FCC RF Test Report

APPLICANT : Huawei Technologies Co., Ltd.

EQUIPMENT: Smart Phone

BRAND NAME : Honor MODEL NAME : YAL-L41

FCC ID : QISYAL-L41

STANDARD : FCC Part 15 Subpart C §15.247

CLASSIFICATION : (DTS) Digital Transmission System

The product was received on May 10, 2019 and testing was completed on May 20, 2019. We, Sporton International (ShenZhen) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (ShenZhen) Inc., the test report shall not be reproduced except in full.

Derreck Chen

Reviewed by: Derreck Chen / Supervisor

Frie Shih

Approved by: Eric Shih / Manager

Sporton International (ShenZhen) Inc.

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055

People's Republic of China

Sporton International (Shenzhen) Inc.

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Report Issued Date : May 27, 2019

Report No.: FR951002B

Report Version : Rev. 01

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR951002B	Rev. 01	Initial issue of report	May 27, 2019

 ${\it Sporton\ International\ (Shenzhen)\ Inc.}$

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	≥ 0.5MHz	Pass	-
3.2	15.247(b)(3)	Peak Output Power	≤ 30dBm	Pass	-
3.3	15.247(e)	Power Spectral Density	≤ 8dBm/3kHz	Pass	-
3.4	15.247(d)	Conducted Band Edges and Spurious Emission	≤ 20dBc	Pass	-
3.5	15.247(d)	Radiated Band Edges and Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 9.23 dB at 2485.640 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 14.32 dB at 0.170 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

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1 General Description

1.1 Applicant

Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

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1.2 Product Feature of Equipment Under Test

Product Feature				
Equipment	Smart Phone			
Brand Name	Honor			
Model Name	YAL-L41			
FCC ID	QISYAL-L41			
	GSM/GPRS/EGPRS/WCDMA/HSPA/DC-HSDPA/			
	HSPA+ (16QAM uplink is not supported)/LTE			
	WLAN 2.4GHz 802.11b/g/n HT20/HT40			
EUT supports Radios application	WLAN 5GHz 802.11a/n HT20/HT40			
	WLAN 5GHz 802.11ac VHT20/VHT40/VHT80/VHT160			
	Bluetooth BR/EDR/LE			
	NFC and GNSS			
	Conducted: 869436040038461/869436040042968			
IMEI Code	Conduction: 869436040038560/869436040043065			
	Radiation: 867285040040809/867285040042052			
HW Version	HL2YALEM04			
SW Version	9.1.0.119(C900E119R1P2)			

Remark:

- **1.** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
- 2. There are two types of EUT sample 1 and sample 2, the differences between two samples is for Battery which is different suppliers. We only choose sample 1 to perform full tests.

1.3 Product Specification of Equipment Under Test

Standards-related Product Specification				
Tx/Rx Frequency Range	2402 MHz ~ 2480 MHz			
Number of Channels	40			
Carrier Frequency of Each Channel	40 Channel(37 hopping + 3 advertising channel)			
Maximum Output Power to Antenna	Bluetooth v4.0 LE: 7.00 dBm (0.0050 W) Bluetooth v5.0 LE: 6.80 dBm (0.0048 W)			
Antenna Type / Gain	Internal Antenna with gain -1.00 dBi			
Type of Modulation	Bluetooth LE : GFSK			

Note: For BLE v4.0/5.0 mode, the whole testing has assessed only BLE v4.0 mode by referring to their higher conducted power for RSE testing.

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1.4 Modification of EUT

No modifications are made to the EUT during all test items.

1.5 Testing Location

Sporton International (Shenzhen) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

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Test Firm	Sporton International (Shenzhen) Inc.					
	1/F, 2/F, Bldg 5, Shiling	g Industrial Zone, Xinwei	Village, Xili, Nanshan, Shenzhen,			
Toot Site Leastion	518055 People's Republ	ic of China				
Test Site Location	TEL: +86-755-8637-9589					
	FAX: +86-755-8637-959	5				
	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.			
Test Site No.	TH01-SZ	CN1256	CN1256 421272			
	CO01-SZ	CN1250				
Test Firm	Sporton International (Sh	nenzhen) Inc				

Test Firm	Sporton International (Shenzhen) Inc.				
Test Site Location	No. 3 Bldg the third floor of south, Shahe River west, Fengzeyuan Warehouse, Nanshan Shenzhen, 518055 People's Republic of China				
	TEL: +86-755-3320-2398	3			
To -4 0:40 No	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.		
Test Site No.	03CH01-SZ	CN1256	421272		

1.6 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 15 Subpart C §15.247
- FCC KDB 558074 D01 15.247 Meas Guidance v05r01
- ANSI C63.10-2013

Remark:

- All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

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1.7 Specification of Accessory

Manufacturer HUNTKEY Huawei Technologies Co., Ltd. Model Name HW-050450U00		T	T	1	T	
Manufacturer Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450U00			<u> </u>			
Brand Name	AC Adapter 1			/dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
AC Adapter 2 Power Rating Manufacturer Brand Name Huwei Technologies Co., Ltd. Model Name HW-050450E00 AC Adapter 3 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450E01 AC Adapter 4 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450E01 AC Adapter 5 AC Adapter 5 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450A01 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Brand Name Huwei Technologies Co., Ltd. Model Name HW-050450A01 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Brand Name Huwei Technologies Co., Ltd. Model Name HW-050450E00 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Humei Technologies Co., Ltd. Model Name HW-050450E00 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Humei Technologies Co., Ltd. Model Name HW-050450E00 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Humei Technologies Co., Ltd. Model Name HW-050450E00 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huwei Technologies Co., Ltd. Model Name HW-050450A00 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Brand Name Huwei Technologies Co., Ltd. Model Name HW-050450A00 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Brand Name Huwei Technologies Co., Ltd. Model Name HW-050450A00 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Brand Name Huwei Technologies Co., Ltd. Model Name HW-050450A00 Power Rating JiP:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Brand Na		Manufacturer	·			
Manufacturer HUNTKEY Huawei Technologies Co., Ltd. Model Name HW-050450U00			· · ·			
Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450U00	AC Adapter 2		I/P:100 - 240 Vac, 750mA, O/P: 5V	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
AC Adapter 3 Power Rating						
Manufacturer		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450U00	
Brand Name	AC Adapter 3	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5V	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		Manufacturer	<u> </u>			
Manufacturer		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450E01	
Brand Name	AC Adapter 4	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5V	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
AC Adapter 5 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		Manufacturer	HuaweiTechnologies Co., Ltd.			
Manufacturer		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450A01	
Brand Name	AC Adapter 5	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5V	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
AC Adapter 6 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A		Manufacturer	Huawei Technologies Co., Ltd.			
Manufacturer Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450E00		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450E00	
Brand Name	AC Adapter 6	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5V	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
AC Adapter 7 Power Rating		Manufacturer	Salcomp			
Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450E00		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450E00	
Brand Name	AC Adapter 7	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5V	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
AC Adapter 8 Power Rating		Manufacturer	HUNTKEY			
Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450A00 AC Adapter 9 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450A00 AC Adapter 10 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY SN Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450A00 AC Adapter 11 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer AC Adapter 12 Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A AC Adapter 14 Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450E00	
Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450A00 AC Adapter 9 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450A00 AC Adapter 10 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY SN Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450A00 AC Adapter 11 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer AC Adapter 12 Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A AC Adapter 14 Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating	AC Adapter 8	Power Rating	Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A			
Brand Name		Manufacturer				
AC Adapter 9 Power Rating		Brand Name	<u> </u>	Model Name	HW-050450A00	
Manufacturer Salcomp Huawei Technologies Co., Ltd. Model Name HW-050450A00 AC Adapter 10 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY SN Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450A00 AC Adapter 11 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 12 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A;	AC Adapter 9	Power Rating	<u> </u>	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
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AC Adapter 10 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY SN Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450A00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name CUDU01B-HC350-EH USB Cable 1 Brand Name FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name		Brand Name	•	Model Name	HW-050450A00	
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AC Adapter 11 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Wodel Name CUDU01B-HC350-EH TECHNOLOGY LIMITED.				1		
AC Adapter 11 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Wodel Name CUDU01B-HC350-EH TECHNOLOGY LIMITED.		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450A00	
Manufacturer Huawei Technologies Co., Ltd. Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huwei Technologies Co., Ltd. Model Name HW-050450B00 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Model Name CUDU01B-HC350-EH USB Cable 1 Brand Name FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name CUDU01B-HC350-EH	AC Adapter 11	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5V	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
AC Adapter 12 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Wodel Name CUDU01B-HC350-EH Wodel Name CUDU01B-HC350-EH		Manufacturer	Huawei Technologies Co., Ltd.			
Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Wanufacturer Huawei Technologies Co., Ltd. Brand Name FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name CUDU01B-HC350-EH		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450B00	
Manufacturer Salcomp Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Manufacturer Huawei Technologies Co., Ltd. Brand Name FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name CUDU01B-HC350-EH	AC Adapter 12	Power Rating	I/P:100 - 240 Vac, 750mA, O/P: 5V	dc, 2A; 4.5Vdc,	5A; 5Vdc, 4.5A	
AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Which is a street of the control of		Manufacturer	Salcomp			
AC Adapter 13 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. Which is a street of the control of		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450B00	
Manufacturer HUNTKEY Brand Name Huawei Technologies Co., Ltd. Model Name HW-050450B00 AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. USB Cable 1 FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name CUDU01B-HC350-EH	AC Adapter 13			l .	5A; 5Vdc, 4.5A	
AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. USB Cable 1 FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name CUDU01B-HC350-EH	•					
AC Adapter 14 Power Rating I/P:100 - 240 Vac, 750mA, O/P: 5Vdc, 2A; 4.5Vdc, 5A; 5Vdc, 4.5A Manufacturer Huawei Technologies Co., Ltd. USB Cable 1 FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name CUDU01B-HC350-EH		Brand Name	Huawei Technologies Co., Ltd.	Model Name	HW-050450B00	
Manufacturer Huawei Technologies Co., Ltd. USB Cable 1 Manufacturer Huawei Technologies Co., Ltd. FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name CUDU01B-HC350-EH	AC Adapter 14		<u> </u>			
USB Cable 1 Brand Name FOXCONN INTERCONNECT TECHNOLOGY LIMITED. Model Name CUDU01B-HC350-EH	•					
USB Cable 1 TECHNOLOGY LIMITED.				Model Name	CUDUMP HOSE CU	
	USB Cable 1		TECHNOLOGY LIMITED.		CODOUTE-HC350-EH	
Signal Line 1 meter, shielded cable, with w/o ferrite core		Signal Line	1 meter, shielded cable, with w/o	ferrite core		

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USB Cable 2	Brand Name	LUXSHARE Precision Industry Co., Ltd.	Model Name	L99UC117-CS-H
	Signal Line	1 meter, shielded cable, with w/o	ferrite core	
USB Cable 3	Brand Name	NingBo Broad Telecommunication Co.,Ltd.	Model Name	WA0009
	Signal Line	1 meter, shielded cable, with w/o	ferrite core	
USB Cable 4	Brand Name	HUIZHOU DEHONG TECHNOLOGY CO.,LTD.	Model Name	330-50465
	Signal Line	1 meter, shielded cable, with w/o	ferrite core	
Earphone 1	Brand Name	Boluo County Quancheng Electronic Co., Ltd.	Model Name	1331-3301-6001-TC-2 96
	Signal Line	1.1 meter, non-shielded cable, with w/o ferrite core		
Earphone 2	Brand Name	Goertek Inc.	Model Name	Windy-C
	Signal Line	1.1 meter, non-shielded cable, with w/o ferrite core		
Earphone 3	Brand Name	Jiangxi Lianchuang Hongsheng Electronic Co., LTD.	Model Name	MEND1632B729000
·	Signal Line	1.1 meter, non-shielded cable, with w/o ferrite core		
Earphone 4	Brand Name	Foster Electric Co.,(GuangZhou) LTD.	Model Name	618017
	Signal Line	1.1 meter, non-shielded cable, w	ith w/o ferrite co	re
Pottory 1	Brand Name	Huizhou Desay Battcry Co., Ltd.	Model Name	HB436486ECW
Battery 1	Power Rating	3.82 Vdc, 3900 mAh	Туре	Li-ion, Yes
Battery 2	Brand Name	SUNWODA Electronic Co., Ltd.	Model Name	HB436486ECW
Dallery 2	Power Rating	3.82 Vdc, 3900 mAh	Туре	Li-ion, Yes

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2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
	0	2402	21	2444
	1	2404	22	2446
	2	2406	23	2448
	3	2408	24	2450
	4	2410	25	2452
	5	2412	26	2454
	6	2414	27	2456
	7	2416	28	2458
	8 9 Hz 10	2418	29	2460
		2420	30	2462
2400-2483.5 MHz		2422	31	2464
	11	2424	32	2466
	12	2426	33	2468
	13	2428	34	2470
	14	2430	35	2472
	15	2432	36	2474
	16	2434	37	2476
	17	2436	38	2478
	18	2438	39	2480
	19	2440	-	-
	20	2442	-	-

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2.2 Test Mode

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

The following summary table is showing all test modes to demonstrate in compliance with the standard.

	Summary table of Test Cases					
Test Item	Data Rate / Modulation					
rest item	Bluetooth LE / GFSK					
Conducted	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps					
	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps					
TCs	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps					
Radiated	Mode 1: Bluetooth Tx CH00_2402 MHz_1Mbps					
	Mode 2: Bluetooth Tx CH19_2440 MHz_1Mbps					
TCs	Mode 3: Bluetooth Tx CH39_2480 MHz_1Mbps					
AC	Mode 1: CSM1000 Idle + Plusteeth Link + WLAN Link (2.4C) + USP Ceble 1(Charging					
Conducted	Mode 1: GSM1900 Idle + Bluetooth Link + WLAN Link (2.4G) + USB Cable 1(Charging					
Emission	from Adapter 1)					

Remark:

- 1. For Radiated Test Cases, The tests were performed with Adapter 3 and USB Cable 3.
- 2. For accessories, pre-scanned tests were conducted to determine the final configuration from all possible combinations.

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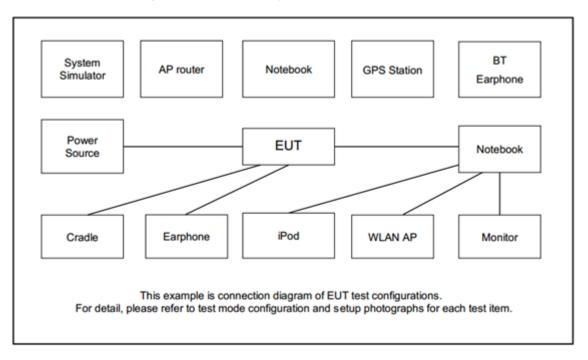
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2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	WLAN AP	D-Link	DIR-820L	KA2IR820LA1	N/A	Unshielded,1.8m
3.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	Bluetooth Earphone	Samsung	EO-MG900	N/A	N/A	N/A

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2.5 EUT Operation Test Setup

For BLE function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

 $Offset(dB) = RF \ cable \ loss(dB) + attenuator \ factor(dB).$

= 4.2 + 10 = 14.2 (dB)

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3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

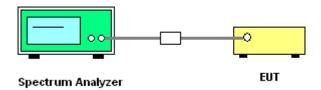
3.1.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.1.3 Test Procedures

- 1. The testing follows ANSI C63.10-2013 clause 11.8
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
- 5. Measure and record the results in the test report.

3.1.4 Test Setup



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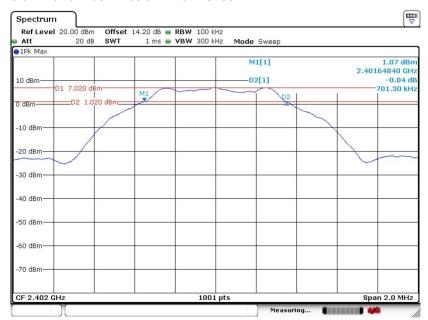
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3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.

Bluetooth v4.0 LE

6 dB Bandwidth Plot on Channel 00



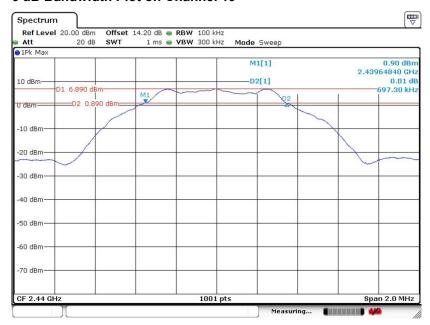
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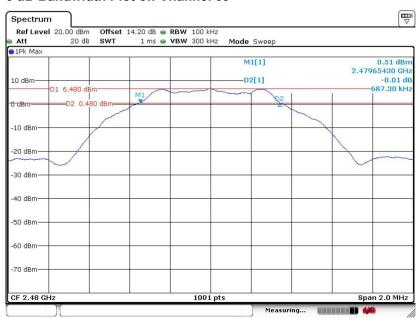
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6 dB Bandwidth Plot on Channel 19



Date: 19.MAY.2019 17:20:37

6 dB Bandwidth Plot on Channel 39



Date: 19.MAY.2019 17:24:01

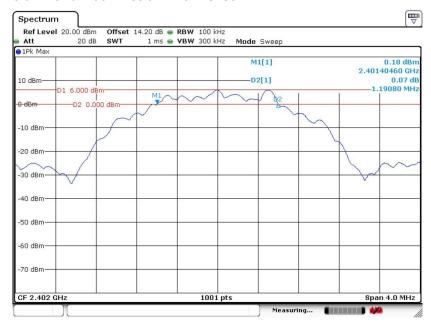
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Bluetooth v5.0 LE

6 dB Bandwidth Plot on Channel 00

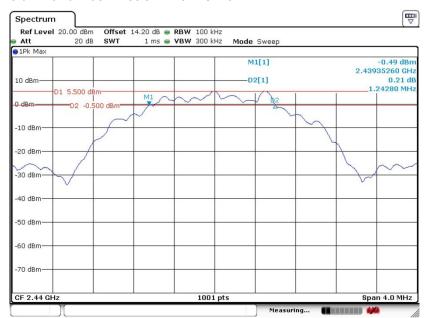


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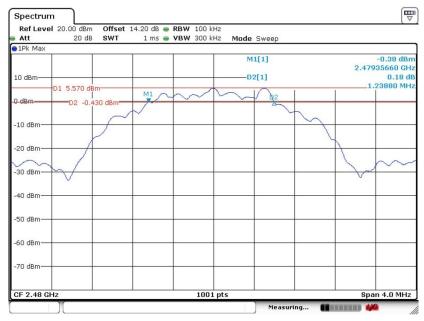
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6 dB Bandwidth Plot on Channel 19



Date: 19.MAY.2019 17:38:54

6 dB Bandwidth Plot on Channel 39



Date: 19.MAY.2019 17:43:07

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3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

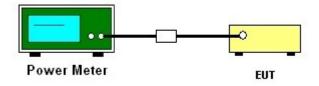
3.2.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.2.3 Test Procedures

- The testing follows the Measurement Procedure of ANSI C63.10-2013 clause 11.9.1.3 PKPM1
 Peak power meter or ANSI C63.10-2013 clause 11.9.2.3.2 Method AVGPM-G method.
- 2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Average Output Power (Reporting Only)

Please refer to Appendix A.

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3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

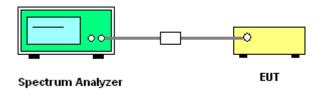
3.3.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.3.3 Test Procedures

- The testing follows Measurement Procedure of ANSI C63.10-2013 clause 11.10.2 Method PKPSD.
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
- 5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
- 6. Measure and record the results in the test report.
- 7. The Measured power density (dBm)/ 100kHz is a reference level and used as 20dBc down limit line for Conducted Band Edges and Conducted Spurious Emission.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

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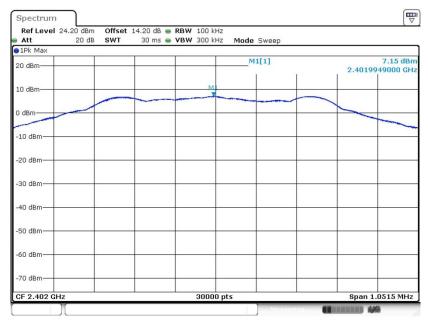
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3.3.6 Test Result of Power Spectral Density Plots (100kHz)

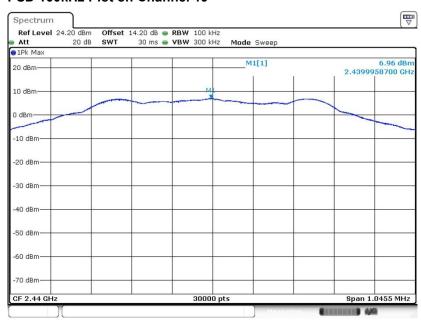
Bluetooth v4.0 LE

PSD 100kHz Plot on Channel 00



Date: 19.MAY.2019 17:18:37

PSD 100kHz Plot on Channel 19



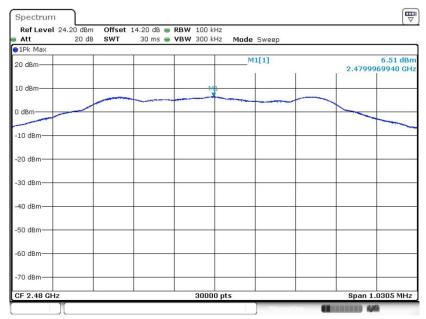
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PSD 100kHz Plot on Channel 39



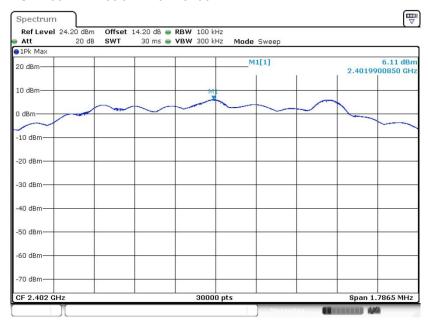
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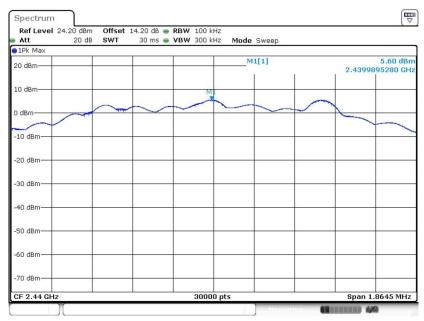
Bluetooth v5.0 LE

PSD 100kHz Plot on Channel 00



Date: 19.MAY.2019 17:35:35

PSD 100kHz Plot on Channel 19



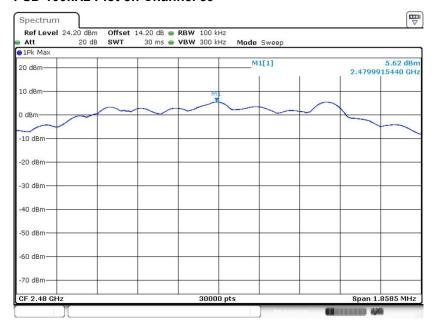
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PSD 100kHz Plot on Channel 39



Date: 19.MAY.2019 17:47:18

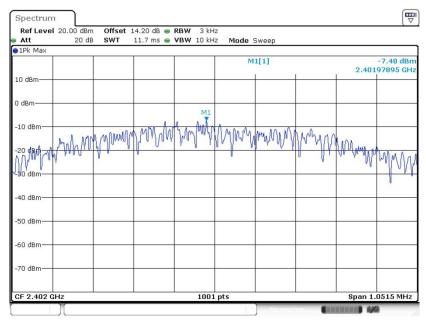
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3.3.7 Test Result of Power Spectral Density Plots (3kHz)

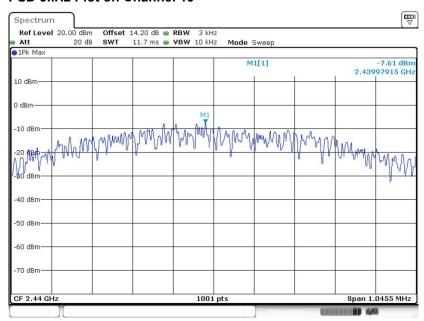
Bluetooth v4.0 LE

PSD 3kHz Plot on Channel 00



Date: 19.MAY.2019 17:17:23

PSD 3kHz Plot on Channel 19



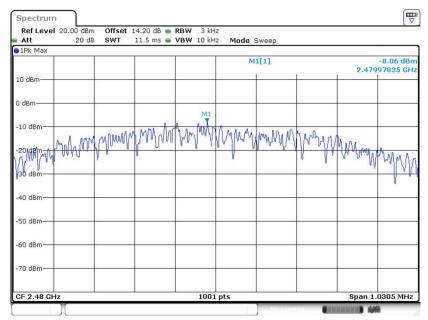
Date: 19.MAY.2019 17:20:54

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PSD 3kHz Plot on Channel 39



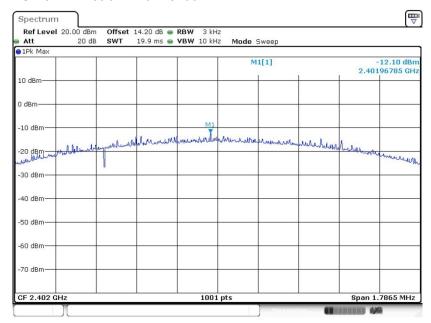
Date: 19.MAY.2019 17:24:17

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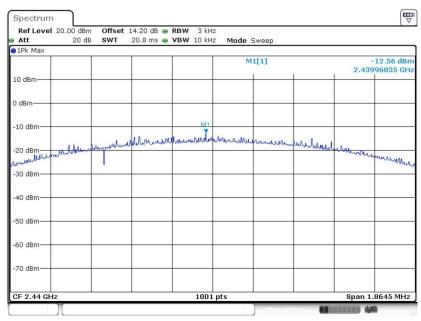
Bluetooth v5.0 LE

PSD 3kHz Plot on Channel 00



Date: 19.MAY.2019 17:33:47

PSD 3kHz Plot on Channel 19



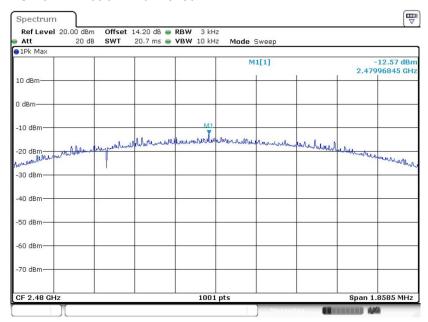
Date: 19.MAY.2019 17:39:24

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PSD 3kHz Plot on Channel 39



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3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

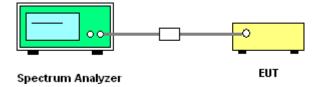
3.4.2 Measuring Instruments

The section 4.0 of List of Measuring Equipment of this test report is used for test.

3.4.3 Test Procedure

- 1. The testing follows ANSI C63.10-2013 clause 11.13
- 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 3. Set to the maximum power setting and enable the EUT transmit continuously.
- 4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
- 5. Measure and record the results in the test report.
- 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



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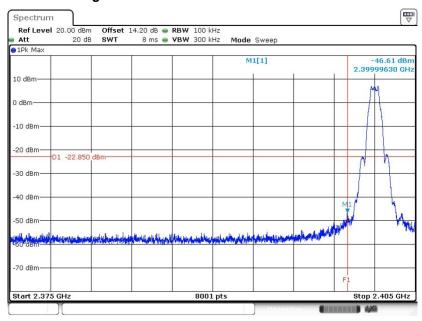
FCC ID: QISYAL-L41 Report Template No.: BU5-FR15CBT4.0/5.0 Version 2.0

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3.4.5 Test Result of Conducted Band Edges Plots

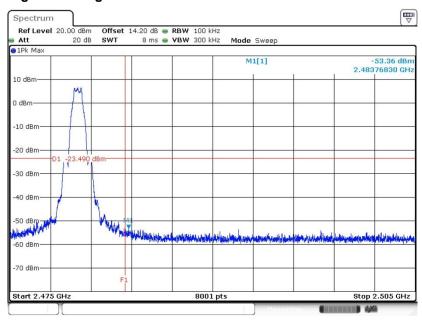
Bluetooth v4.0 LE

Low Band Edge Plot on Channel 00



Date: 19.MAY.2019 17:18:51

High Band Edge Plot on Channel 39



Date: 19.MAY.2019 17:25:32

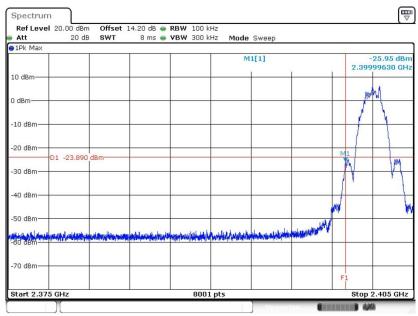
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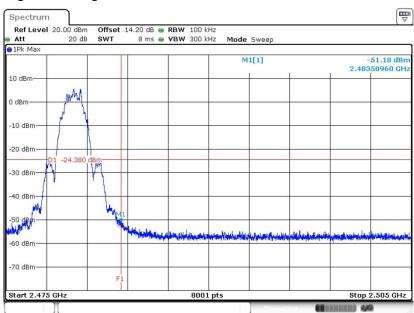
Bluetooth v5.0 LE

Low Band Edge Plot on Channel 00



Date: 19.MAY.2019 17:36:09

High Band Edge Plot on Channel 39



Date: 19.MAY.2019 17:47:39

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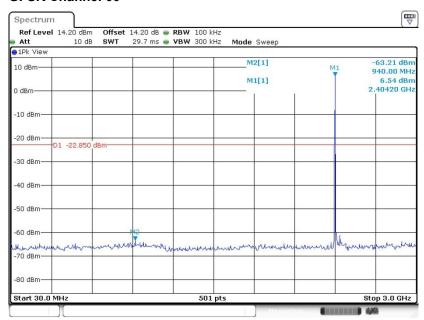
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3.4.6 Test Result of Conducted Spurious Emission Plots

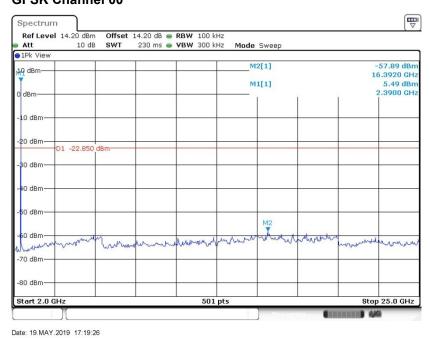
Bluetooth v4.0 LE

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 00



Date: 19.MAY.2019 17:19:14

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 00

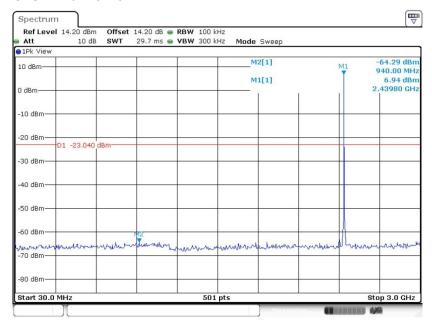


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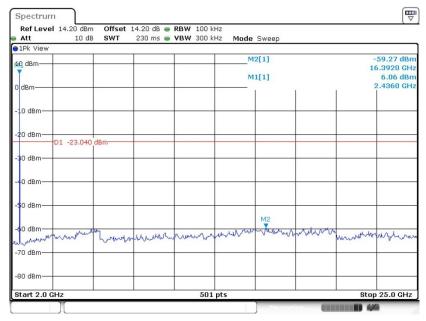
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Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 19



Date: 19.MAY.2019 17:22:31

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 19



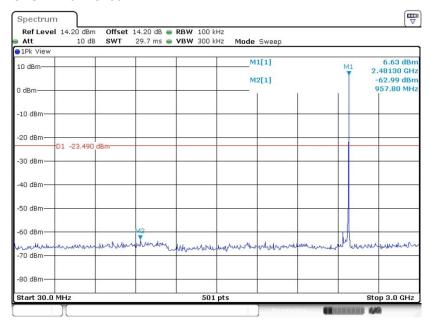
Date: 19.MAY.2019 17:22:43

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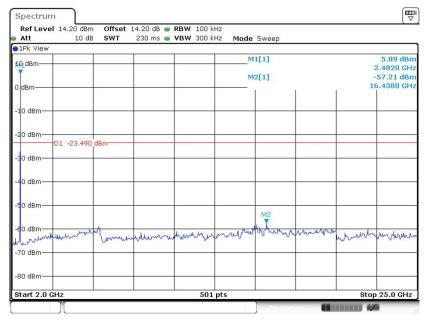
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Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 39



Date: 19.MAY.2019 17:25:49

Conducted Spurious Emission Plot on Bluetooth LE 1Mbps GFSK Channel 39



Date: 19.MAY.2019 17:26:03

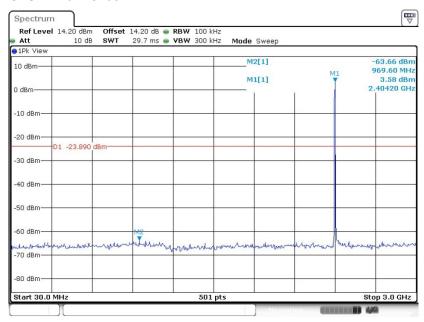
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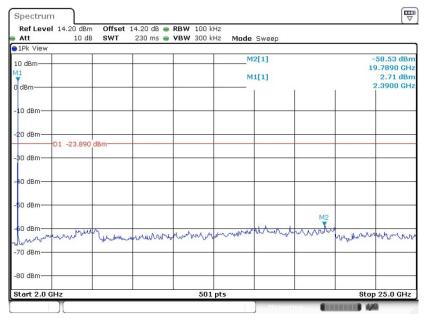
Bluetooth v5.0 LE

Conducted Spurious Emission Plot on Bluetooth LE 2Mbps GFSK Channel 00



Date: 19.MAY.2019 17:36:37

Conducted Spurious Emission Plot on Bluetooth LE 2Mbps GFSK Channel 00



Date: 19.MAY.2019 17:36:50

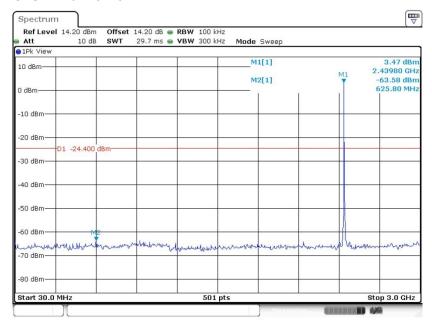
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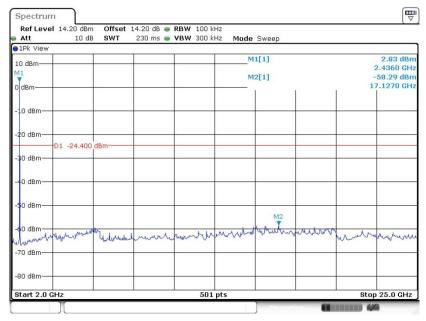
Conducted Spurious Emission Plot on Bluetooth LE 2Mbps GFSK Channel 19

Report No.: FR951002B



Date: 19.MAY.2019 17:41:28

Conducted Spurious Emission Plot on Bluetooth LE 2Mbps GFSK Channel 19



Date: 19.MAY.2019 17:41:40

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