

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC145537

1 of 44 Page:

FCC Radio Test Report FCC ID: YXK-S400

Original Grant

Report No. TB-FCC145537

Shenzhen Huaruian Technology Co.,Ltd **Applicant**

Equipment Under Test (EUT)

EUT Name Mobile phone

Model No. S400

Brand Name N/A

2015-09-21 **Receipt Date**

Test Date 2015-09-22 to 2015-10-12

Issue Date 2015-10-13

FCC Part 15, Subpart C (15.247:2015) **Standards**

ANSI C63 10: 2013 **Test Method**

Conclusions **PASS**

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

The EUT technically complies with the FCC and IC requirements

Test/Witness

Engineer

Approved&

Authorized

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0

Tel: +86 75526509301



2 of 44



TOBY

CON	NTENTS	2
1.	GENERAL INFORMATION ABOUT EUT	4
	1.1 Client Information	4
	1.2 General Description of EUT (Equipment Under Test)	4
	1.3 Block Diagram Showing the Configuration of System Tested	
	1.4 Description of Support Units	5
	1.5 Description of Test Mode	6
	1.6 Description of Test Software Setting	6
	1.7 Measurement Uncertainty	
	1.8 Test Facility	7
2.	TEST SUMMARY	8
3.	TEST EQUIPMENT	9
4.	CONDUCTED EMISSION TEST	10
	4.1 Test Standard and Limit	10
	4.2 Test Setup	
	4.3 Test Procedure	
	4.4 EUT Operating Mode	11
	4.5 Test Data	11
5.	RADIATED EMISSION TEST	16
	5.1 Test Standard and Limit	
	5.2 Test Setup	
	5.3 Test Procedure	18
	5.4 EUT Operating Condition	19
	5.5 Test Data	19
6.	RESTRICTED BANDS REQUIREMENT	28
	6.1 Test Standard and Limit	28
	6.2 Test Setup	28
	6.3 Test Procedure	28
	6.4 EUT Operating Condition	29
	6.5 Test Data	29
7.	BANDWIDTH TEST	35
	7.1 Test Standard and Limit	35
	7.2 Test Setup	35
	7.3 Test Procedure	
	7.4 EUT Operating Condition	35
	7.5 Test Data	36
8.	PEAK OUTPUT POWER TEST	38
	8.1 Test Standard and Limit	38
	8.2 Test Setup	



Page: 3 of 44

	8.3 Test Procedure	38
	8.4 EUT Operating Condition	38
	8.5 Test Data	39
9.	POWER SPECTRAL DENSITY TEST	41
	9.1 Test Standard and Limit	41
	9.2 Test Setup	
	9.3 Test Procedure	
	9.4 EUT Operating Condition	41
	8.5 Test Data	42
10.	ANTENNA REQUIREMENT	44
	10.1 Standard Requirement	44
	10.2 Antenna Connected Construction	
	10.3 Result	44



Page: 4 of 44

1. General Information about EUT

1.1 Client Information

Applicant: Shenzhen Huaruian Technology Co.,Ltd

Address: 4th Floor of Yuxing, Sanwei Science and Technology,

Park, Hangcheng Road, Bao'an District, Shenzhen, China

Manufacturer : Shenzhen Huaruian Technology Co.,Ltd

Address : 4th Floor of Yuxing, Sanwei Science and Technology,

Park, Hangcheng Road, Bao'an District, Shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	1	Mobile phone		
Models No.		S400		
Model Difference	1	N/A		
THE PROPERTY.	T	Operation Frequency: BLE: 2402MHz~2480MHz BT: 2402MHz~2480MHz ₍₂₎ WIFI: 2412~2462 MHz ₍₂₎		
Product	5	Number of Channel:	Bluetooth 4.0 (BLE): 40 channels see note ₍₄₎	
Description		RF Output Power:	-2.358 dBm Conducted Power	
	3	Antenna Gain:	1.39 dBi FPC Antenna	
		Modulation Type:	GFSK	
		Bit Rate of Transmitter:	1Mbps(GFSK)	
Power Supply	÷	DC power supplied by A DC Voltage supplied from		
Power Rating		Output: 5V/1A	100~240V 50/60Hz 0.3A	
Connecting I/O Port(S)		Please refer to the User	s Manual	

Note:

- (1) This Test Report is FCC Part 15.247 for Bluetooth BLE, the test procedure follows the FCC KDB 558074 D01 DTS Meas Guidance v03r02.
- (2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. The EUT has also been tested and complied the FCC 15C for BT and WIFI function, and recorded in the separate test report.
- (3) Antenna information provided by the applicant.
- (4) Channel List:

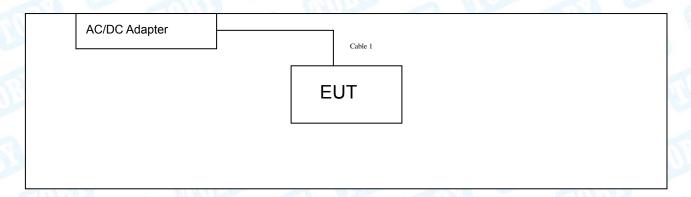


Page: 5 of 44

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	14	2430	28	2458
01	2404	15	2432	29	2460
02	2406	16	2434	30	2462
03	2408	17	2436	31	2464
04	2410	18	2438	32	2466
05	2412	19	2440	33	2468
06	2414	20	2442	34	2470
07	2416	21	2444	35	2472
08	2418	22	2446	36	2474
09	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454		
13	2428	27	2456		

1.3 Block Diagram Showing the Configuration of System Tested

TX Mode



1.4 Description of Support Units

	Eq	uipment Informatio	n	
Name	Model	S/N	Manufacturer	Used "√"
A STATE OF		Will a	GHOLIN	J. Rich
		Cable Information		
Number	Shielded Type	Ferrite Core	Length	Note
Cable 1	YES	NO	1.0M	Accessory





Page: 6 of 44

1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For (Conducted Test
Final Test Mode	Description
Mode 1	AC Charging With TX Mode

For	Radiated Test
Final Test Mode	Description
Mode 2	AC Charging With TX Mode
Mode 3	TX Mode (Channel 00/20/39)

Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.4 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

Bluetooth BLE Mode: GFSK Modulation Transmitting mode.

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on Z-plane as the normal use. Therefore only the test data of this Z-plane was used for radiated emission measurement test.

1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of RF setting.

Test Software Version	RF KPI Test		
Channel	CH 00	CH 20	CH 39
BLE Mode	DEF	DEF	DEF



Page: 7 of 44

1.7 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U _{Lab})
N. C. C.	Level Accuracy:	CHILD THE
Conducted Emission	9kHz~150kHz	±3.42 dB
	150kHz to 30MHz	±3.42 dB
Radiated Emission	Level Accuracy:	±4.60 dB
Radiated Effission	9kHz to 30 MHz	±4.00 dB
Radiated Emission	Level Accuracy:	±4.40 dB
Radiated Effission	30MHz to 1000 MHz	±4.40 dB
Radiated Emission	Level Accuracy:	±4.20 dB
Radiated Ellission	Above 1000MHz	14.20 UD

1.8 Test Facility

The testing was performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at:

1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China.

At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



Page: 8 of 44

2. Test Summary

Standa	rd Section	Tool How	ludana ant	Damada
FCC	IC	Test Item	Judgment	Remark
15.203	1	Antenna Requirement	PASS	N/A
15.207	RSS-GEN 7.2.4	Conducted Emission	N/A	N/A
15.205	RSS-GEN 7.2.2	Restricted Bands	PASS	N/A
15.247(a)(2)	RSS 247 5.2 (1)	6dB Bandwidth	PASS	N/A
15.247(b)	RSS 247 5.4 (4)	Peak Output Power	PASS	N/A
15.247(e)	RSS 247 5.2 (2)	Power Spectral Density	PASS	N/A
15.247(d)	RSS 247 5.5	Transmitter Radiated Spurious Emission	PASS	N/A

Note: "/" for no requirement for this test item.

N/A is an abbreviation for Not Applicable.



Page: 9 of 44

3. Test Equipment

AC Main C	onducted Emis	sion			
Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
EMI Test Receiver	ROHDE& SCHWARZ	ESCI	100321	Aug. 07, 2015	Aug. 06, 2016
50ΩCoaxial Switch	Anritsu	MP59B	X10321	Aug. 07, 2015	Aug. 06, 2016
L.I.S.N	Rohde & Schwarz	ENV216	101131	Aug. 07, 2015	Aug. 06, 2016
L.I.S.N	SCHWARZBECK	NNBL 8226-2	8226-2/164	Aug. 07, 2015	Aug. 06, 2016
Radiation Description	Spurious Emiss Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Spectrum Analyzer	Agilent	E4407B	MY45106456	Aug. 29, 2015	Aug. 28, 2016
EMI Test Receiver	Rohde & Schwarz	ESCI	100010/007	Aug. 07, 2015	Aug. 06, 2016
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 28, 2015	Mar. 27, 2016
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 28, 2015	Mar. 27, 2016
Pre-amplifier	Sonoma	310N	185903	Mar. 28, 2015	Mar. 27, 2016
Pre-amplifier	HP	8447B	3008A00849	Mar. 28, 2015	Mar. 27, 2016
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 28, 2015	Mar. 27, 2016
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna C	onducted Emis	sion			
Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Aug. 29, 2015	Aug. 28, 2016
EMI Test Receiver	Rohde & Schwarz	ESCI	100010/007	Aug. 07, 2015	Aug. 06, 2016



Page: 10 of 44

4. Conducted Emission Test

4.1 Test Standard and Limit

4.1.1Test Standard FCC Part 15.207

4.1.2 Test Limit

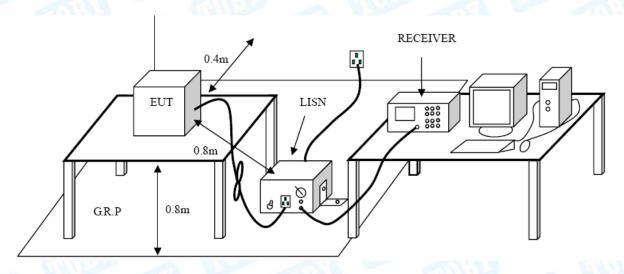
Conducted Emission Test Limit

Eroguenov	Maximum RF Line Voltage (dBμV)		
Frequency	Quasi-peak Level	Average Level	
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

Notes:

- (1) *Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2 Test Setup



4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.



Page: 11 of 44

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 EUT Operating Mode

Please refer to the description of test mode.

4.5 Test Data

Test data please refer the following pages.



12 of 44 Page:



EUT:		Mobile phor	ne	Model	Name :		S400	
Tempera	ature:	25 ℃		Relative Humidity: 55%				Call!
Test Vol	tage:	AC 120V/60)Hz		BHT.			A Brown
Termina	l:	Line	1	1100		(6)	Miles	
Test Mo	de:	AC Chargin	g with TX B	8 Mode		1 6	-	MAL
Remark	:	Only worse	case is rep	orted	11/10		ON V	Bulletin
90.0 dBu	v							
							QP: AVG:	
Μ,		×						
40	han war	My Marin	July July Mark Mark	E Hai Hall Ann. a X.				
M		A ME ALM	and mandelika Albania	iwanananaya,	WAYNA	wyddhydr,dannau	البعالجان يعطيهم المستحر البياري	many
M,	Why warm	L JA WANTER	Market Market Market Commencer	4 popular propriation of	War		Janeary Comments	h h peak
		Ur T			MAKARA	whether and the second	Pennyan July	1
								\\\AVG
-10								
-10 0.150		0.5	(M	Hz)	5			30.000
				-				30.000
	k. Freq	Reading	Correct Factor	Measure- ment		Over		30.000
0.150	k. Freq	Reading	Correct	Measure-		Over	Detector	
0.150	<u> </u>	Reading Level	Correct Factor	Measure- ment	Limit		Detector	
0.150 No. M	MHz	Reading Level dBuV 30.63	Correct Factor	Measure- ment	Limit dBuV 56.00	dB		
0.150 No. M	0.5140	Reading Level dBuV 30.63	Correct Factor dB 10.03	Measure- ment dBuV 40.66	Limit dBuV 56.00 46.00	dB -15.34	QP	
0.150 No. M	0.5140 0.5140	Reading Level dBuV 30.63 20.08 21.75	Correct Factor dB 10.03	Measure- ment dBuV 40.66 30.11	Limit dBuV 56.00 46.00 56.00	dB -15.34 -15.89	QP AVG	
0.150 No. M	0.5140 0.5140 1.0660	Reading Level dBuV 30.63 20.08 21.75 10.76	Correct Factor dB 10.03 10.03	Measure- ment dBuV 40.66 30.11 31.81	Limit dBuV 56.00 46.00 56.00	dB -15.34 -15.89 -24.19	QP AVG QP	30.000 Commer
0.150 No. M 1 * 2 3 4	0.5140 0.5140 1.0660 1.0660	Reading Level dBuV 30.63 20.08 21.75 10.76 20.54	Correct Factor dB 10.03 10.03 10.06	Measure- ment dBuV 40.66 30.11 31.81 20.82	Limit dBuV 56.00 46.00 56.00 46.00 56.00	dB -15.34 -15.89 -24.19 -25.18	QP AVG QP AVG	
0.150 No. M 1 * 2 3 4 5	0.5140 0.5140 0.5140 1.0660 1.8819	Reading Level dBuV 30.63 20.08 21.75 10.76 20.54 10.82	Correct Factor dB 10.03 10.03 10.06 10.06	Measure- ment dBuV 40.66 30.11 31.81 20.82 30.60	Limit dBuV 56.00 46.00 56.00 46.00 46.00	dB -15.34 -15.89 -24.19 -25.18 -25.40	QP AVG QP AVG QP	
0.150 No. M 1 * 2 3 4 5	0.5140 0.5140 1.0660 1.8819	Reading Level dBuV 30.63 20.08 21.75 10.76 20.54 10.82 19.24	Correct Factor dB 10.03 10.03 10.06 10.06 10.06	Measure- ment dBuV 40.66 30.11 31.81 20.82 30.60 20.88	Limit dBuV 56.00 46.00 56.00 46.00 56.00 56.00	dB -15.34 -15.89 -24.19 -25.18 -25.40 -25.12	QP AVG QP AVG QP AVG	
0.150 No. M 1 * 2 3 4 5 6 7	0.5140 0.5140 1.0660 1.8819 1.8819 3.3900	Reading Level dBuV 30.63 20.08 21.75 10.76 20.54 10.82 19.24 9.93	Correct Factor dB 10.03 10.03 10.06 10.06 10.06 10.06 10.06	Measure- ment dBuV 40.66 30.11 31.81 20.82 30.60 20.88 29.25	Limit dBuV 56.00 46.00 56.00 46.00 56.00 46.00 46.00	dB -15.34 -15.89 -24.19 -25.18 -25.40 -25.12 -26.75	QP AVG QP AVG QP AVG QP	
0.150 No. M 1 * 2 3 4 5 6 7 8	0.5140 0.5140 1.0660 1.8819 1.8819 3.3900 3.3900	Reading Level dBuV 30.63 20.08 21.75 10.76 20.54 10.82 19.24 9.93 16.55	Correct Factor dB 10.03 10.03 10.06 10.06 10.06 10.06 10.01 10.01	Measure- ment dBuV 40.66 30.11 31.81 20.82 30.60 20.88 29.25 19.94	Limit dBuV 56.00 46.00 56.00 46.00 56.00 46.00 56.00 56.00	dB -15.34 -15.89 -24.19 -25.18 -25.40 -25.12 -26.75 -26.06	QP AVG QP AVG QP AVG QP AVG	
0.150 No. M 1 * 2 3 4 5 6 7 8 9	0.5140 0.5140 1.0660 1.0660 1.8819 3.3900 3.3900 4.6178	Reading Level dBuV 30.63 20.08 21.75 10.76 20.54 10.82 19.24 9.93 16.55 7.06	Correct Factor dB 10.03 10.03 10.06 10.06 10.06 10.01 10.01 9.97	Measure- ment dBuV 40.66 30.11 31.81 20.82 30.60 20.88 29.25 19.94 26.52	Limit dBuV 56.00 46.00 56.00 46.00 56.00 46.00 56.00 46.00 46.00	dB -15.34 -15.89 -24.19 -25.18 -25.40 -25.12 -26.75 -26.06 -29.48	QP AVG QP AVG QP AVG QP AVG	



Page: 13 of 44



EUT:	М	obile phone	Э	Model	Name :		S400			
Temperature:	25	5 ℃	US I	Relative Humidity: 55%				ABIN		
Test Voltage:	A	C 120V/60I	Hz	North Property		6	M'S			
Terminal:	Ne	eutral	~ W	U		1 6				
Test Mode:	A	C Charging	with TX B	Mode	11/10/8					
Remark:	0	nly worse o	ase is rep	orted		CIN I	133			
90.0 dBuV										
							QP: AVG:			
	-									
LX W										
40	Mymm.	M	X	× ×	. Xh.:					
1\M_m.	. 100	JAN DE VILAN	Maray, Managara	where we will have	ynd _{had} iri	4444	and the same of the same	mune		
1 m M M	/4/1 ⁻⁴ /4/4 ₄₄₄	ATT THE MAN AND THE PROPERTY OF	contract have been a	Kapana in munum	selverus.		and whether the	- The Control of the		
		(4)	A	1, 1, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,	and the same	Wallsmannya wan ang 1860.	- Andrew Control of the Control of t	pea		
								AVI		
0.150		0.5	(M	IHz)	5			30.000		
		Reading	Correct	Measure-						
No. Mk.	Freq.	Level	Factor	ment	Limit	Over				
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Commer		
1 0	.1980	35.28	10.12	45.40	63.69	-18.29	QP			
2 0	.1980	22.13	10.12	32.25	53.69	-21.44	AVG			
3 * 0	.5299	29.01	10.02	39.03	56.00	-16.97	QP			
4 0	.5299	18.01	10.02	28.03	46.00	-17.97	AVG			
5 1	.0820	20.38	10.15	30.53	56.00	-25.47	QP			
6 1	.0820	10.23	10.15	20.38	46.00	-25.62	AVG			
7 2	.0700	20.12	10.06	30.18	56.00	-25.82	QP			
8 2	.0700	9.43	10.06	19.49	46.00	-26.51	AVG			
9 3	.1780	19.25	10.06	29.31	56.00	-26.69	QP			
10 3	.1780	9.54	10.06	19.60	46.00	-26.40	AVG			
11 4	.2940	18.93	10.06	28.99	56.00	-27.01	QP			
12 4	.2940	9.36	10.06	19.42	46.00	-26.58	AVG			
*:Maximum data	x:Over lim	it !:over marg	jin							



Page: 14 of 44



EUT:	Mobile pho	ne	Model	Name :	S400	المالية
Temperature:	25 ℃		Relative Humidity: 55%			
Test Voltage:	AC 240V/6	0Hz		CHILL		I WELL
Terminal:	Line		11:11		CHILD !	2
Test Mode:	AC Chargir	ng with TX E	Mode		Comment	COLUMN TO SERVICE
Remark:	Only worse	case is rep	orted	March		Alle
90.0 dBuV						
						QP: — AVG: —
40 / //////////////////////////////////	M. M. M.	, , , X, , , , , , , , , , , , , , , ,	S 1			
A. A. A. A.	JAM M. M. M. Jan. J.	JAN Marin Jan Marin	Charles Hilliam Carlo	MANAUL ALLENA	photography and produce a section	No.
V.V.V.V.	LILIT INTO MARKATAN	Mr. HALLAGE VA	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			May a should be a short of the state of the
M. W. M.	M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	M	$\wedge \wedge \wedge \wedge$	The same way	provide participation of the same	pea
	14					AV
10						
0.150	0.5	(M	lHz)	5		30.000
	Reading	Correct	Measure-			
No. Mk. Fre		Factor	ment		ver	
MH	łz dBuV	dB	dBuV	dBuV	dB Detect	tor Comme
1 0.22	60 32.80	10.02	42.82	62.59 -19).77 QF)
2 0.22	60 19.30	10.02	29.32	52.59 -23	3.27 AV	′G
2 0.22 3 0.27		10.02 10.02	29.32 41.66	52.59 -23 61.12 -19		
	00 31.64).46 QF	•
3 0.27	00 31.64 00 18.84	10.02	41.66	61.12 -19	9.46 QF 2.26 AV	G
3 0.27 4 0.27	00 31.64 00 18.84 80 32.76	10.02 10.02	41.66 28.86	61.12 -19 51.12 -22	0.46 QF 2.26 AV 3.20 QF	/G
3 0.27 4 0.27 5 * 0.53	00 31.64 00 18.84 80 32.76 80 21.05	10.02 10.02 10.04	41.66 28.86 42.80	61.12 -19 51.12 -22 56.00 -13	9.46 QF 2.26 AV 3.20 QF 4.91 AV	r'G
3 0.27 4 0.27 5 * 0.53 6 0.53	00 31.64 00 18.84 80 32.76 80 21.05 20 26.62	10.02 10.02 10.04 10.04	41.66 28.86 42.80 31.09	61.12 -19 51.12 -22 56.00 -13 46.00 -14	9.46 QF 2.26 AV 3.20 QF 4.91 AV 9.28 QF	/G
3 0.27 4 0.27 5 * 0.53 6 0.53 7 0.78	00 31.64 00 18.84 80 32.76 80 21.05 20 26.62 20 14.63	10.02 10.02 10.04 10.04 10.10	41.66 28.86 42.80 31.09 36.72	61.12 -19 51.12 -22 56.00 -13 46.00 -14 56.00 -19	0.46 QF 2.26 AV 3.20 QF 4.91 AV 0.28 QF	/G //G //G
3 0.27 4 0.27 5 * 0.53 6 0.53 7 0.78 8 0.78	00 31.64 00 18.84 80 32.76 80 21.05 20 26.62 20 14.63 60 25.44	10.02 10.02 10.04 10.04 10.10 10.10 10.06	41.66 28.86 42.80 31.09 36.72 24.73	61.12 -19 51.12 -22 56.00 -13 46.00 -19 46.00 -21	9.46 QF 2.26 AV 3.20 QF 4.91 AV 9.28 QF 1.27 AV 0.50 QF	/G
3 0.27 4 0.27 5 * 0.53 6 0.53 7 0.78 8 0.78 9 1.28	00 31.64 00 18.84 80 32.76 80 21.05 20 26.62 20 14.63 60 25.44 60 14.08	10.02 10.02 10.04 10.04 10.10 10.10 10.06	41.66 28.86 42.80 31.09 36.72 24.73 35.50 24.14	61.12 -19 51.12 -22 56.00 -13 46.00 -14 56.00 -19 46.00 -21 56.00 -20 46.00 -21	9.46 QF 2.26 AV 3.20 QF 4.91 AV 9.28 QF 1.27 AV 0.50 QF	/G
3 0.27 4 0.27 5 * 0.53 6 0.53 7 0.78 8 0.78 9 1.28	00 31.64 00 18.84 80 32.76 80 21.05 20 26.62 20 14.63 60 25.44 60 14.08 20 24.94	10.02 10.02 10.04 10.04 10.10 10.10 10.06	41.66 28.86 42.80 31.09 36.72 24.73 35.50	61.12 -19 51.12 -22 56.00 -13 46.00 -14 56.00 -19 46.00 -21 56.00 -20	9.46 QF 9.26 AV 9.20 QF 9.91 AV 9.28 QF 1.27 AV 9.50 QF 1.86 AV 1.00 QF	/G //G //G //G //G //G



Page: 15 of 44



	IVIC	obile phone		mode.	Name :		S400	
emperature:	25	5 °C		Relative Humidity: 55%				
est Voltage:	AC	C 240V/60I	Hz		BAIL			A British
erminal:	Ne	eutral		11877		(11)	U.S.	
est Mode:	AC	C Charging	with TX B	Mode		1 6	100	MAL
Remark:	Or	nly worse o	case is repo	orted	11/12		1 N	
90.0 dBuV								
							QP: AVG:	
		×						
40 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	who	M. M. Markey	d Ludhingwh	M. L. Marketting.	X.			
	. W	, A-40 A	MUSide. AND.	Mile. uses shelves	w MW	MAHAMA	house hours when the	
1 Nulmy	nuAsh.	JAMA WARANTA W	MATERIAL MAT		۱ .		Vic	Halfran Africa
W V '	" \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1.00	Apply have	7 7 0	or V brown	polydonia muse	man man	pe
							The	AV
-10		0.5	(M	по	5			20,000
0.150		0.5	(М	Hz)	5			30.000
			Correct	Hz) Measure-				30.000
0.150	Freq.	Reading Level				Over		30.000
0.150 No. Mk. F		Reading	Correct	Measure-		Over dB	Detector	30.000 Comme
0.150 No. Mk. F	Freq.	Reading Level	Correct Factor	Measure- ment	Limit		Detector QP	
0.150 No. Mk. F	Freq. MHz	Reading Level	Correct Factor	Measure- ment	Limit dBuV 64.39	dB		
0.150 No. Mk. F 1 0.2	Freq. MHz 1819	Reading Level dBuV 30.03	Correct Factor dB	Measure- ment dBuV 40.15	Limit dBuV 64.39 54.39	dB -24.24	QP	
0.150 No. Mk. F 1 0.2 2 0.3 3 * 0.9	Freq. MHz 1819	Reading Level dBuV 30.03	Correct Factor dB 10.12 10.12	Measure- ment dBuV 40.15 23.95	Limit dBuV 64.39 54.39 56.00	dB -24.24 -30.44	QP AVG	
0.150 No. Mk. F 1 0.2 3 * 0.8 4 0.8	Freq. MHz 1819 1819 5420	Reading Level dBuV 30.03 13.83 31.34	Correct Factor dB 10.12 10.12	Measure- ment dBuV 40.15 23.95 41.36	Limit dBuV 64.39 54.39 56.00 46.00	dB -24.24 -30.44 -14.64	QP AVG QP	
0.150 No. Mk. F 1 0.2 2 0.3 4 0.8 5 0.1	Freq. MHz 1819 1819 5420	Reading Level dBuV 30.03 13.83 31.34 19.02	Correct Factor dB 10.12 10.12 10.02 10.02	Measure- ment dBuV 40.15 23.95 41.36 29.04	Limit dBuV 64.39 54.39 56.00 46.00	dB -24.24 -30.44 -14.64 -16.96	QP AVG QP AVG	
0.150 No. Mk. F 1 0 2 0 3 * 0 4 0 5 0 6 0	Freq. MHz 1819 1819 5420 5420 7900	Reading Level dBuV 30.03 13.83 31.34 19.02 26.23	Correct Factor dB 10.12 10.12 10.02 10.02 10.06	Measure- ment dBuV 40.15 23.95 41.36 29.04 36.29	Limit dBuV 64.39 54.39 56.00 46.00 46.00	dB -24.24 -30.44 -14.64 -16.96 -19.71	QP AVG QP AVG QP	
0.150 No. Mk. F 1 0.2 2 0.3 4 0.8 5 0.6 6 0.7 1 1.3	Freq. MHz 1819 1819 5420 5420 7900	Reading Level dBuV 30.03 13.83 31.34 19.02 26.23 14.53	Correct Factor dB 10.12 10.12 10.02 10.02 10.06 10.06	Measure- ment dBuV 40.15 23.95 41.36 29.04 36.29 24.59	Limit dBuV 64.39 54.39 56.00 46.00 56.00	dB -24.24 -30.44 -14.64 -16.96 -19.71 -21.41	QP AVG QP AVG QP AVG	
0.150 No. Mk. F 1 0.2 3 * 0.8 4 0.8 5 0.7 1.3 8 1.3	Freq. MHz 1819 1819 5420 5420 7900 7900 3220	Reading Level dBuV 30.03 13.83 31.34 19.02 26.23 14.53 24.49	Correct Factor dB 10.12 10.12 10.02 10.02 10.06 10.06 10.13	Measure- ment dBuV 40.15 23.95 41.36 29.04 36.29 24.59 34.62	Limit dBuV 64.39 54.39 56.00 46.00 56.00 46.00 46.00	dB -24.24 -30.44 -14.64 -16.96 -19.71 -21.41 -21.38	QP AVG QP AVG QP AVG QP	
0.150 No. Mk. F 1 0.2 2 0.3 3 * 0.8 4 0.9 5 0.7 6 0.7 7 1.3 8 1.3	Freq. MHz 1819 1819 5420 5420 7900 7900 3220 3220	Reading Level dBuV 30.03 13.83 31.34 19.02 26.23 14.53 24.49 13.39	Correct Factor dB 10.12 10.12 10.02 10.02 10.06 10.13 10.13	Measure- ment dBuV 40.15 23.95 41.36 29.04 36.29 24.59 34.62 23.52	Limit dBuV 64.39 54.39 56.00 46.00 56.00 46.00 56.00	dB -24.24 -30.44 -14.64 -16.96 -19.71 -21.41 -21.38 -22.48	QP AVG QP AVG QP AVG QP AVG	
0.150 No. Mk. F 1 0.2 2 0.3 3 * 0.8 4 0.8 5 0.7 6 0.7 7 1.3 8 1.3 9 2.6 10 2.6	Freq. MHz 1819 1819 5420 7900 7900 3220 3220 6740	Reading Level dBuV 30.03 13.83 31.34 19.02 26.23 14.53 24.49 13.39 20.27	Correct Factor dB 10.12 10.12 10.02 10.06 10.06 10.13 10.13 10.06	Measure- ment dBuV 40.15 23.95 41.36 29.04 36.29 24.59 34.62 23.52 30.33	Limit dBuV 64.39 54.39 56.00 46.00 56.00 46.00 56.00 46.00	dB -24.24 -30.44 -14.64 -16.96 -19.71 -21.41 -21.38 -22.48 -25.67	QP AVG QP AVG QP AVG QP AVG	



Page: 16 of 44

5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.209

5.1.2 Test Limit

Radiated Emission Limits (9kHz~1000MHz)

Frequency (MHz	Field Strength (microvolt/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

Radiated Emission Limit (Above 1000MHz)

Frequency	Class A (dBuV	//m)(at 3 M)	Class B (dBuV/m)(at 3 M)			
(MHz)	Peak	Average	Peak	Average		
Above 1000	80	60	74	54		

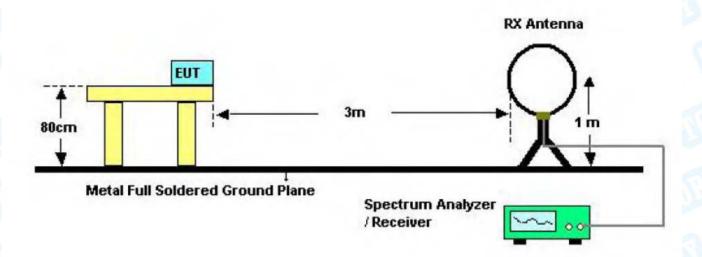
Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)

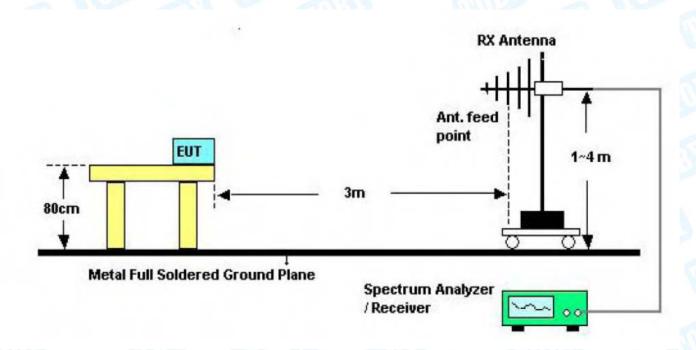


Page: 17 of 44

5.2 Test Setup



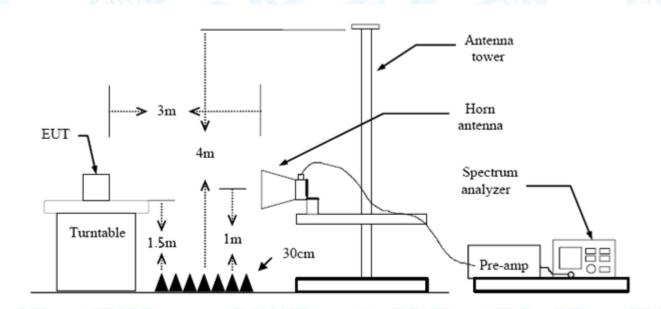
Below 30MHz Test Setup



Below 1000MHz Test Setup







Above 1GHz Test Setup

5.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.



Page: 19 of 44

5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

5.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 kHz with Peak Detector for Average Values.

Test data please refer the following pages.



20 of 44 Page:

EUT:	Mobile phone	Model:	S400				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz					
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	BLE TX 2402 Mode		A HILL				
Remark:	Only worse case is reported						
00 0 ID 111							



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		92.1388	47.13	-22.50	24.63	43.50	-18.87	peak
2		174.4241	48.94	-20.91	28.03	43.50	-15.47	peak
3		309.9977	45.93	-16.70	29.23	46.00	-16.77	peak
4		364.2595	50.81	-14.52	36.29	46.00	-9.71	peak
5		729.3583	42.66	-7.13	35.53	46.00	-10.47	peak
6	*	776.8778	44.72	-6.72	38.00	46.00	-8.00	peak

^{*:}Maximum data x:Over limit !:over margin



Page: 21 of 44

١	EUT:	Mobile phone	Model:	S400				
	Temperature:	25 ℃	Relative Humidity:	55%				
	Test Voltage:	AC 120V/60Hz	AC 120V/60Hz					
	Ant. Pol.	Vertical						
	Test Mode:	BLE TX 2402 Mode	BLE TX 2402 Mode					
	Remark:	Only worse case is repor	Only worse case is reported					



No	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		30.0000	39.81	-13.96	25.85	40.00	-14.15	peak
2		42.6000	46.75	-21.26	25.49	40.00	-14.51	peak
3	*	54.0711	54.61	-24.45	30.16	40.00	-9.84	peak
4		88.6524	54.76	-22.77	31.99	43.50	-11.51	peak
5		642.8613	37.71	-8.67	29.04	46.00	-16.96	peak
6		729.3583	40.33	-7.13	33.20	46.00	-12.80	peak

^{*:}Maximum data x:Over limit !:over margin



22 of 44 Page:

		7:33	
EUT:	Smart phone	Model:	S400
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		1339
Ant. Pol.	Horizontal		
Test Mode:	BLE Mode TX 2402 MHz		J. Hilliam
Remark:	No report for the emission	which more than 10 dB t	pelow the

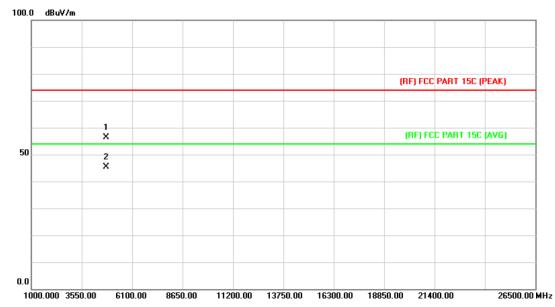


N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4803.627	43.67	13.44	57.11	74.00	-16.89	peak
2		*	4804.741	31.95	13.44	45.39	54.00	-8.61	AVG



Page: 23 of 44

EUT:	Smart phone	Model:	S400			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz		THE			
Ant. Pol.	Vertical					
Test Mode:	BLE Mode TX 2402 MHz		A MULL			
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.	لا مر لا				
İ						

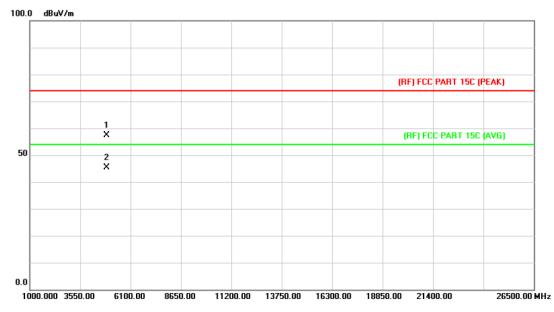


No	. Mk	. Freq.	•	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4803.814	42.93	13.44	56.37	74.00	-17.63	peak
2	*	4804.367	31.84	13.44	45.28	54.00	-8.72	AVG



Page: 24 of 44

EUT:	Smart phone	Model:	S400			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz	01 - 6	THE STATE OF			
Ant. Pol.	Horizontal					
Test Mode:	BLE Mode TX 2442 MHz					
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					

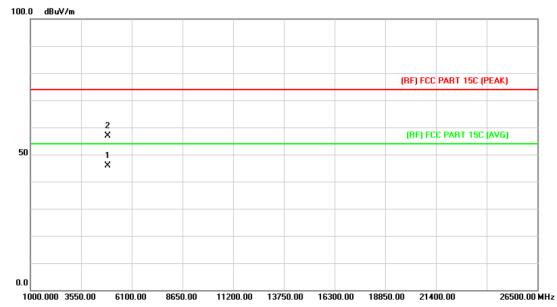


N	0.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4884.367	43.40	13.92	57.32	74.00	-16.68	peak
2	,	k	4884.814	31.57	13.92	45.49	54.00	-8.51	AVG



Page: 25 of 44

EUT:	Smart phone	Model:	S400		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60Hz				
Ant. Pol.	Vertical				
Test Mode:	BLE Mode TX 2442 MHz		THE PARTY OF THE P		
Remark:	No report for the emission which more than 10 dB below the				
	prescribed limit.	2 M			

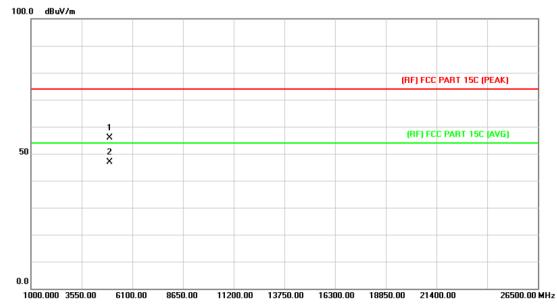


N	lo. M	k. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4883.841	31.89	13.92	45.81	54.00	-8.19	AVG
2		4884.657	43.04	13.92	56.96	74.00	-17.04	peak



Page: 26 of 44

EUT:	Smart phone	Model:	S400			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz	01				
Ant. Pol.	Horizontal					
Test Mode:	BLE Mode TX 2480 MHz		A THURSDAY			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					
	procended intit.					

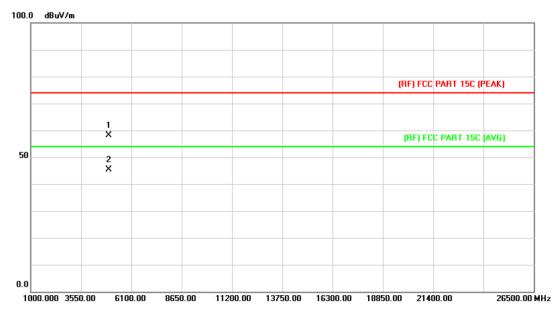


No	o. I	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4959.654	41.55	14.36	55.91	74.00	-18.09	peak
2	*	r	4959.844	32.53	14.36	46.89	54.00	-7.11	AVG



Page: 27 of 44

EUT:	Smart phone	Model:	S400
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	100 L	
Ant. Pol.	Vertical		
Test Mode:	BLE Mode TX 2480 MHz	z milios	
Remark:	No report for the emission	on which more than 10	dB below the
	prescribed limit.		



No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4960.354	43.77	14.36	58.13	74.00	-15.87	peak
2	*	4960.651	30.91	14.36	45.27	54.00	-8.73	AVG



Page: 28 of 44

6. Restricted Bands Requirement

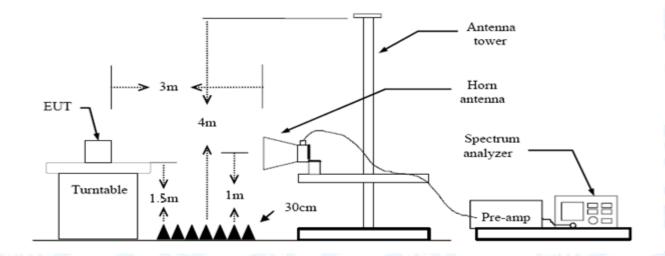
6.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

6.1.2 Test Limit

Restricted Frequency	Class B (dB	BuV/m)(at 3 M)
Band (MHz)	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

6.2 Test Setup



6.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked



Page: 29 of 44

and then Quasi Peak detector mode re-measured.

- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 KHz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

6.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 kHz with Peak Detector for Average Values.

Test data please refer the following pages.

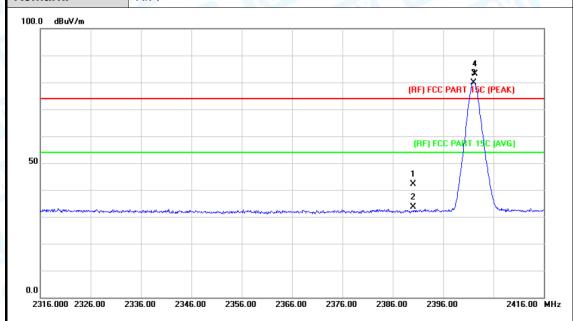




Page: 30 of 44

(1) Radiation Test

EUT:	Smart phone	Model:	S400
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3V		
Ant. Pol.	Horizontal		A HALL
Test Mode:	BLE Mode TX 2402 MHz	(1)	
Remark:	N/A	130	



No	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	41.35	0.77	42.12	74.00	-31.88	peak
2		2390.000	32.74	0.77	33.51	54.00	-20.49	AVG
3	*	2402.100	79.01	0.82	79.83	Fundamental F	requency	AVG
4	Χ	2402.300	82.39	0.82	83.21	Fundamental	Frequency	peak



Page: 31 of 44

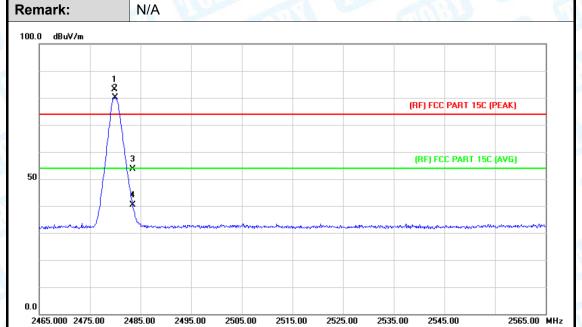


JT:			Smar	t phone	9			Мо	del:				S40	00		
m	peratur	e:	25 °C			33		Rel	ative	Hum	idity:		55%	6		F
st	Voltage	ə :	DC 3	V	الفرار		1				Call					
nt.	Pol.		Vertic	cal		17.				4	63			1		
st	Mode:		BLE	Mode T	X 24	02 MH	Z	6		23		A	1	197		
em	ark:		N/A	AR			51	16								Ì
00.0	dBuV/m															
												3				
-										(RF) FCC	XI P <mark>A</mark> BT	15C (P	EAK)	-	
												Λ				
												Ц				
50											(RF) FC	PAR	T 15C	AVG)		
20										1 X	1					
-										2	-				-	
-	(man/man/man/man/man/man/man/man/man/man/	Andrew State	-	~~~	مهرية ميلومونيد	mohamora	Large Lawrence A	*********		X	money			سيحوطونك	esperante.	
0.0																
	20.000 233	D.00	2340.00	2350.00	236	0.00 2	370.00	2380.	.00	2390.00	2400	.00		242	20.00	мн
				Read	lina	Corr	ect	Mea	sure							_
Ν	lo. Mk	. F	req.	Lev	_	Fac			ent		mit	(Over			
			1Hz	dBu		dB/ı			uV/m	dE	BuV/m		dB	[Detec	to
1		2390	0.000	41.7	74	0.7	7	42	2.51	7	4.00	-	31.4	9	pea	ık
2		2390	0.000	31.6	36	0.7	7	32	2.43	5	4.00	-	21.5	7	AV	G
3	Х	2402	2.200	80.4	12	0.8	2	81	.24	Fund	lament	al Fr	equen	су	pea	ık
4	*	2402	2.300	77.0	08	0.8	2	77	.90	– Funda	menta	l Fre	quenc	y –	AV	G
7		2702		11.0	,,,	0.0	_	11	.50	i und	c iild		quenc	y	/\\	,



32 of 44 Page:

EUT:	Smart phone	Model:	S400
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3V		
Ant. Pol.	Horizontal	U.	
Test Mode:	BLE Mode TX 2480 MH	z	THE PARTY OF THE P



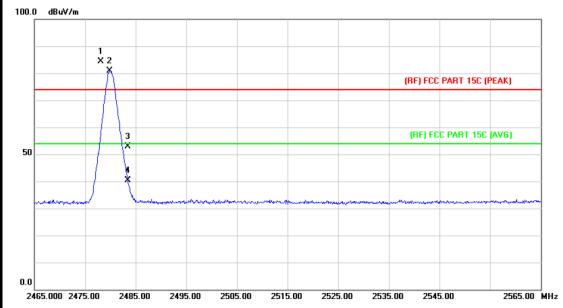
No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2479.900	82.02	1.15	83.17	Fundamental	Frequency	peak
2	*	2480.000	78.96	1.15	80.11	Fundamental	Frequency	AVG
3		2483.500	52.51	1.17	53.68	74.00	-20.32	peak
4		2483.500	39.14	1.17	40.31	54.00	-13.69	AVG



33 of 44 Page:

10	TOTAL	7
11	КV	
U	\mathbf{L}	
	0	'OBY

EUT:	Smart phone	Model:	S400
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3V		
Ant. Pol.	Vertical		
Test Mode:	BLE Mode TX 2480 MHz		
Remark:	N/A		1:33



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2478.100	83.18	1.15	84.33	Fundamental	Frequency	peak
2	*	2479.900	79.71	1.15	80.86	Fundamental F	requency	AVG
3		2483.500	51.70	1.17	52.87	74.00	-21.13	peak
4		2483.500	39.13	1.17	40.30	54.00	-13.70	AVG

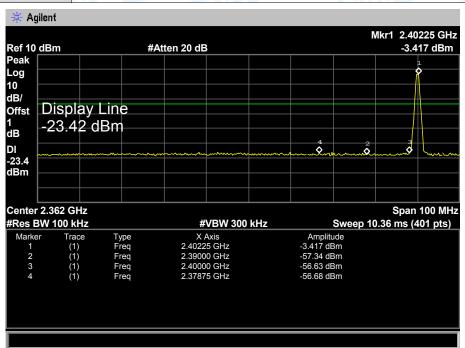


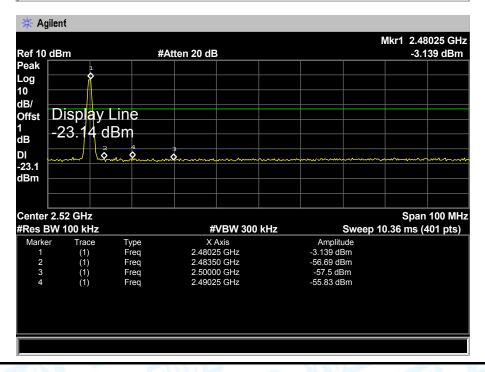


Page: 34 of 44

(2) Conducted Test

EUT:	Smart phone	Model:	S400			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Test Mode:	BLE Mode TX 2402MHz / B	BLE Mode TX 2402MHz / BLE Mode TX 2480MHz				
Remark:	The EUT is programed in co	The EUT is programed in continuously transmitting mode				







Page: 35 of 44

7. Bandwidth Test

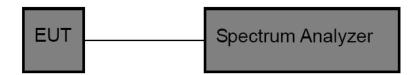
7.1 Test Standard and Limit

7.1.1 Test Standard FCC Part 15.247 (a)(2)

7.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210						
Test Item	Limit	Frequency Range(MHz)				
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5				

7.2 Test Setup



7.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) The bandwidth is measured at an amplitude level reduced 6dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
- (3)Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:100 kHz, and Video Bandwidth:300 kHz, Detector: Peak, Sweep Time set auto.

7.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, middle and high channel for the test.



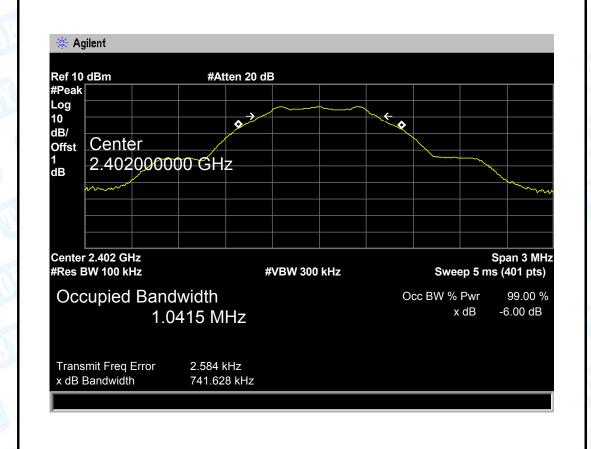
Page: 36 of 44

7.5 Test Data

EUT:	Smart phone	Model:	S400	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 3.7V	THUE		
Test Mode:	BLE TX Mode	7.1	11:30	
Channel frequen	cy 6dB Bandwidth	99% Bandwidth	Limit	
(MHz)	(kHz)	(kHz)	(kHz)	
2402	741.628	1041.50		
2442	733.282	1041.20	>=500	
2480 737.195		1040.50		
	D. E.	N. C		

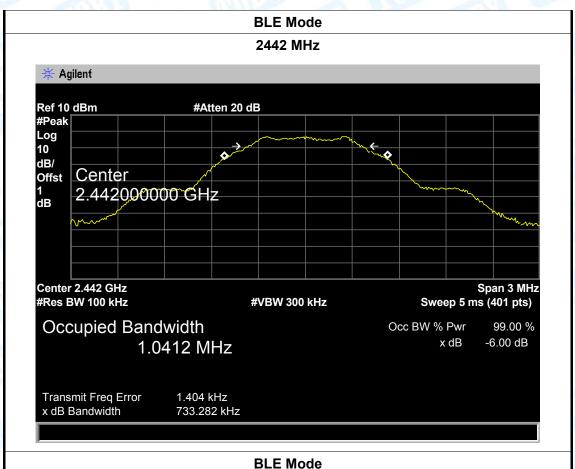
BLE Mode

2402 MHz





Page: 37 of 44



2480 MHz 🔆 Agilent #Atten 20 dB Ref 10 dBm #Peak Log E Q 10 9 dB/ Center Offst 1 dB 2.480000000 GHz Center 2.48 GHz Span 3 MHz #Res BW 100 kHz Sweep 5 ms (401 pts) **#VBW 300 kHz** Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 1.0405 MHz Transmit Freq Error 2.378 kHz 737.195 kHz x dB Bandwidth



Page: 38 of 44

8. Peak Output Power Test

8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247 (b)

8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210					
Test Item	Limit	Frequency Range(MHz)			
Peak Output Power	1 Watt or 30 dBm	2400~2483.5			

8.2 Test Setup



8.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement is according to section 9.1.1 of KDB 558074 D01 DTS Meas Guidance v03r02.

- (1) Set the RBW≥DTS Bandwidth
- (2) Set VBW≥3*RBW
- (3) Set Span≥3*RBW
- (4) Sweep time=auto
- (5) Detector= peak
- (6) Trace mode= maxhold.
- (7) Allow trace to fully stabilize, and then use peak marker function to determine the peak amplitude level.

8.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

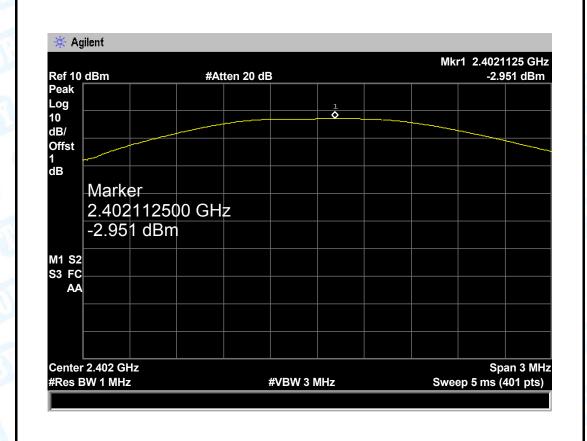


Page: 39 of 44

8.5 Test Data

EUT:	Smart pho	one	Model:		S400	2
Temperature:	25 ℃		Relative Hu	midity:	55%	3
Test Voltage:	DC 3.7V	11:39	THE PERSON NAMED IN		a line	
Test Mode:	BLE TX M	lode			33	1
Channel frequen	cy (MHz)	Test Resu	lt (dBm)	L	_imit (dBm)	
2402		-2.9	51			
2442		-2.3	58		30	
2480		-2.6	72			
		BLE N	lode			

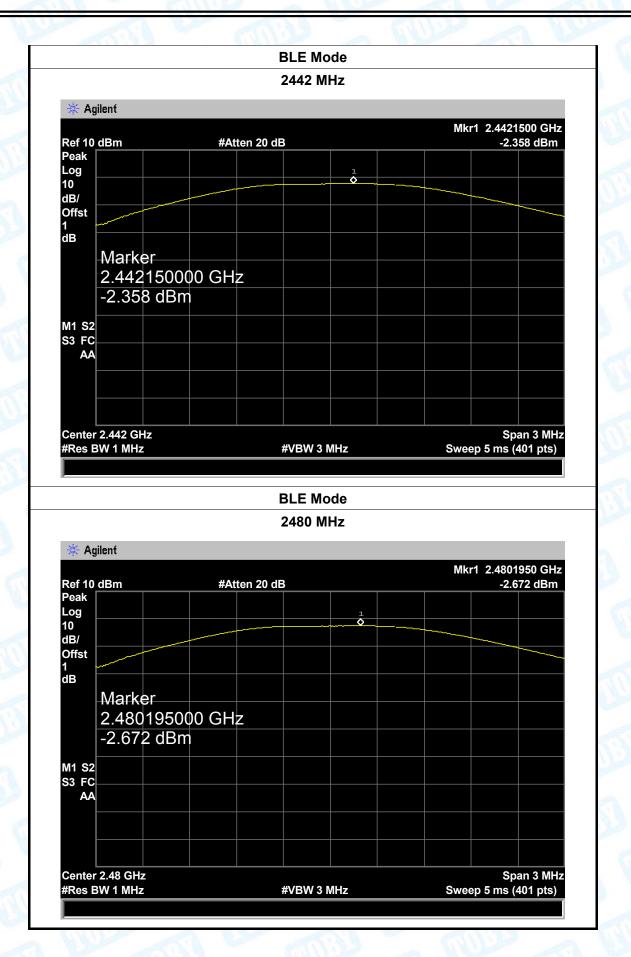
2402 MHz





Page: 40 of 44







Page: 41 of 44

9. Power Spectral Density Test

9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.247 (e)

9.1.2 Test Limit

FCC Part 15 Subpart C(15.247)				
Test Item	Limit	Frequency Range(MHz)		
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5		

9.2 Test Setup



9.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v03r02.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser center frequency to DTS channel center frequency.
- (3) Set the span to 1.5 times the DTS bandwidth.
- (4) Set the RBW to: 3 kHz(5) Set the VBW to: 10 kHz
- (6) Detector: peak(7) Sweep time: auto
- (8) Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

9.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Midle and high channel for the test.



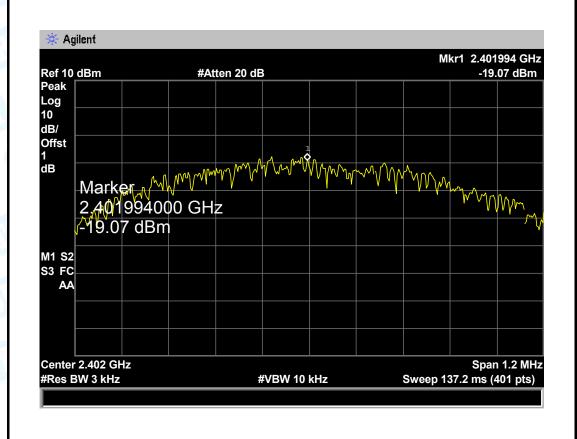
Page: 42 of 44

8.5 Test Data

EUT:	Smart phone		Model:	S400	
Temperature:	25 ℃		Relative Humidity	: 55%	
Test Voltage:	DC 3.7V				
Test Mode:	BLE TX M	1ode			
Channel Frequency		Power Density		Limit	
(MHz)		(3 kHz/dBm)		(dBm)	
2402		-19.07			
2442 2480		-16	6.96	8	
		-17.29			
		DIE	Modo		

BLE Mode

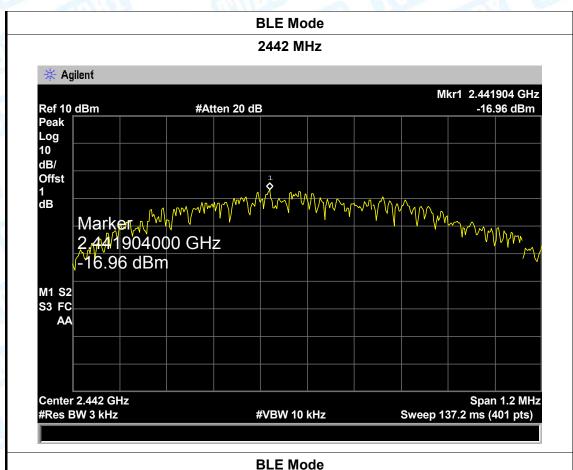
2402 MHz







Page: 43 of 44



2480 MHz 🛊 Agilent Mkr1 2.479904 GHz -17.29 dBm Ref 10 dBm #Atten 20 dB Peak Log 10 dB/ \$ months and the second Offst 1 dB Marker Mm/m/m/ 2.479904000 GHz -17.29 dBm M1 S2 S3 FC AA Center 2.48 GHz Span 1.2 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 137.2 ms (401 pts)



Page: 44 of 44

10. Antenna Requirement

10.1 Standard Requirement

10.1.1 Standard FCC Part 15.203

10.1.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

10.2 Antenna Connected Construction

The directional gains of the antenna used for transmitting is 1.39 dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

10.3 Result

The EUT antenna is a FPC Antenna. It complies with the standard requirement.

Antenna Type	
☐ Permanent attached antenna	5
▼ Unique connector antenna	
☐ Professional installation antenna	