



# FCC&ISED RF Test Report

**Product Name: Smart Phone** 

Model Number: VOG-L04

Report No.: SYBH(Z-RF)20181218028001-2005

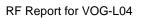
FCC ID: QISVOG-L04 IC: 6369A-VOGL04

Authorized	APPROVED	PREPARED
Authorized	(Lab Manager)	(Test Engineer)
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DATE	2019-01-28	2019-01-28

# Reliability Laboratory of Huawei Technologies Co., Ltd.

(Global Compliance and Testing Center of Huawei Technologies Co., Ltd)

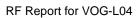
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# **\* \* Notice \* \***

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- 2. The laboratory has been recognized by the US Federal Communications Commission (FCC) to perform compliance testing subject to the Commission's Certification rules. The Designation Number is CN1173, and the Test Firm Registration Number is 294140.
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- 7. The test report is only valid for the test samples.
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- 9. If any question about this report, please contact the laboratory (PublicGCTC@huawei.com).





# **MODIFICATION RECORD**

No.	Report No	Modification Description
1	SYBH(Z-RF)2018121	First release.
	8028001-2005	

# **DECLARATION**

Туре	Description
Multiple	
Models	☐ The present report applies to several models. The practical measurements are
Applications	performed with the model.
	The present report only presents the worst test case of all modes, see relevant test
	results for detailed.



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#### 2 General Information

#### 2.1 Test standard/s

	47 CFR FCC Part 2, Subpart J	
	47 CFR FCC Part 15, Subpart C	
Applied Rules :	47 CFR FCC Part 15, Subpart E	
	ISED RSS-Gen Issue 5	
	ISED RSS-247 Issue2	
	KDB 789033 D02 General UNII Test Procedures New Rules v02	
	FCC KDB 558074 D01 DTS Meas Guidance v04	
Test Method :	FCC KDB 662911 D01 Multiple Transmitter Output v02r01	
	ANSI C63.10-2013, American National Standard for Testing Unlicensed	
	Wireless Devices	

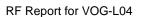
#### 2.2 Test Environment

Temperature :	TN	15 to 30	°C d	uring room temperature tests
Ambient Relative Humidity:	20 to 85 %			
Atmospheric Pressure:	Not applicable			
	VL	3.6	V	
Power supply :	VN	3.82	V	DC by Battery
	VH	4.35	V	

NOTE 1: 1) VN= nominal voltage, VL= low extreme test voltage, VH= High extreme test voltage;

TN= normal temperature, TL= low extreme test temperature, TH= High extreme test temperature.

NOTE 2: The values used in the test report may be stringent than the declared.





# 2.3 Test Laboratories

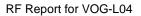
Test Location 1 :	RELIABILITY LABORATORY OF HUAWEI TECHNOLOGIES CO., LTD.
Address of Test Location 1:	No.2, New City Avenue, Songshan Lake Sci. & Tech. Industry Park, Dongguan, 523808, P.R.C

# 2.4 Applicant and Manufacturer

Company Name :	HUAWEI TECHNOLOGIES CO., LTD	
Address :	Administration Building, Headquarters of Huawei Technologies Co., Ltd.,	
Address .	Bantian, Longgang District, Shenzhen, 518129, P.R.C	

# 2.5 Application details

Date of Receipt Sample:	2019-01-02
Start of test:	2019-01-03
End of test:	2019-01-28



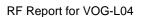


# 3 Test Summary

# 3.1 Measurement Technical Requirements

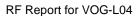
# 3.1.1 U-NII (5150-5250, 5250-5350, 5470-5725 MHz, 5725-5850)

Test Item	Band	FCC Rule No.	ISED Rule No.	Requirements	Test Result	Verdict
	5150-5250	15.403(i) 15.407(a)(1)	RSS-gen, §6.7			
Emission	5250-5350	15.403(i) 15.407(a)(2)	RSS-gen, §6.7	No limit.	Appendix	<b>D</b>
Bandwidth	5470-5725	15.403(i) 15.407(a)(2)	RSS-gen, §6.7		A1&A2	Pass
	5725-5850	15.403(i) 15.407(e)	RSS-gen, §6.7 RSS-247,§6.2.4.1	≥ 500 kHz.		
	5150-5250		RSS-gen, §6.7			
Occupied	5250-5350	KDB	RSS-gen, §6.7	No lineit	Appendix B	Pass
Bandwidth	5470-5725	789033 D02 § D	RSS-gen, §6.7	No limit.		
	5725-5850		RSS-gen, §6.7			
Duty Cycle	5150-5850	KDB 789033 D02 § B		No limit.	Appendix C	
Maximum Output Power	5150-5250 5250-5350	15.407(a)(1) 15.407(a)(4) 15.407(a)(2) 15.407(a)(4)	RSS-247, §6.2.1 RSS-gen, §6.12 RSS-247, §6.2.2 RSS-gen, §6.12	FCC: conducted < 250mW (avg during transmission) ISED: e.i.r.p . <min{200mw,10dbm+10*lg(obw)} (avg="" <min{250mw,11dbm+10*lg(ebw)}="" <min{250mw,11dbm+10*lg(obw)}<="" conducted="" during="" fcc:="" ised:="" td="" transmission)=""><td>Appendix D</td><td>Pass</td></min{200mw,10dbm+10*lg(obw)}>	Appendix D	Pass



Test Item	Band	FCC Rule No.	ISED Rule No.	Requirements	Test Result	Verdict
				(avg during		
				e.i.r.p		
				. <min{1w,17dbm+10*lg(obw)}< td=""><td></td><td></td></min{1w,17dbm+10*lg(obw)}<>		
				(avg during transmission)		
				FCC:		
				conducted		
				<min{250mw,11dbm+10*lg(ebw)}< td=""><td></td><td></td></min{250mw,11dbm+10*lg(ebw)}<>		
				(avg during transmission)		
	5.470 5705	15.407(a)(2)	RSS-247, §6.2.3	ISED:		
	5470-5725	15.407(a)(4)	RSS-gen, §6.12	conducted		
				<min{250mw,11dbm+10*lg(obw)}< td=""><td></td><td></td></min{250mw,11dbm+10*lg(obw)}<>		
				(avg during transmission)		
				e.i.r.p		
				<min{1w,17dbm+10*lg(obw)} (avg<="" td=""><td></td><td></td></min{1w,17dbm+10*lg(obw)}>		
				during transmission)		
	5705 5050	45 407(-)(0)	RSS-247, §6.2.4	conducted		
	5725-5850	15.407(a)(3)	RSS-gen, §6.12	< 1W		
				(avg during transmission)		
	5150-5250	45 407( )(4)	RSS-247, §6.2.1	FCC		
				conducted		
				<11dBm/MHz		
		15.407(a)(1)		(avg during transmission)		
		15.407(a)(4)		ISED:		
				e.i.r.p <10dBm/MHz		
maximum				(avg during transmission)		
Power		250-5350 15.407(a)(2) 15.407(a)(4)	RSS-247, §6.2.2	conducted	Appendix	
Spectral	5250 5250			<11dBm/MHz	Е	
Density	5250-5350			(avg during transmission)		
				conducted		
	5470-5725	15.407(a)(2)	RSS-247, §6.2.3	<11dBm/MHz		
	3470-3723	15.407(a)(4)		(avg during transmission)		
				conducted		
	5725-5850	15.407(a)(3) 15.407(a)(4)	RSS-247, §6.2.4	<30dBm/500KHz		
	3720-0000			(avg during transmission)		
				(avy during transmission)		
  -	5150-5250					
Frequency	5250-5350 5470-5725	5   15.407(g) F		FCC Part 15.407(g)	Appendix F	Pass
Stability				ISED RSS-Gen, 8.11		
	5725-5850					

NOTE: The transmitter has an integral PCB loop antenna that is enclosed within the housing of the EUT and meets the requirements of FCC 15.203





#### 4 Description of the Equipment under Test (EUT)

#### 4.1 General Description

VOG-L04 is a subscriber equipment in the GSM/WCDMA/LTE system. The GSM frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900. The UMTS frequency band is B1 and B2 and B4 and B5 and B6 and B8 and B19. The LTE frequency band is B1 and B2 and B3 and B4 and B5 and B6 and B7 and B8 and B9 and B12 and B17 and B18 and B19 and B20 and B26 and B28 and B34 and B38 and B39 and B40 and B41 and B66. The Mobile Phone implements such functions as RF signal receiving/transmitting, LTE/HSPA/UMTS and GSM/GPRS/EDGE protocol processing, voice, video MMS service, GPS, Bluetooth, NFC, Wi-Fi and Wirelessly Charging etc. VOG-L04 provides one USIM card interface and one HUAWEI Nano memory card interface. Externally it provides type C USB charging port, and the port could be used as the earphone port or data-transfer port.

Note: Only 5G WIAN test data included in this report.

# 4.2 EUT Identity

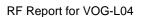
NOTE: Unless otherwise noted in the report, the functional boards installed in the units shall be selected from the below list, but not means all the functional boards listed below shall be installed in one unit.

#### 4.2.1 Board

Board				
Description Software Version Hardware Version				
Main Board	9.1.0.42(C792E10R1P4)	HL2VOGUEM		

#### 4.2.2 Sub-Assembly

Sub-Assembly				
Sub-Assembly Name	Model	Manufacturer	Description	
		Huawei	Input voltage: 100-240V ~50/60Hz 1.2A	
Adapter	HW-100400A00	Technologies	Output voltage: 5V === 2A OR 9V === 2A	
		Co., Ltd.	OR 10V === 4A	
		Huawei	Input voltage: 100-240V ~50/60Hz 1.2A	
Adapter	HW-100400U00	Technologies	Output voltage: 5V === 2A OR 9V === 2A	
		Co., Ltd.	OR 10V === 4A	
Adapter	HW-100400E00	Huawei	Input voltage: 100-240V ~50/60Hz 1.2A	



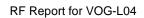


	Sub-Assembly					
Sub-Assembly Name	Model	Manufacturer	Description			
		Technologies Co., Ltd.	Output voltage: 5V === 2A OR 9V === 2A OR 10V === 4A			
Adapter	HW-100400B00	Huawei Technologies Co., Ltd.	Input voltage: 100-240V ~50/60Hz 1.2A  Output voltage: 5V ==== 2A OR 9V ==== 2A  OR 10V ==== 4A			
Battery	HB486486ECW	Huawei Technologies Co., Ltd.	Rated capacity: 4100mAh  Nominal Voltage: +3.82V  Charging Voltage: +4.4V			



# 4.3 Technical Description

Characteristics	Description			
IEEE 802.11	802.11a (20 MHz channel bandwidth) , 802.11n (20 MHz channel bandwidth),			
WLAN Mode	⊠ 802.11n (40 MHz channel bandwidth),       ⊠ 802.11ac (20 MHz channel			
Supported	bandwidth),			
	⊠ 802.11ac (40	☑ 802.11ac (40 MHz channel bandwidth), ☑ 802.11ac (80 MHz channel		
	bandwidth),			
	⊠ 802.11ac (16	0 MHz channel bandwidth)		
TX/RX Operating	All	fc = 5000 MHz + N * 5 MHz, where:		
Range		- fc = "Operating Frequency" in MHz,		
		- N = "Channel Number".		
	5150-5250	N = 36 to 48 with step of 4 for the 20 MHz channel bandwidth.		
	MHz (U-NII)	N = 38 to 46 with step of 8 for the 40 MHz channel bandwidth.		
		N = 42 for the 80 MHz channel bandwidth.		
		N = 50 for the 160 MHz channel bandwidth		
	5250-5350	N = 52 to 64 with step of 4 for the 20 MHz channel bandwidth.		
	MHz (U-NII)	N = 54 to 62 with step of 8 for the 40 MHz channel bandwidth.		
		N = 58 for the 80 MHz channel bandwidth.		
	5470-5600	N = 100 to 116 with step of 4 for the 20 MHz channel bandwidth.		
	MHz	N = 102 to 110 with step of 8 for the 40 MHz channel bandwidth.		
	(U-NII)(for	N = 106 for the 80 MHz channel bandwidth		
	ISED)			
	5470-5650	N = 100 to 128 with step of 4 for the 20 MHz channel bandwidth.		
	MHz (U-NII)	N = 102 to 126 with step of 8 for the 40 MHz channel bandwidth.		
	(for FCC)	N = 106 to 122 with step of 16 for the 80 MHz channel bandwidth.		
		N = 114 for the 160 MHz channel bandwidth.		
	5650-5725	N = 132 to 140 with step of 4 for the 20 MHz channel bandwidth.		
	MHz (U-NII)	N = 134 to 134 with step of 8 for the 40 MHz channel bandwidth.		
	5725-5850MH	N = 149 to 165 with step of 4 for the 20 MHz channel bandwidth.		
	z(U-NII)	N = 151 to 159 with step of 8 for the 40 MHz channel bandwidth.		
		N = 155 for the 80 MHz channel bandwidth.		
Modulation Type	802.11a: BPSK/	QPSK/16QAM/64QAM (OFDM).		
	802.11n: BPSK/	QPSK/16QAM/64QAM (OFDM).		
	802.11ac: BPSK	/QPSK/16QAM/64QAM/256QAM (OFDM).		
Emission		17M1G7D (for 802.11a mod),		
Designator	U-NII(5150-52	18M0G7D (for 802.11n 20 MHz mode),		
	50, 5250-5350,	36M6G7D (for 802.11n 40 MHz mode),		
	5470-5725,	18M0G7D (for 802.11ac 20 MHz mode)		
	5725-5850)	36M6G7D (for 802.11ac 40 MHz mode)		
		75M6G7D (for 802.11ac 80 MHz mode)		
		156MG7D (for 802.11ac 160 MHz mode)		





Characteristics	Description			
TX Power Control	☐ Supported, ☒ Not Supported			
(TPC)				
Equipment Type		equipment, Plug-in radio device, Combined equipment		
Antenna	Description	Isotropic Antenna		
	Туре			
		☐ External		
		☐ Dedicated		
	Ports			
	Smart System	⊠SISO (for 802.11a/n/ac),		
		⊠CDD (for 802.11a), 2 Tx & 2 Rx,		
		⊠MIMO (for 802.11a/ac), 2 Tx & 2 Rx,		
		☐ Diversity (for 802.11a/n/ac) : Tx & Rx		
	Gain	Ant 1: -2.9 dBi (per antenna port, max.)		
		Ant 2: -1.2 dBi (per antenna port, max.)		
	Remark	When the EUT is put into service, the practical maximum antenna		
		gain should NOT exceed the value as described above.		
Power Supply	Туре	☐ External DC mains,		
		⊠ Battery,		
		☐ AC/DC Adapter,		
		☐ Powered over Ethernet (PoE).		
		☐ Other		



# 5 General Test Conditions / Configurations

#### 5.1 Test Modes

NOTE: Worst cases for each IEEE 802.11 mode are selected to perform tests.

Test Mode	Test Modes Description
11A	IEEE 802.11a with data rate of 6 Mbps using SISO mode.
11A CDD	IEEE 802.11a with data rate of 6 Mbps using CDD mode.
11N20	IEEE 802.11n with data date of MCS0 and bandwidth of 20 MHz using SISO mode.
11N20m	IEEE 802.11n with data date of MCS8 and bandwidth of 20 MHz using MIMO mode.
11N40	IEEE 802.11n with data date of MCS0 and bandwidth of 40 MHz using SISO mode.
11N40m	IEEE 802.11n with data date of MCS8 and bandwidth of 40 MHz using MIMO mode.
11AC20	IEEE 802.11ac with data date of MCS0 and bandwidth of 20 MHz using SISO mode.
11AC20m	IEEE 802.11ac with data date of MCS8 and bandwidth of 20 MHz using SISO mode.
11AC40	IEEE 802.11ac with data date of MCS0 and bandwidth of 40 MHz using SISO mode.
11AC40m	IEEE 802.11ac with data date of MCS8 and bandwidth of 40 MHz using MIMO mode.
11AC80	IEEE 802.11ac with data date of MCS0 and bandwidth of 80 MHz using SISO mode.
11AC80m	IEEE 802.11ac with data date of MCS8 and bandwidth of 80 MHz using MIMO mode.
11AC160	IEEE 802.11ac with data date of MCS0 and bandwidth of 160 MHz using SISO mode.
11AC160m	IEEE 802.11ac with data date of MCS8 and bandwidth of 160 MHz using MIMO mode.

# 5.2 EUT Configurations

# **5.2.1 General Configurations**

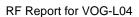
Configuration	Description	
Test Antenna Ports	Until otherwise specified,	
	All TX tests are performed at all TX antenna ports of the EUT, and	
	All RX tests are performed at all RX antenna ports of the EUT.	
Multiple RF Sources	Other than the tested RF source of the EUT, other RF source(s) are disabled or shutdown	
	during measurements.	

# 5.2.2 Customized Configurations

Test Mode	Antenna Port	Power Conf.,	Duty cycle [%]
		CH36/64/100:9	99.19
	A m t d	CH140:9.5	
11A	Ant 1	CH165: 13.5	
		Others: 14.5	
		CH36/64/100:9	99.19
	Ant 2	CH140:9.5	
		CH165: 13.5	



		Others: 14	
		ANT1+ANT2 Total	99.19
	Ant 1	CH36/64/100:12	
11A CDD		CH140:12.5	00.40
	Ant 2	CH165: 16.5	99.19
	7.11.2	Others: 17.3	
		CH36/64/100:9	99.12
		CH140:9.5	
	Ant 1	CH165: 13.5	
441100		Others: 14.5	
11N20		CH36/64/100:9	99.12
	A 4.0	CH140:9.5	
	Ant 2	CH165: 13.5	
		Others: 14	
		ANT1+ANT2 Total	98.38
	Ant 1	CH36/64/100:12	
11N20M		CH140:12.5	98.38
	Ant 2	CH165: 16.5	90.30
		Others: 17.3	
		CH38/102/134:8	98.23
		CH62:7.5	
	Ant 1	CH159:13	
44140		Others: 14	
11N40		CH38/102/134:8	98.31
		CH62:7.5	
	Ant 2	CH159:13	
		Others: 13.5	
		ANT1+ANT2 Total	96.96
	Ant 1	CH38/102/134:11	
11N40M		CH62:10.5	96.96
	Ant 2	CH159:16	30.30
		Others: 16.8	
		CH36/64/100:9	99.13
	Ant 1	CH140:9.5	
	Anti	CH165: 13.5	
44 4 000		Others: 14.5	
11AC20		CH36/64/100:9	99.13
	Ant O	CH140:9.5	
	Ant 2	CH165: 13.5	
		Others: 14	
	Ant 1	ANT1+ANT2 Total	99.13
11AC20M	Anti	CH36/64/100:12	
	Ant 2	CH140:12.5	99.13





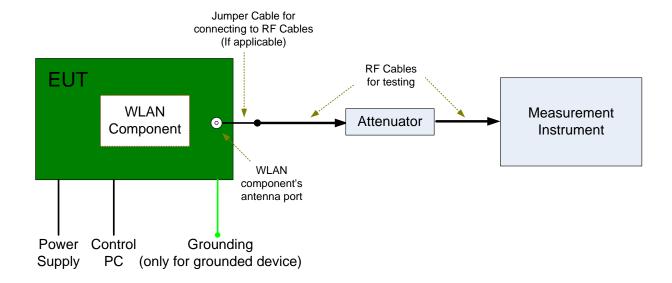
		CH165: 16.5	
		Others: 17.3	
		CH38/102/134:8	98.24
	Ant 1	CH62:7.5	
	Anti	CH159:13	
11AC40		Others: 14	
11AC40		CH38/102/134:8	98.24
	A = 4 O	CH62:7.5	
	Ant 2	CH159:13	
		Others: 13.5	
		ANT1+ANT2 Total	98.4
	Ant 1	CH38/102/134:11	
11AC40M		CH62:10.5	
	Ant 2	CH159:16	98.4
	7 =	Others: 16.8	
	Ant 1	CH155: 10	96.9
44 4 600	Ant 1	Others: 5	
11AC80	A = 4 O	CH155: 10	96.9
	Ant 2	Others: 5	
	Ant 1	ANT1+ANT2 Total	96.9
11AC80M		CH155: 13	06.0
	Ant 2	Others: 8	96.9
11AC160	Ant 1	5	94.36
HACIOU	Ant 2	5	94.36
44 0 0 4 0 0 0 0	Ant 1	ANT1+ANT2 Total	94.36
11AC160M	Ant 2	8	94.36



#### 5.3 Test Setups

#### 5.3.1 Test Setup 1

The WLAN component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.

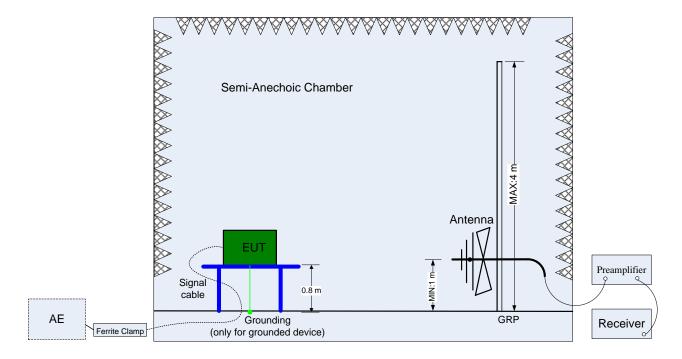


#### 5.3.2 Test Setup 2

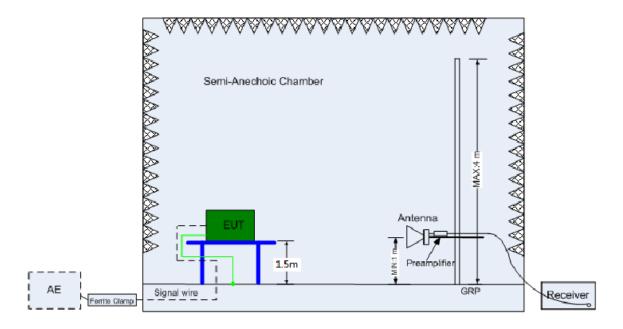
The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.4. The test distance is 3 m (for 30 MHz to 26.5 GHz) or 1 m (for 26.5 GHz to 40 GHz). The setup is according to ANSI C63.10, ANSI C63.4 and CAN/CSA-CEI/IEC CISPR 22.

The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).





(Below 1 GHz)



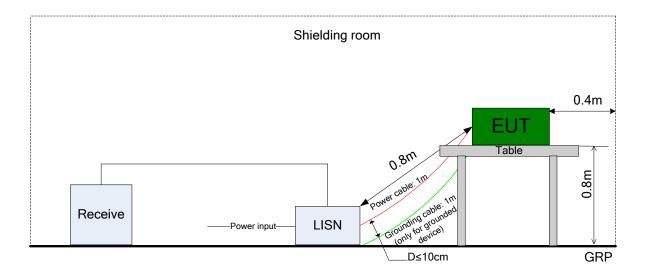
(Above 1 GHz)



#### 5.3.3 Test Setup 3

The mains cable of the EUT (maybe per AC/DC Adapter) must be connected to LISN. The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8m from the LISN.

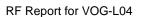
Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.





# 5.4 Test Conditions

Test Case	Test Conditions	
	Configuration	Description
Emission	Meas. Method	FCC KDB 789033 D02 §C).
Bandwidth	Test Env.	TN/VN
(EBW)	Test Setup	Test Setup 1
	EUT Conf.	All EUT conf. with Tx modes.
Occupied	Meas. Method	FCC KDB 789033 D02 §D).
Bandwidth	Test Env.	TN/VN
(OBW)	Test Setup	Test Setup 1
	EUT Conf.	All EUT conf. with Tx modes.
Maximum	Meas. Method	FCC KDB 789033 D02 §E)2)b) Method SA-1 and d) Method SA-2.
Conducted	Test Env.	TN/VN
Output Power	Test Setup	Test Setup 1
EUT Conf.		All EUT conf. with Tx modes.
Maximum	Meas. Method	FCC KDB 789033 D02 §F).
Power Spectral	Test Env.	TN/VN
Density	Test Setup	Test Setup 1
	EUT Conf.	All EUT conf. with Tx modes.
	Meas. Method	15.407(g)
	Meas. Method	Frequence Stability
Frequency	Test Env.	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage;
Stability Test Setup		(2) VL, VN and VH of Rated Voltage at Ambient Climate.
		Test Setup 1
	EUT Conf.	Ch.36,Ch.165

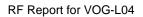




#### 6 Main Test Instruments

This table gives a complete overview of the RF measurement equipment. Devices used during the test described are marked  $\boxtimes$ 

Main	Main Test Equipment(BT/WIFI test system)					
Marked	Equipment Name	Manufacturer	Model	Serial Number	Cal Date	Cal-Due
	JS1120-3 BT/WIFI test system	JS Tonscend	JS0806-2	188060102	2018/05/30	2019/05/30
	Power Detecting & Samplig Unit	R&S	OSP-B157	101429	2018/07/23	2019/07/23
	Power Sensor	R&S	NRP2	103085/10621 1	2018/05/17	2019/05/17
$\boxtimes$	DC Power Supply	KEITHLEY	2303	1342889	2018/10/24	2019/10/24
	DC Power Supply	KEITHLEY	2303	000500E	2018/05/21	2019/05/21
	DC Power Supply	KEITHLEY	2303	000381E	2018/05/21	2019/05/21
	DC Power Supply	KEITHLEY	2303	000510E	2018/05/21	2019/05/21
$\boxtimes$	Temperature Chamber	WEISS	WKL64	562460029400 10	2018/12/13	2019/12/13
	Spectrum Analyzer	Agilent	N9030A	MY51380032	2018/07/23	2019/07/23
	Spectrum Analyzer	Agilent	N9030A	MY49431698	2018/07/23	2019/07/23
$\boxtimes$	Spectrum Analyzer	Keysight	N9040B	MY57212529	2018/06/28	2019/06/28
	Signal Analyzer	R&S	FSQ31	200021	2018/07/23	2019/07/23
	Signal Analyzer	R&S	FSU26	201069	2018/11/2	2019/11/2
	Universal Radio Communication Tester	R&S	CMW500	164699	2018/03/15	2019/03/15
	Universal Radio Communication Tester	R&S	CMW500	159302	2018/07/23	2019/07/23
	Wireless Communication Test set	Agilent	N4010A	MY49081592	2018/07/23	2019/07/23
	Signal generator	Agilent	E8257D	MY51500314	2018/04/27	2019/04/27
$\boxtimes$	Signal generator	Agilent	E8257D	MY49281095	2018/07/23	2019/07/23
	Vector Signal Generator	R&S	SMW200A	103447	2018/05/31	2019/05/31
	Vector Signal Generator	R&S	SMU200A	104162	2018/07/23	2019/07/23

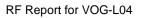




# 7 Measurement Uncertainty

For a 95% confidence level (k = 2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item	Extended Uncertainty	
Transmit Output Power Data	Power [dBm]	U = 0.58 dB
RF Power Density, Conducted	RF Power Density, Conducted Power [dBm]	
Bandwidth	Magnitude [kHz]	20MHz: U=41.78kHz
		40MHz: U=82.12kHz
		80MHz: U=163.5kHz
Frequency Stability	Frequency Accuracy [Hz]	U=82.24Hz
Duty Cycle	Duty Cycle [%]	U=±2.06 %





# 8 Appendixes

Appendix No.	Description
SYBH(Z-RF)20181218028001-2005-A	Appendix_for_5G_WLAN

END