

# **RF TEST REPORT**

Report No.:	SET2019-04364		
Product Name:	LTE/WCDMA/GSM (GPRS) Multi-Mode Digital Mobile Phone		
FCC ID:	SRQ-BLADEV10L		
Model No. :	ZTE Blade V10		
Applicant:	ZTE Corporation.		
Address:	ZTE Plaza, Keji Road South, Shenzhen, China		
Dates of Testing:	04/10/2019 —04/23/2019		
Issued by:	CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.		
Lab Location:	Building 28/29, East of ShiguXili Industrial Zone, Nanshan DistrictShenzhen, Guangdong518055, China.		
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# Test Report

Product Name:	LTE/WCDMA/GSM(GPRS)M Phone	ulti-Mode Digital Mobile
Brand Name:	ZTE	
Trade Name:	ZTE	
Applicant:	ZTE Corporation.	
Applicant Address::	ZTE Plaza,Keji Road South,	Shenzhen, China
Manufacturer:	ZTE Corporation.	
Manufacturer Address :	ZTE Plaza,Keji Road South,	Shenzhen, China
Test Standards:		ican National Standard for Devices
Test Result:	PASS	
Tested by:	Shallwe Yong	2019.04.23
	Shallwe Yang, Test Engineer	
Reviewed by:	Chris You	2019.04.23
	Chris You, Senior Engineer	
Approved by:	Shuang wan Zhang	2019.04.23
	ShuangwenZhang, Manager	



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	Change History			
Issue	Date	Reason for change		
1.0	2019.04.24	First edition		



## 1. General Information

## **1.1. EUT Description**

EUT Type	LTE/WCDMA/GSM(GPRS)Multi-Mode Digital Mobile Phone		
Frequency Range	Bluetooth LE 4.2	2402MHz~2480MHz	
Channel Number	Bluetooth LE 4.2	40	
Bit Rate of Transmitter	Bluetooth LE 4.2	1Mbps	
Modulation Type	Bluetooth LE 4.2	GFSK	
Antenna Type	Internal		
Antenna Gain	-2.4dBi		

Note 1: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 2: The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.



## 1.2. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C (Bluetooth, 2.4GHz ISM band radiators) for the EUT FCC Certification:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart C 2017	Radio Frequency Devices
2	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section in CFR 47	Description	Result	
1	15.203	Antenna Requirement	PASS	
2	15.247(b)	Peak Output Power	PASS	
3	15.247(a)	Bandwidth	PASS	
4	15.247(d)	Conducted Band Edges and Spurious	PASS	
4	13.247(u)	Emission	1799	
5	15.247(e)	Power spectral density (PSD)	PASS	
6	15.207	Conducted Emission	PASS	
7	15 200 15 247(1)	Radiated Band Edges and Spurious	PASS	
/	15.209 15.247(d)	Emission	TASS	

The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10-2013.

These RF tests were performed according to the method of measurements prescribed in KDB 558074D01 v05r01.

#### 40 channels are provided for Bluetooth LE 4.2

Channel	Frequency(MHz)	Channel	Frequency(MHz)
0	2402	20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466



13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

	Test Items	Modulation	Channel
	Peak Conducted Output Power		
	Power Spectral Density		
Bluetooth LE 4.0	6dB Bandwidth	GFSK	0/20/39
	Conducted and Spurious Emission		
	Radiated and Spurious Emission		
	Band Edge	GFSK	0/39

# **1.3.** Table for Supporting Units

No.	Equipment	Brand Name	Model Name	Manufacturer	Serial No.	Note
1	Notebook	DELL	PP11L	DELL	H5914A03	FCC DOC



## 1.4. Facilities and Accreditations

## 1.4.1. Facilities

## CNAS-Lab Code: L1659

CCIC-SET is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L1659.

## FCC-Registration No.: CN5031

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN5031, valid time is until December 31, 2019.

#### **ISED Registration: 11185A-1**

## CAB identifier: CN0064

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Dec. 31, 2019.

## NVLAP Lab Code: 201008-0

CCIC-SET is a third party testing organization accredited by NVLAP according to ISO/IEC 17025. The accreditation certificate number is 201008-0.

## **1.4.2.** Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15°C - 35°C
Relative Humidity (%):	30% -60%
Atmospheric Pressure (kPa):	86KPa-106KPa



## 2.1. Antenna requirement

## 2.1.1. Applicable Standard

According to FCC 15.203, 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.

And according to FCC 47 CFR Section 15.247(c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

## 2.1.2. Antenna Information

#### Antenna Category: Internal antenna

An Internal antennawas soldered to the antenna port of EUT via an adaptor cable, can't be removed.

#### **Antenna General Information:**

No.	EUT	Ant. Type	Gain(dBi)
1	LTE/WCDMA/GSM(GPRS) Multi-Mode Digital Mobile Phone	Internal	-2.4

#### 2.1.3. Result: comply

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.



## 2.2. Peak Output Power

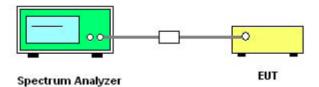
## 2.2.1. Limit of Peak Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is30dBm. 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.

## 2.2.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

## 2.2.3. Test Setup



## 2.2.4. Test Procedures

- 1. The testing follows the Measurement Procedure of FCC KDB 558074D01 v05r01.
- 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. Use the following spectrum analyzer settings: Span≥3RBW;
  RBW≥DTS bandwidth; VBW≥3RBW; Sweep = auto; Detector function = peak; Trace = max hold.
- 5. Set to the maximum power setting and enable the EUT transmit continuously.
- 6. Measure the conducted output power and record the results in the test report.

## 2.2.5. Test Result

Please refer to Appendix A for detail

## 2.3. 6dBBandwidth

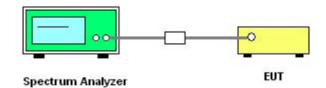
## 2.3.1. Limit of 6dB Bandwidth

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

## 2.3.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

## 2.3.3. Test Setup



#### **2.3.4.** Test Procedures

1. The testing follows FCC KDB 558074D01 v05r01.

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 6dB

bandwidth must be greater than 500 kHz.

5. Measure and record the results in the test report.

## 2.3.5. Test Results of 6dBBandwidth

Please refer to Appendix A for detail



## 2.4. Conducted Band Edges and Spurious Emissions

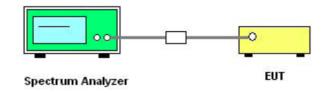
## 2.4.1. Limit of Conducted Band Edges and Spurious Emissions

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

## 2.4.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

## 2.4.3. Test Setup



#### 2.4.4. Test Procedure

- 1. The testing follows FCC KDB 558074D01 v05r01.
- 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 100kHz 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 per 15.247(d).
- 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.



# 2.4.5. Test Results of Conducted Band Edges

Please refer to Appendix A for detail



## 2.5. Power spectral density (PSD)

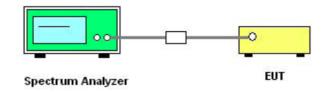
## 2.5.1. Limit of Power Spectral Density

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

## 2.5.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

## 2.5.3. Test Setup



## 2.5.4. Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB 558074D01 v05r01 .

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 1.5times 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.



# 2.5.5. Test Results of Power spectral density

Please refer to Appendix A for detail



## 2.6. Radiated Band Edge and Spurious Emission

## 2.6.1. Limit of Radiated Band Edges and Spurious Emission

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Note: Wireless charger configuration was evaluated.

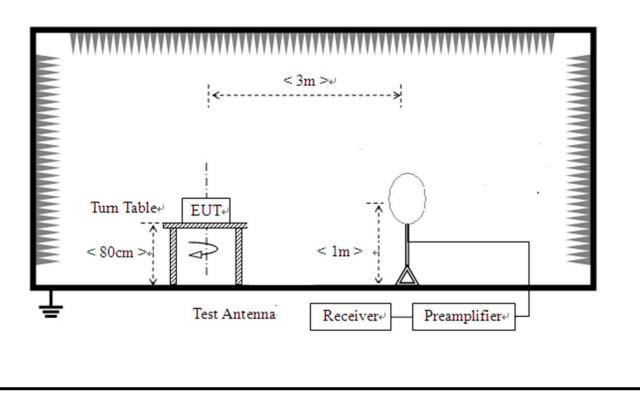
Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

#### 2.6.2. Measuring Instruments

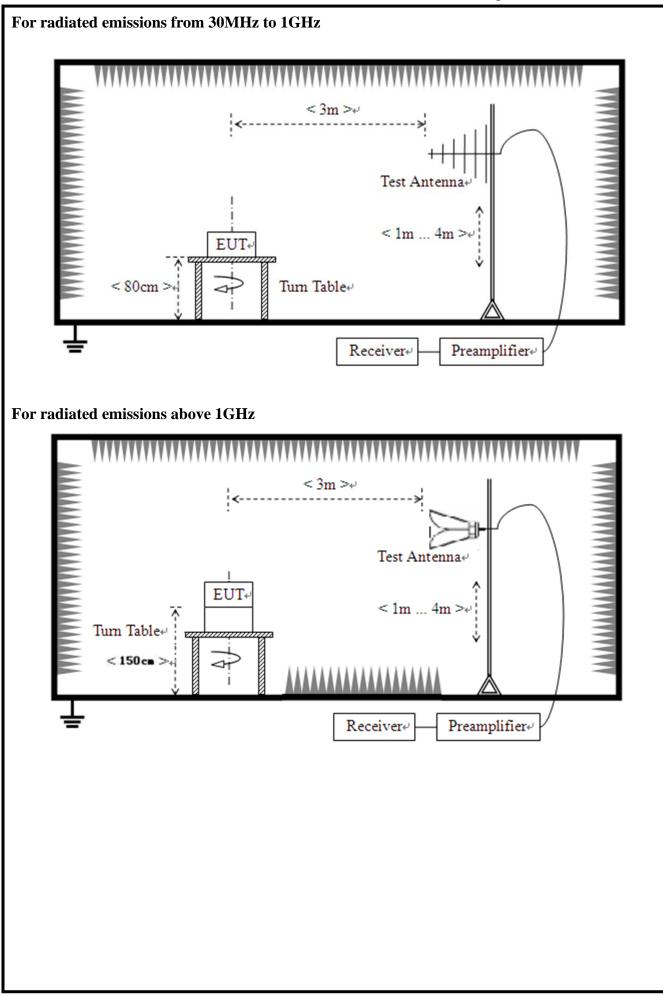
The measuring equipment is listed in the section 3 of this test report.

#### 2.6.3. Test Setup

#### For radiated emissions from 9 KHz to 30 MHz







#### 2.6.4. Test Procedures

- The EUT was placed on a turntable 0.8m below 1GHz and 1.5m above 1GHz above ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- 3. Height of receiving antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 6. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported.Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
- 3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is  $\geq 1/T$  (Duty cycle < 98%) or 10Hz(Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
- 4. All modes of operation were investigated and the worst-case emissions are reported.

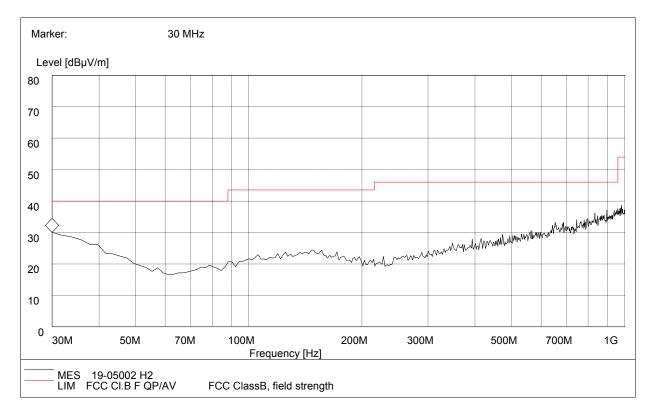


## 2.6.5. Test Results of Radiated Band Edge and Spurious Emission

#### For9KHz to 30MHz

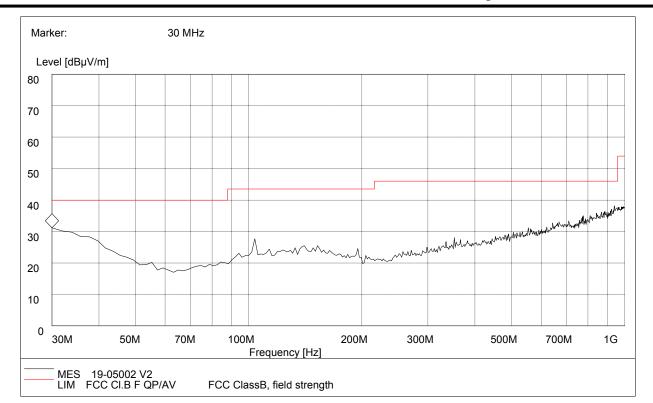
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

#### For 30MHz to 1000 MHz



#### Plot A: 30MHz to 1GHz, Antenna Horizontal

Frequency (MHz)	QuasiPeak (dBµV/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dBµV/m)	Antenna	Verdict
30	27.45	120.000	100.0	40	Horizontal	Pass



## Plot B: 30MHz to 1GHz, Antenna Vertical

Frequency (MHz)	QuasiPeak (dB µ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB µ V/m)	Antenna	Verdict
30	31.15	120.000	100.0	40	Vertical	Pass

## For 1GHz to 25GHz

A	NTENN	A POL	ARIT	Y & TEST	<b>DISTA</b>	NCE: HO	ORIZON	TALAT	3M (0	OCH_24	02MH	[z)
No.	Fre. (MHz)	Emss Lev (dBuV	el	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390	48.90	PK	74.00	-25.1	1.5	104	47.6	5.2	28.60	32.5	1.3
2	2390	37.84	AV	54.00	-16.16	1.5	104	36.54	5.2	28.60	32.5	1.3
3	4804	55.11	РК	74.00	-18.89	1	110	48.71	7.4	30.40	31.4	6.4
4	4804	43.09	AV	54.00	-10.91	1	110	36.69	7.4	30.40	31.4	6.4
5	7206	56.12	РК	74.00	-17.88	1	110	46.82	9.9	31.50	32.1	9.3
6	7206	46.23	AV	54.00	-7.77	1	110	36.93	9.9	31.50	32.1	9.3
	ANTEN	NA PO	LAR	ITY & TE	ST DIST	ANCE: V	VERTIC	ALAT3	м (ос	H_2402	2MHz	)
No.	Frequency (MHz)	Emss Lev (dBuV	el	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390	50.76	РК	74.00	-23.24	1.6	270	49.46	5.2	28.60	32.5	1.3
2	2390	37.95	AV	54.00	-16.05	1.6	270	36.65	5.2	28.60	32.5	1.3
3	4804	47.86	РК	74.00	-26.14	1.5	210	41.46	7.4	30.40	31.4	6.4
4	4804	38.08	AV	54.00	-15.92	1.5	210	31.68	7.4	30.40	31.4	6.4
5	7206	52.04	РК	74.00	-21.96	1.5	240	42.74	9.9	31.50	32.1	9.3
6	7206	45.26	AV	54.00	-8.74	1.5	240	35.96	9.9	31.50	32.1	9.3

A	NTENN	A POL	ARIT	Y & TEST	DISTAN	NCE: HC	RIZON	FAL AT 3	<b>3 M (1</b>	9CH_2	440MI	Hz)
No.	Fre. (MHz)	Emss Lev (dBuV	el	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4880	55.84	РК	74.00	-18.16	1.5	120	49.44	6.7	31.20	31.5	6.4
2	4880	43.20	AV	54.00	-10.8	1.5	120	36.8	6.7	31.20	31.5	6.4
3	7320	56.38	РК	74.00	-17.62	1.5	120	49.98	6.7	31.20	31.5	6.4
4	7320	39.65	AV	54.00	-14.35	1.5	120	33.25	6.7	31.20	31.5	6.4
	ANTEN	NA PO	LARI	TY & TES	ST DISTA	ANCE: V	<b>ERTICA</b>	ALAT3N	И (190	CH_244	0MHz	;)
No.	Frequency (MHz)	Emss Lev (dBuV	el	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	4880	49.81	РК	74.00	-24.19	1.5	20	43.41	6.7	31.20	31.5	6.4
2	4880	38.45	AV	54.00	-15.55	1.5	20	32.05	6.7	31.20	31.5	6.4
3	7320	50.36	РК	74.00	-23.64	1.5	20	43.96	6.7	31.20	31.5	6.4
				54.00	-15.05	1.5	20	32.55	6.7	31.20	31.5	6.4

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AN	TENNA I	POLAF	RITY	& TEST	DISTAN	CE: HO	RIZONI	TALAT 3	M (39	OCH_24	80MH	Iz)
No.	Frequency (MHz)	Emss Lev (dBuV	rel	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.5	50.27	РК	74.00	-23.73	1	170	46.87	5.7	29.50	31.8	3.4
2	2483.5	38.77	AV	54.00	-15.23	1	170	35.37	5.7	29.50	31.8	3.4
3	4960	47.61	PK	74.00	-26.39	1.6	320	42.06	7	30.05	31.5	5.55
4	4960	38.07	AV	54.00	-15.93	1.6	320	32.52	7	30.05	31.5	5.55
5	7440	49.36	РК	74.00	-24.64	1.5	120	34.16	16	31.20	32	15.2
6	7440	40.32	AV	54.00	-13.68	1.5	120	25.12	16	31.20	32	15.2
Α	NTENNA	<b>POL</b> A	ARITY	Y & TES	Г DISTA	NCE: V	ERTICA	LAT 3 M	I (39C	H_248	)MHz	)
No.	Frequency (MHz)	Emss Lev (dBuV	rel	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2483.5	50.77	РК	74.00	-23.23	1	230	47.37	5.7	29.50	31.8	3.4
2	2483.5	39.04	AV	54.00	-14.96	1	230	35.64	5.7	29.50	31.8	3.4
3	4960	48.32	PK	74.00	-25.68	1.6	240	42.77	7	30.05	31.5	5.55
4	4960	38.40	AV	54.00	-15.6	1.6	240	32.85	7	30.05	31.5	5.55
5	7440	50.24	PK	74.00	-23.76	1.5	160	35.04	16	31.20	32	15.2
6	7440	39.87	AV	54.00	-14.13	1.5	160	24.67	16	31.20	32	15.2

#### **REMARKS:**

- 1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
- 2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)

- Pre-Amplifier Factor(dB)

3. The other emission levels were very low against the limit.

4. Margin value = Emission Level - Limit value

5. " \* ": Fundamental frequency.



## 2.7. Conducted Emission

## 2.7.1. Limit of Conducted Emission

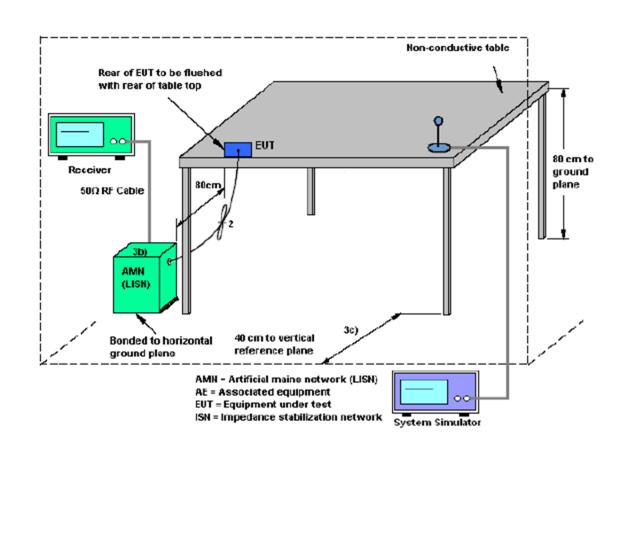
For equipment that is designed to be connected to the public utility (AC) power line, the radiofrequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Eroquonou rongo (MHz)	Conducted Limit (dBµV)				
Frequency range (MHz)	Quai-peak	Average			
0.15 - 0.50	66 to 56	56 to 46			
0.50 - 5	56	46			
5 - 30	60	50			

## 2.7.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

## 2.7.3. Test Setup

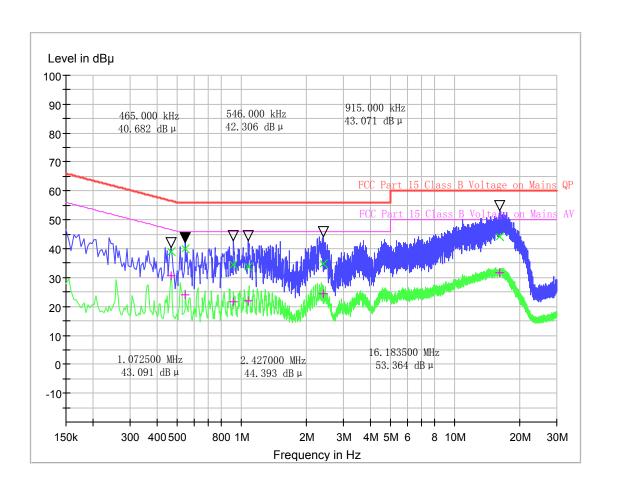


#### 2.7.4. Test Procedures

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

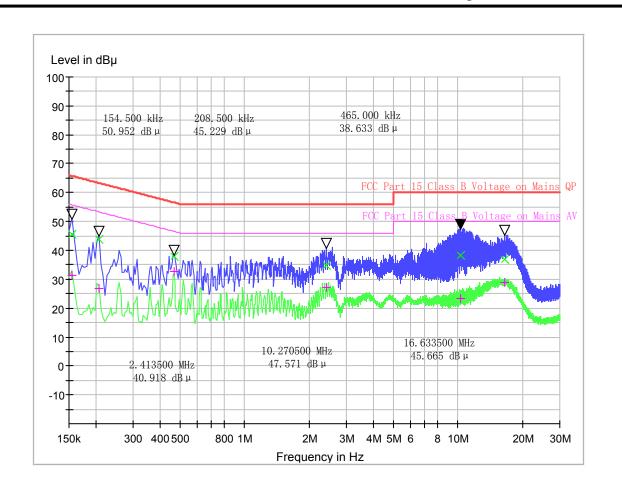
## 2.7.5. Test Result

The EUT configuration of the emission tests is Bluetooth Link + USB Cable (Charging from Adapter)



(Plot A: L Phase)

	Conducted Disturbance at Mains Terminals L Test Data									
	AV									
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)					
0.465000	56.6	39.00	0.465000	46.6	30.60					
0.546000	56.0	40.16	0.546000	46.0	24.01					
0.915000	56.0	34.47	0.915000	46.0	21.62					
1.072500	56.0	33.60	1.072500	46.0	21.90					
2.427000	56.0	34.76	2.427000	46.0	24.25					
16.183500	60.0	44.26	16.183500	50.0	31.57					



(Plot B: N Phase)

	<b>Conducted Disturbance at Mains Terminals</b>										
	N Test Data										
QP AV											
Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)	Frequency (MHz)	Limits (dBµV)	Measurement Value (dBµV)						
0.154500	65.8	45.64	0.154500	55.8	31.27						
0.208500	63.3	43.87	0.208500	53.3	26.73						
0.465000	56.6	38.09	0.465000	46.6	32.83						
2.413500	56.0	34.75	2.413500	46.0	27.24						
10.270500	60.0	38.10	10.270500	50.0	23.50						
16.633500	60.0	36.82	16.633500	50.0	28.95						

**Test Result: PASS** 



# 3. List of measuring equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal
1	Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	11/11/2018
2	EMI TEST RECEIVER	Rohde&Schwarz	ESI 26	100009	11/11/2018
3	EMI TEST Software	Audix	E3	N/A	N/A
4	TURNTABLE	ETS	2088	2149	N/A
5	ANTENNA MAST	ETS	2075	2346	N/A
6	EMI TEST Software	Rohde&Schwarz	ESK1	N/A	N/A
7	HORNANTENNA	ShwarzBeck	9120D	1011	11/11/2018
8	Amplifer	Sonoma	310N	E009-13	11/11/2018
9	JS amplifer	Rohde&Schwarz	JS4-00101800-28 -5A	F201504	11/11/2018
10	High pass filter	Compliance Direction systems	BSU-6	34202	11/11/2018
11	HORNANTENNA	ShwarzBeck	9120D	1012	11/11/2018
12	Amplifer	Compliance Direction systems	PAP1-4060	120	11/11/2018
13	Loop Antenna	Rohde&Schwarz	HFH2-Z2	100020	11/11/2018
14	TURNTABLE	MATURO	TT2.0		N/A
15	ANTENNA MAST	MATURO	TAM-4.0-P		N/A
16	Horn Antenna	SCHWARZBECK	BBHA9170	25841	11/11/2018
17	ULTRA-BROADBAND ANTENNA	Rohde&Schwarz	HL562	100015	07/12/2018
18	Spectrum Analyzer	Keysight	N9030A	A160702554	11/15/2018

The calibration interval was one year.



## Appendix A **Peak Output Power Test Result and Data** Limit(dBm) **Test Frequency** Power(dBm) Result 2402 6.121 Pass 2440 6.176 30 Pass 2480 6.054 Pass Output Power: 2402MHz Output Power: 2440MHz 123 AM Avg Type: Log-Pwr Avg Type: Log-Pwr enter Freq 2.402000000 GHz er Freq 2.440000000 GHz D: Fast Trig: Free Run #Atten: 30 dB 2345 Frast Trig: Free Run Ref Offset 10.5 dB Ref 20.00 dBm Ref Offset 10.5 dB Ref 20.00 dBm 6.121 0 439 97 0 6 176 c **\** Span 10.00 M Sweep 1.000 ms (1001 p Span 10.00 MHz Sweep 1.000 ms (1001 pts) enter 2.402000 GHz Res BW 3.0 MHz Center 2.440000 GHz #Res BW 3.0 MHz #VBW 8.0 MHz #VBW 8.0 MHz Output Power: 2480MHz Avg Type: Log-Pwr Center Freq 2.480000000 GHz Trig: Free Run #Atten: 30 dB Ref Offset 10.5 dB Ref 20.00 dBm Center 2.480000 GHz #Res BW 3.0 MHz Span 10.00 MHz Sweep 1.000 ms (1001 pts #VBW 8.0 MHz



#### **Power Spectral Density Test Result and Data** Limit(dBm/3KHz) **Test Frequency** Result PSD(dBm/3KHz) 2402 -9.143 Pass 8 2440 -9.140 Pass 2480 -9.349 Pass Power spectral density: 2402MHz Power spectral density: 2440MHz PRC: Vide → Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 100/100 a 2.402000000 GHz Avg Type: Log-Pw Avg|Hold: 100/100 : Wide ---- Trig: Free Run #Atten: 30 dB Auto Ti 2.401 977 31 977 52 Ref Offset 10.5 dB Ref 20.00 dBm Ref Offset 10.5 dE Ref 20.00 dBm Center Free 000 GH Start Free 94034 GH A.A. top Fre WWWWWWW MM NW 1 CF Ste 101.193 kF Freq Offs 0 Scale Type Center 2.4400000 GH #Res BW 3.0 kHz Lin Span 1.073 Mi Sweep 2.783 ms (8350 p Span 1.012 MH ep 2.783 ms (8350 pts Center 2.4020000 GHz #Res BW 3.0 kHz #VBW 10 kHz #VBW 10 kHz Power spectral density: 2480MHz Avg Type: Log-Pwr Avg|Hold: 100/100 2 4 9 0 12345 Mwww ---- Trig: Free Run #Atten: 30 dB Ref Offset 10.5 dB Ref 20.00 dBm .479 977 66 May Man Man Span 1.063 MH ep 2.783 ms (8350 pt Center 2.4800000 GHz #Res BW 3.0 kHz #VBW 10 kHz



#### 6dB BandWidth **Test Result and Data** 6dBOccupy Min Limit(kHz) **Test Frequency** Result Bandwidth(Khz) 2402 670.9 Pass 2440 674.6 500 Pass 2480 708.5 Pass 6dB Bandwidth: 2402MHz 6dB Bandwidth: 2440MHz 02:43:36 PM Apr 23, Radio Std: None 02:58:26 PM Apr 23, Radio Std: None enter Freg 2.402000000 GHz Avg|Hold: 10/10 00 GHz Avg|Hold:>10/10 Center Freq: 2.4 Trig: Free Run nter Freg 2.440000000 GH Center Freq: 2.4 Trig: Free Run vice: BTS Radio Device: BTS 5.4033 d Ref Offset 10.5 dB Ref 20.00 dBm 5.1760 d Ref Offset 10.5 dB Ref 20.00 dBm Center Fred Center Free 2.402000000 GHz CF Step 300.000 kHz Mar CF Step 300.000 kH Ma Span 3 MH Sweep 1.533 m ter 2.44 GHz s BW 100 kH; Span 3 MI Sweep 1.533 n er 2.402 GHz BW 100 kHz #VBW 300 kHz #VBW 300 kHz tal Po 11.2 dBn Total Po 11.5 dBr Occupied Bandwidth Occupied Bandwidth 1.0753 MHz 1.0793 MHz Freq Offset Freq Offse 99.00 % -6.00 dB 7.535 kHz 6.477 kHz % of OBW Power Transmit Freq Error % of OBW Power Transmit Freq Error 99.00 % 674.6 kHz 670.9 kHz x dB x dB Bandwidth x dB -6.00 dB 6dB Bandwidth: 2480MHz 09:05:08 AM Apr 12, 2019 Radio Std: None Center Freq 2.480000000 GHz Center Freq: 2.4 Trig: Free Run #Atten: 30 dB GHz Avg|Hold: 10/10 dio Device: BTS 2.479997 4.9754 c Ref Offset 10.5 dB Ref 20.00 dBm Span 3 MHz Sweep 1.533 ms er 2.48 GHz #VBW 300 kHz 12.2 dBm otal 1.0602 MHz 3.253 kHz 99.00 % -6.00 dB Transmit Freq Error % of OBW Power 708.5 kHz x dB Bandwidth x dB

