RF Test Report

Product Name: **Smart Watch**

Product Model: **JPT-B19**

Report Number: **SYBH(Z-EMC)20210626005001-4**

FCC ID: **2ATEYJPT-B19**

Reliability Laboratory of Huawei Technologies Co., Ltd.

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

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Applicant:	Huawei Device Co., Ltd.
Address:	No.2 of Xincheng Road, Songshan Lake Zone, Dongguan, Guangdong 523808, People's Republic of China
Date of Receipt Test Item:	2021-07-15
Start Date of Test:	2021-07-16
End Date of Test:	2021-07-27
Test Result:	Pass

Prepared by (Test Engineer)	**2021-07-27**	**Chang Lina**	Chang Lina
	Date	**Name**	**Signature**
Reviewed by (Test Engineer)	**2021-07-28**	**Rao Legian**	Rao Legian
	Date	**Name**	**Signature**
Approved By (Lab Manager)	**2021-07-28**	**He Hao**	He Hao
	Date	**Name**	**Signature**

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TABLE OF CONTENT

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1.1 Further information

Glossary

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EUT	-	Equipment under test
EN	-	European Standard
ETSI	-	European Telecommunications Standard Institute
HW	-	Hardware
QP	-	Quasi peak
S/N	-	Serial number
SW	-	Software
WPT	-	Wireless power transmission

1.2 Document history

Version	Applied changes	Date of release
V1.0	First report	2021-07-28

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1.3 Test Site Information

Test Site 1:	Reliability Laboratory of Huawei Technologies Co., Ltd. Global Compliance and Testing Center of Huawei Technologies Co., Ltd.
Test Site Location:	No.2, New City Avenue, Songshan Lake Sci. & Tech. Industry Park, Dongguan, 523808, P.R.C

1.4 EUT information

1.4.1 EUT Description

JPT-B19 is a smart watch; it can be communicated with mobile phone via Bluetooth. Watch also support alarm clock, intelligent user can judge the state of motion, scientific sleep monitoring, information assistance,heart rate monitoring,GPS functionalities and supports music playback and bluetooth calling.The BT/WIFI frequency is 2.4GHz.

EUT Description	
Product Name	Smart Watch
Model Number	JPT-B19
TX Frequency	2.4G WIFI: 2412MHz to 2462MHz Bluetooth: 2402MHz to 2480MHz WPT: 110.5kHz to 148kHz(2.75W) NFC:13.56MHz
RX Frequency	2.4G WIFI: 2412MHz to 2462MHz Bluetooth: 2402MHz to 2480MHz BDS: 1176.45MHz/1561.098MHz Galileo: 1176.45MHz/1575.42MHz GLONASS: 1597MHz to 1607MHz GPS: 1176.45MHz/1575.42MHz WPT: 110.5KHz to 148KHz(2.75W) NFC:13.56MHz
SN	CSNTQ21627000009
HW Version	R2
SW Version	2.0.1.137
EUT Accessory	
Watch Wireless Charger	Manufacturer: Huawei Devices Co., Ltd. Model: CP81-1 Input voltage: 5V SN: 2102453063JV14256328
Li-polymer Battery	Manufacturer: Huawei Technologies Co., Ltd. (NVT/Lishen) Battery Model: HB532729ECW Capacity: 455 mAh Rated Voltage:3.82V Charging Voltage:4.4V

Remark: The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.

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1.4.2 Overview of operational modes within a WPT system

Mode	
Mode	Wireless Charging (Adapter+ Wireless Charging Base+ Smart Watch)

1.4.3 Associated Equipment Used during Test

Name	Model	Manufacturer	S/N	Calibrated Deadline	Cal interval (month)
Adapter	HW-050200U02	HUAWEI	B95532J4M00016	N/A	N/A

1.5 Applied Standards

Applied Rules:	47 CFR FCC Part 15, Subpart C
Test Method:	ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices

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2 Summary of Results

Summary of Results				
Report Clause	**Test Items**	**Standard Clause**	**Result**	**Site**
3.1	AC Power-line Conducted Emissions	15.207	Pass	Site1
3.2	Transmitter Raidated Emssions	15.209	Pass	Site1
3.3	Occupied Bandwidth	2.1049	Pass	Site1

Note 1：If there is more than one adaptor,each one should be applied throughout the compliance test respectively, however, only the worst case will be recorded in this report.

During the measurement, the environmental conditions complied with the range listed as below.

Item	**Required**
Ambient temperature	15°C～35°C
Relative humidity	25%～75%
Atmospheric pressure	86kPa～106kPa

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3 Test Results

3.1 AC Power-line Conducted Emissions

3.1.1 Test Procedure

The Table-top EUT was placed upon a non-metallic table 0.8 m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10: 2013.

Conducted Disturbance at AC Port measurements were undertaken on the L and N Lines. The emissions were measured using a Quasi-Peak Detector and Average Detector.

The EUT communicates with the WPT clint device, the EUT transmitter the maximum power which defined in specification of product. The Wireless Modem operated on the typical channel.

Measurement bandwidth (RBW) for 150kHz to 30 MHz: 9 kHz.

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3.1.2 Test Setup

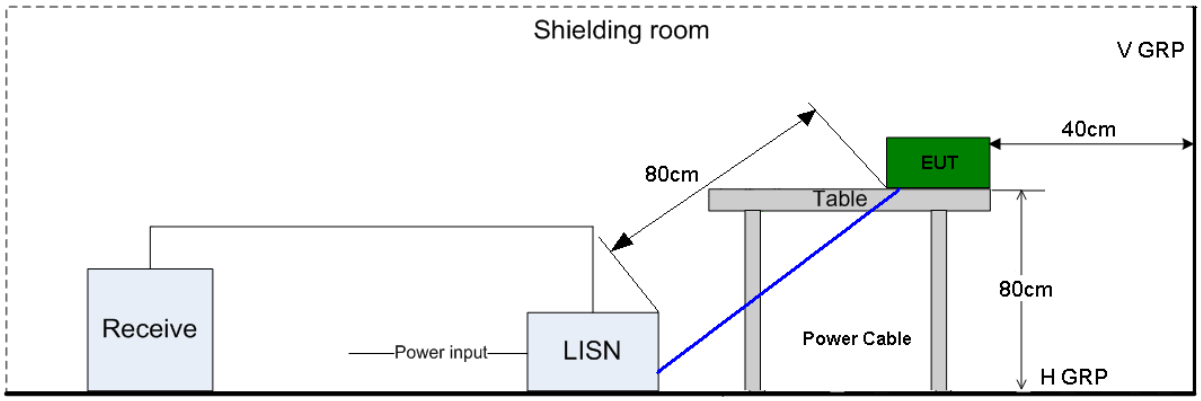

Figure 1.Test Set-up of conducted disturbance

3.1.3 Test Results

The EUT has met requirements for Conducted disturbance of power lines.
Limit: FCC § 15.207 (a)

Test Limit of AC Power Port		
Frequency range	150kHz ~ 30MHz	
Frequency	Voltage limits	
	QP (dBμV)	AV (dBμV)
0.15MHz~0.5MHz	66-56	56-46
0.5MHz-5MHz	56	46
5MHz~30MHz	60	50

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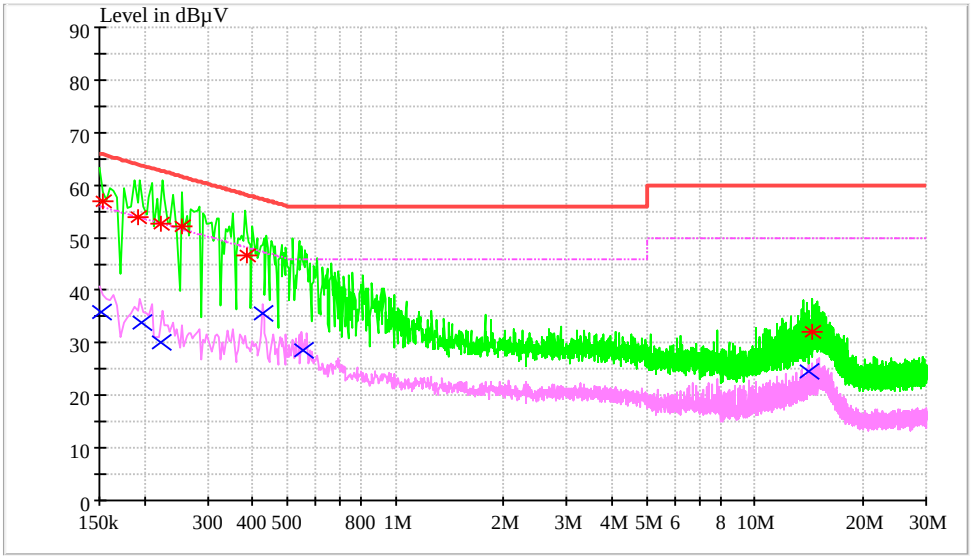
3.1.4 Test Data



MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV	Line	Transd dB	Margin dB	Limit dBµV	PE
0.152587	56.89	N	9.7	8.97	65.86	FLO
0.193142	53.95	L1	9.7	9.95	63.90	FLO
0.221523	52.53	L1	9.7	10.23	62.76	FLO
0.255254	52.26	N	9.7	9.32	61.58	FLO
0.384986	46.57	L1	9.7	11.60	58.17	FLO
14.443854	31.97	N	10.5	28.03	60.00	FLO

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV	Line	Transd dB	Margin dB	Limit dBµV	PE
0.151971	35.83	N	9.7	20.06	55.89	FLO
0.196953	33.87	L1	9.7	19.87	53.74	FLO
0.221421	30.19	L1	9.7	22.57	52.76	FLO
0.428935	35.50	N	9.7	11.77	47.27	FLO
0.550461	28.66	N	9.7	17.34	46.00	FLO
14.190942	24.62	N	10.5	25.38	50.00	FLO

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3.2 Transmitter Radiated Emissions

3.2.1 Test Procedure

For frequency below 1GHz, the test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.10 (2013). The EUT was set-up on insulator 80cm above the Ground Plane.

The set-up and test methods were according to ANSI C63.10:2013.The Radiated Disturbance measurements were made using a Rohde and Schwarz Test Receiver and control software.

A preliminary scan and a final scan of the emissions were made by using test script of software; the emissions were measured using a Quasi-Peak Detector below 1GHz, The maximal emission value was acquired by adjusting the turntable azimuth in accordance with the software setup. Normally, t the azimuth range of turntable was 0°to 360°.

A portable or small unlicensed wireless device shall be placed on a non-metallic test fixture or other nonmetallic support during testing. The supporting fixture shall permit orientation of the EUT in each of three orthogonal (x, y, z) axis positions such that emissions from the EUT are maximized.

The EUT communicates with the WPT cient device. The EUT operated on the typical channel.

Measurement bandwidth:
9 KHz – 150 kHz: RBW=200 Hz
150 KHz – 30 MHz: RBW= 9 kHz
30 MHz- 1000 MHz: RBW= 120 kHz

3.2.2 Test Setup

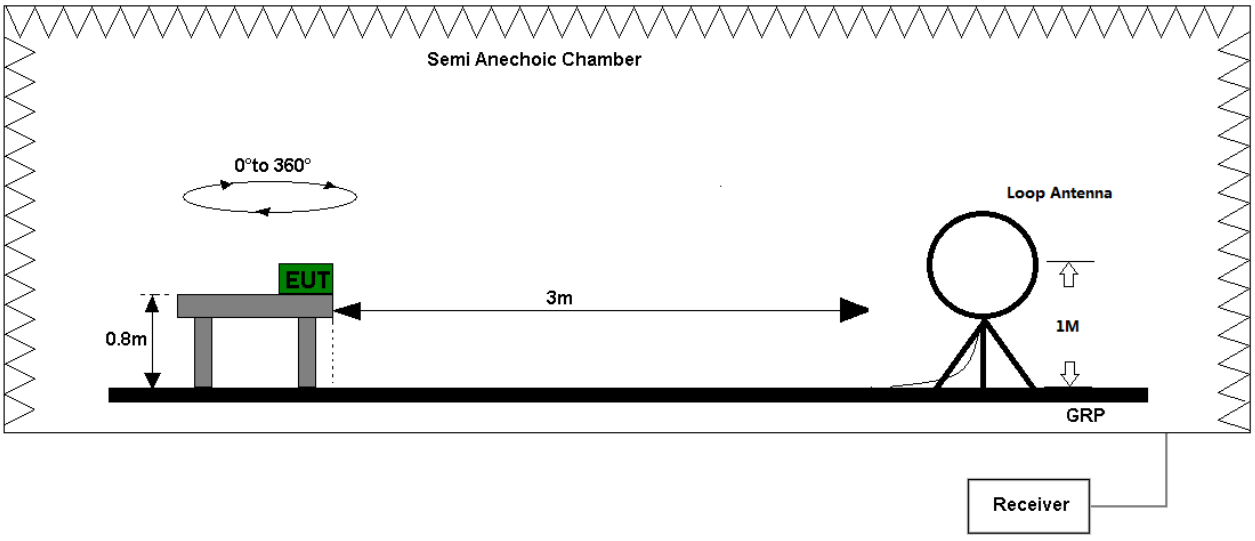

Figure 2.Test set-up of radiated disturbance(9KHz-30MHz)

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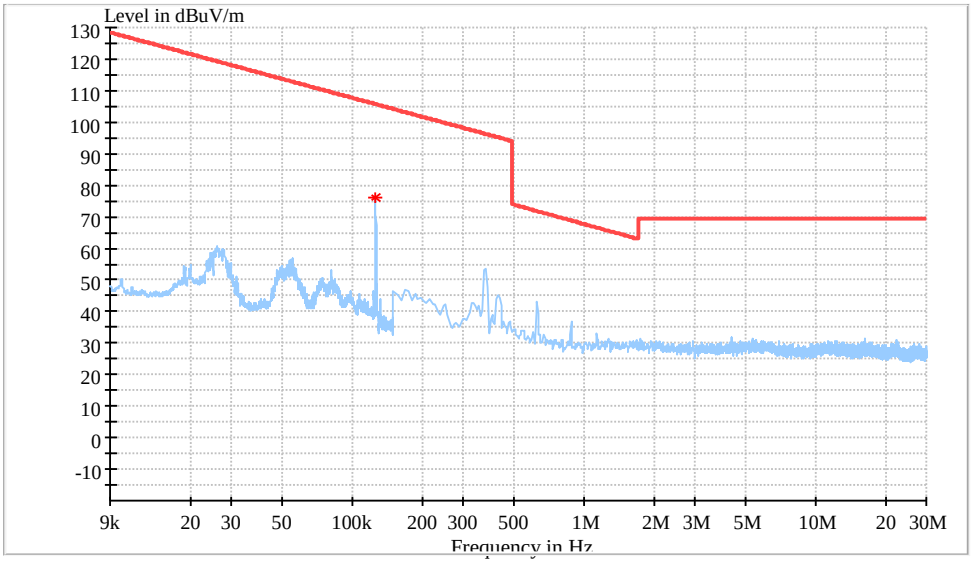
3.2.3 Test Results

The EUT has met requirements for Transmitter Radiated Emissions.
Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Measurement distance(m)
0.009-0.490	2400/F(KHz)=45.519 dBuV/m@300m 2400/F(KHz)=13.8 dBuV/m@300m	128.519 dBuV/m@3m 93.8 dBuV/m@3m
0.490-1.705	24000/F(KHz)=33.8 dBuV/m@30m 24000/F(KHz)=22.969 dBuV/m@30m	73.8 dBuV/m@3m 62.969 dBuV/m@3m
1.705-30.0	30=29.54 dBuV/m@30m	69.5 dBuV/m@3m

3.2.4 Measurement Data



Frequency (MHz)	MaxPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)
0.126199	76.18	105.71	29.52

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3.3 Occupied Bandwidth

3.3.1 E.U.T Operation

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are report in this section.

The EUT communicates with the WPT cient device. The EUT operated on the typical channel.

3.3.2 Test Setup

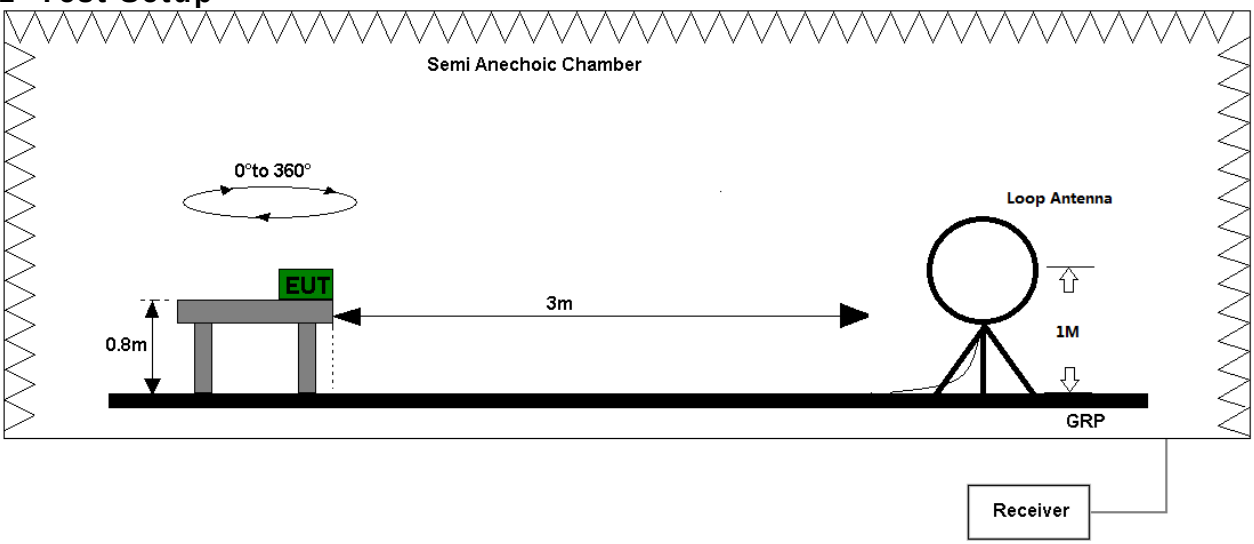

Figure 3.Test set-up of Occupied Bandwidth

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3.3.3 Measurement Data

Test frequency (KHz)	99% bandwidth (kHz)	Result
126.154	3.286	PASS

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4 Main Test Instruments

Main Test Equipments						
Test item	Test Instrument	Model	S/N	Manufacturer	Calibrated deadline	Cal interval (month)
AC power-line Conducted Emissions	EMI Test receiver	ESU26	100150	R&S	Nov. 5, 2021	12
	LISN Line Impedance Stabilization Network	ENV216	100382	R&S	Jul. 12, 2022	12
Transmitter Radaited emissions& Occupied Bandwidth	Receiver	ESW44	101878	R&S	Jan. 30, 2022	12
	LOOP Antennas	HFH2-Z2	100262	R&S	Jan. 30, 2022	24
Software Information						
Test Item	Software Name		Manufacturer		Version	
AC power-line Conducted Emissions	EMC32		R&S		V9.25.0	
Transmitter Radaited emissions & Occupied Bandwidth	EMC32		R&S		V10.60.20	

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5 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Items	Extended Uncertainty
AC power-line Conducted Emissions	U=2.3dB; k=2
Transmitter Radaited emissions	U=3.872dB; k=2

END

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