP	L1	GND
0.194000	38.50	9.3	64	25.4	QP	1.1	GND
0.230000	35.00	9.3	62	27.4	QP	LI	GND
0.434000	39.60	9.3	57	17.6	QP	L.1	GND
0.782000	29.20	9.3	56	26.B	QP	L-1	GND
1.730000	26.90	9.3	56	29.1	QP	L1	GND

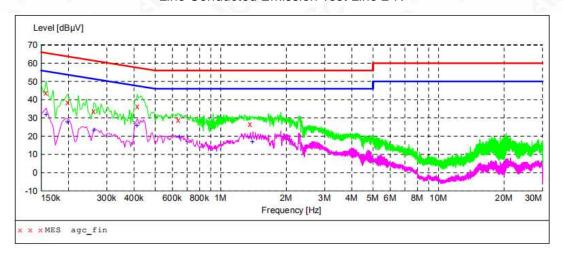
MEASUREMENT RESULT: "agc fin2"

21	020/7/17 21:	09						
	Frequency MHz	Level dBuV	Transd dB	Limit dBpV	Margin dB	Detector	Line	PE
	0.150000	32.40	9.3	56	23.6	AV	L1	GND
	0.194000	28.00	9.3	54	25.9	AV	1.1	GND
	0.230000	24.80	9.3	52	27.6	AV	L1	GND
	0.442000	29.60	9.3	47	17.4	AV	1.1	GND
	0.778000	22.10	9.3	46	23.9	AV	L1	GND
	1.730000	20.30	9.3	46	25.7	AV	1.1	GND

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Line Conducted Emission Test Line 2-N



MEASUREMENT RESULT: "agc fin"

2020/7/17 21	:05						
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.158000	44.00	9.3	66	21.6	QP	N	GND
0.198000	38.60	9.3	64	25.1	QP	N	GND
0.262000	33.60	9.3	61	27.8	QP	N	GND
0.414000	36.50	9.3	58	21.1	QP	N	GND
0.638000	29.00	9.3	56	27.0	QP	N	GND
1.362000	26.50	9.3	56	29.5	QP	N	GND

MEASUREMENT RESULT: "agc_fin2"

2020/7/17 21:	05						
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.158000	31.90	9.3	56	23.7	AV	N	GND
0.198000	27.70	9.3	54	26.0	AV	N	GND
0.262000	23.30	9.3	51	28.1	AV	N	GND
0.414000	25.80	9.3	48	21.8	AV	N	GND
0.646000	19.30	9.3	46	26.7	AV	N	GND
1.406000	16.90	9.3	46	29.1	AV	N	GND

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Restriction Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



APPENDIX A: PHOTOGRAPHS OF TEST SETUP

LINE CONDUCTED EMISSION TEST SETUP



RADIATED EMISSION TEST SETUP



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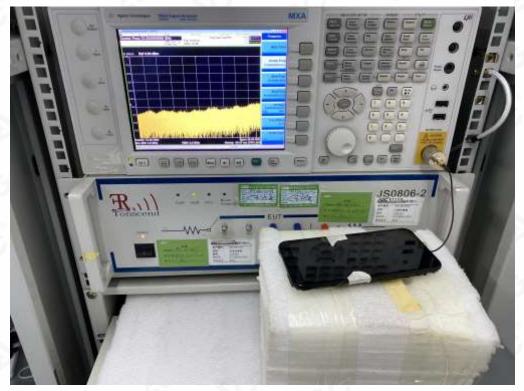
RADIATED EMISSION ABOVE 1G TEST SETUP



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APPENDIX B: PHOTOGRAPHS OF EUT



----END OF REPORT----

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Conditions of Issuance of Test Reports

- 1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").
- 2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
- 3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
- 4. The non-CMA report issued by AGC is only permitted to be used by the client as internal reference use and shall not be used for public demonstration purpose.
- 5. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
- 6. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
- 7. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
- 8. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
- 9. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
- 10. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the standard restriction Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written explorization of AGE, the test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15day after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.