

## Huawei Technologies Co., Ltd.

# **C2PC TEST REPORT**

#### **Report Type:**

FCC Part 15.407 & ISED RSS-247 RF report

#### Model:

HUAWEI Board-65, HUAWEI Board-65A

#### **REPORT NUMBER:**

190902548SHA-002

#### **ISSUE DATE:**

November 8, 2019

#### **DOCUMENT CONTROL NUMBER:**

TTRF15.407\_V1 © 2018 Intertek





Intertek Testing Services Shanghai Building No.86, 1198 Qinzhou Road (North) Caohejing Development Zone Shanghai 200233, China

Telephone: 86 21 6127 8200

www.intertek.com
Report no.: 190902548SHA-002

**Applicant:** Huawei Technologies Co., Ltd.

Administration Building, Huawei Base, Bantian, Longgang District,

Shenzhen 518129 China

Manufacturer: Huawei Technologies Co., Ltd.

Administration Building, Huawei Base, Bantian, Longgang District,

Shenzhen 518129 China

Manufacturing site: Huawei Technologies Co., Ltd.

Administration Building, Huawei Base, Bantian, Longgang District,

Shenzhen 518129 China

**Product Name:** Videoconferencing Endpoint

Type/Model: HUAWEI Board-65, HUAWEI Board-65A

FCC ID: QIS-BOARD
IC: 6369A-BOARD

#### **SUMMARY:**

DDEDARED DV

The equipment complies with the requirements according to the following standard(s) or Specification:

47CFR Part 15 (2018): Radio Frequency Devices (Subpart C)

**ANSI C63.10 (2013):** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

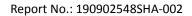
**RSS-247 Issue 2 (February 2017):** Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

RSS-Gen Issue 5 (April 2018): General Requirements for Compliance of Radio Apparatus

PREPARED DI.	REVIEWED DI.	
Stephanie		
Stephanie Zhang	Wakeyou Wang	
Project Engineer	Reviewer	

DEVIEWED BY

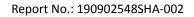
This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.





## **Content**

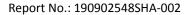
RE	VISIC	ON HISTORY	4
M	EASU	REMENT RESULT SUMMARY	5
1	G	ENERAL INFORMATION	6
	1.1	DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)	6
	1.2	TECHNICAL SPECIFICATION	
	1.3	DESCRIPTION OF TEST FACILITY	7
2	T	EST SPECIFICATIONS	8
	2.1	STANDARDS OR SPECIFICATION	8
	2.2	MODE OF OPERATION DURING THE TEST	
	2.3	Test software list	10
	2.4	TEST PERIPHERALS LIST	10
	2.5	TEST ENVIRONMENT CONDITION:	10
	2.6	Instrument list	11
	2.7	Measurement uncertainty	12
3	R	ADIATED EMISSIONS	13
	3.1	LIMIT	13
	3.2	Measurement Procedure	14
	3.3	TEST CONFIGURATION	15
	3.4	Test Results of Radiated Emissions	17
4	P	OWER LINE CONDUCTED EMISSION	22
	4.1	Measurement Procedure	22
	4.2	TEST CONFIGURATION	22
	4.3	TEST RESULTS OF POWER LINE CONDUCTED EMISSION	23





## **Revision History**

Report No.	Version	Description	Issued Date
190902548SHA-002	Rev. 01	Initial issue of report	November 8, 2019



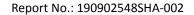


## **Measurement result summary**

TEST ITEM	FCC REFERANCE	IC REFERANCE	RESULT
Maximum Conducted Output Power	15.407(a)	RSS-247 Issue 2 Clause 6	Pass
Radiated emission	15.407(b) 15.205 15.209	RSS-247 Issue 2 Clause 6 RSS-Gen Issue 5 Clause 8.9&8.10	Pass
Power line conducted emission	15.407(b) 15.207	RSS-Gen Issue 5 Clause 8.8	Pass

Notes: 1: NA =Not Applicable

<sup>2.</sup> Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.





### **1 GENERAL INFORMATION**

## 1.1 Description of Equipment Under Test (EUT)

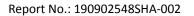
Product name:	Videoconferencing Endpoint
Type/Model:	HUAWEI Board-65, HUAWEI Board-65A
	The EUT is a Videoconferencing Endpoint which was install a WIFI module,
	there have two models, and they are electrically identical except touch
Description of EUT:	screen.
Rating:	AC 100~240V, 50~60Hz
EUT type:	☐ Table top ⊠ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	Oct 11, 2019
Date of test:	Oct 11, 2019 - Oct 22, 2019

## 1.2 Technical Specification

Frequency Range:	5150 ~ 5250MHz, 5250 ~ 5350MHz	
Support Standards:	802.11a, 802.11n/ac(HT20), 802.11n/ac(HT40), 802.11ac(VHT80)	
Type of Modulation:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)	
	For 5150 ~ 5250MHz band: Channel 36 - 48	
Channel Number:	For 5250 ~ 5350MHz Band: Channel 52 - 64	
	Master	
	Client without Radar Detection	
Operating Mode:	Client with Radar Detection	

Antenna No.	Model	Antenna type	Antenna Gain	Note
1	/	PIFA	3.9dBi Max	

Mode	Tx/Rx Function	Beamforming function	CDD function
802.11a	1Tx/1Rx	NO	NO
802.11n/ac (HT20)	2Tx/2Rx	NO	NO
802.11n/ac (HT20)	2Tx/2Rx	NO	NO
802.11ac (HT80)	2Tx/2Rx	NO	NO

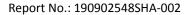




## 1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is	CNAS Accreditation Lab
recognized,	Registration No. CNAS L0139
certified, or accredited by these organizations:	FCC Accredited Lab Designation Number: CN1175
0.8424.00.	IC Registration Lab Registration code No.: 2042B-1
	VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252
	NVLAP Accreditation Lab NVLAP LAB CODE: 200849-0
	A2LA Accreditation Lab Certificate Number: 3309.02





## **2 TEST SPECIFICATIONS**

## 2.1 Standards or specification

47CFR Part 15 (2018) ANSI C63.10 (2013) RSS-247 Issue 2 (February 2017) RSS-Gen Issue 5 (April 2018) KDB 789033 D02 v02r01

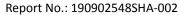
## 2.2 Mode of operation during the test

While testing transmitting mode of EUT, the continuously transmission was applied by following software.

Software name	Manufacturer	Version	Supplied by
CMD Command	-	-	Client

The lowest, middle and highest channel were tested as representatives.

Frequency Band (MHz)	Mode	Lowest (MHz)	Middle (MHz)	Highest (MHz)
	802.11a	5180	5200	5240
F1F0~F2F0MU~	802.11n/ac20	5180	5200	5240
5150~5250MHz	802.11n/ac40	5190	/	5230
	802.11ac80	5210	/	/
5250~5350MHz	802.11a	5260	5300	5320
	802.11n/ac20	5260	5300	5320
	802.11n/ac40	5270	/	5310
	802.11ac80	5290	/	/





After this pre-scan with the RF power, the following data rata was chosen to do the test as the worst case.

Frequency Band (MHz)	Mode	Worst case data rate
	802.11a	6Mbps
F1F0~F3F0	802.11n/ac20	MCS0
5150~5250	802.11n/ac40	MCS0
	802.11ac80	MCS0
	802.11a	6Mbps
F3F0~F3F0	802.11n/ac20	MCS0
5250~5350	802.11n/ac40	MCS0
	802.11ac80	MCS0

The HUAWEI Board-65 was chosen as a representative, and there are the following test modes:

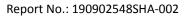
#### Radiated test mode:

Mode 1: EUT transmitted signal with internal antenna;

#### Conducted test mode:

Mode 2: EUT transmitted signal from PCBA RF port connected to SPA directly;

We have verified all test modes and choose the worst mode 1 for radiated test and mode 2 for conducted test as representatively to list the results in this report.





## 2.3 Test software list

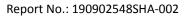
Test Items	Software	Manufacturer	Version
Conducted emission	ESxS-K1	R&S	V2.1.0
Radiated emission	ES-K1	R&S	V1.71

## 2.4 Test peripherals list

Item No.	Name	Band and Model	Description
1	Laptop computer	HP, 6470b	AC 230V 50Hz

## 2.5 Test environment condition:

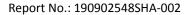
Test items	Temperature	Humidity
Radiated Emissions in restricted frequency bands	27°C	57% RH
Power line conducted emission	26°C	55% RH





### 2.6 Instrument list

Conducted	Conducted Emission/Disturbance Power/Tri-loop Test/CDN method								
Used	Equipment	Manufacturer	Туре	Internal no.	Due date				
$\boxtimes$	Test Receiver	R&S	ESCS 30	EC 2107	2020-07-14				
	A.M.N.	R&S	ESH2-Z5	EC 3119	2019-11-29				
Radiated Emission									
Used	Equipment	Manufacturer	Туре	Internal no.	Due date				
$\boxtimes$	Test Receiver	R&S	ESIB 26	EC 3045	2020-09-16				
$\boxtimes$	Bilog Antenna	TESEQ	CBL 6112D	EC 4206	2019-12-10				
	Pre-amplifier	R&S	AFS42- 00101800-25-S- 42	EC5262	2020-06-11				
Tet Site									
Used	Equipment	Manufacturer	Туре	Internal no.	Due date				
$\boxtimes$	Shielded room	Zhongyu	-	EC 2838	2020-01-13				
	Shielded room	Zhongyu	-	EC 2839	2020-01-13				
	Semi-anechoic chamber	Albatross project	-	EC 3048	2020-06-31				
Additional	instrument								
Used	Equipment	Manufacturer	Туре	Internal no.	Due date				
	Spectrum analyzer	Agilent	E7402A	EC 2254	2020-07-14				
$\boxtimes$	Therom- Hygrograph	ZJ1-2A	S.M.I.F.	EC 3783	2020-03-10				
	Therom- Hygrograph	ZJ1-2A	S.M.I.F.	EC 5198	2020-02-27				
	Therom- Hygrograph	ZJ1-2A	S.M.I.F.	EC 3325	2020-04-07				
$\boxtimes$	Pressure meter	YM3	Shanghai Mengde	EC 3320	2020-07-14				

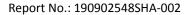




## 2.7 Measurement uncertainty

The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Measurement uncertainty
Maximum peak output power	± 0.74dB
Radiated Emissions in restricted frequency bands below 1GHz	± 4.90dB
Radiated Emissions in restricted frequency bands above 1GHz	± 5.02dB
Power line conducted emission	± 3.19dB





## 3 Radiated Emissions

Test result: Pass

#### 3.1 Limit

The radiated emissions which fall in the restricted bands, and the radiated emissions below 1GHz, must comply with the radiated emission limits specified showed as below:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

The radiated emissions which fall outside the restrict bands, should comply with the EIRP limit as below:

For transmitters operating in the 5.15 - 5.25 / 5.25 - 5.35 / 5.47 - 5.725GHz band:

Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength (3m) (dBμV/m)
<5150		
>5350	-27	68.20
<5470	-27	06.20
>5725		

For transmitters operating in the 5.725 - 5.85GHz band:

Frequency (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength (3m) (dBμV/m)
<5650	-27	68.20
5650 ~ 5700	-27 ~ 10	68.20 ~ 105.20
5700 ~ 5720	10 ~ 15.6	105.20 ~ 110.80
5720 ~ 5725	15.6 ~ 27	110.80 ~ 122.20
5850 ~ 5855	27 ~ 15.6	122.20 ~ 110.80
5855 ~ 5875	15.6 ~ 10	110.80 ~ 105.20
5875 ~ 5925	10 ~ -27	105.20 ~ 68.20
>5925	-27	68.20



Report No.: 190902548SHA-002

#### 3.2 Measurement Procedure

#### For Radiated emission below 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

- b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c) Both X and Y axes of the antenna are set to make the measurement.
- d) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e) The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

#### NOTE:

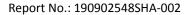
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

#### For Radiated emission above 30MHz:

- a) The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz  $\sim$  1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c) The height of 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.
- d) 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.
- e) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

#### Note:

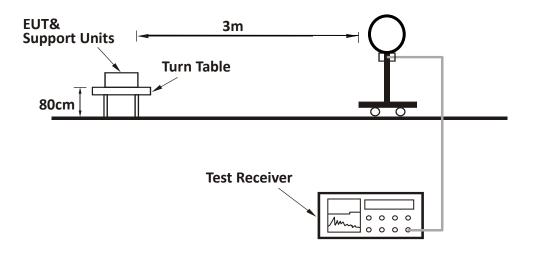
- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.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



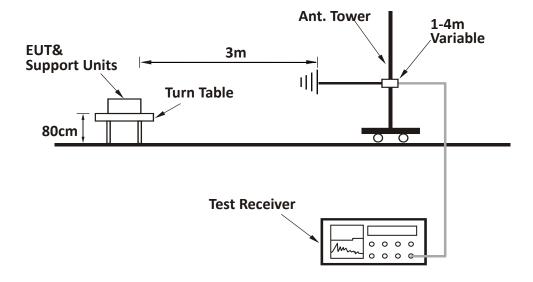


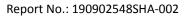
## 3.3 Test Configuration

For Radiated emission below 30MHz:



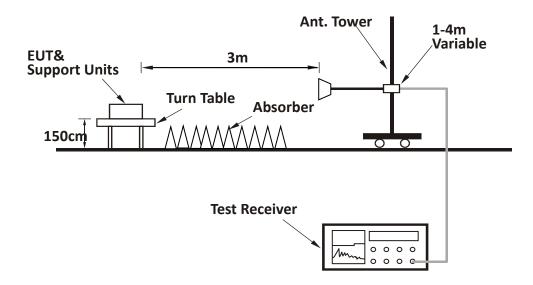
#### For Radiated emission 30MHz to 1GHz:

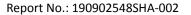






#### For Radiated emission above 1GHz:







#### 3.4 Test Results of Radiated Emissions

#### Test data below 1GHz

Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Н	443.948	19.9	42.8	56.4	13.6	PK
Н	742.494	25.6	50.2	56.4	6.2	PK
Н	890.148	26.9	47.0	56.4	9.4	PK
V	39.993	13.2	43.5	49.0	5.5	PK
V	259.647	10.4	46.6	56.4	9.8	PK
V	648.011	12.1	44.9	56.4	11.5	PK

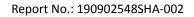
#### **Test result above 1GHz:**

The emission was conducted from 1GHz to 40GHz

#### U-NII-1 Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	Н	5180.00	40.8	104.8	Fundamental	/	PK
	Н	5150.00	40.7	61.2	74.00	12.8	PK
L	Н	5150.00	40.7	51.2	54.00	2.8	AV
	Н	10360.00	14.5	45.0	74.00	29.0	PK
	V	10360.00	14.5	43.3	74.00	30.7	PK
	Н	5200.00	40.9	103.9	Fundamental	/	PK
N.4	Н	5150.00	40.7	49.7	74.00	24.3	PK
M	Н	10400.00	14.5	44.5	74.00	29.5	PK
	V	10400.00	14.5	43.1	74.00	30.9	PK
	Н	5240.00	41.0	103.8	Fundamental	/	PK
Н	Н	5150.00	40.7	52.0	74.00	22.0	PK
	Н	10480.00	14.5	45.0	74.00	29.0	PK
	V	10480.00	14.5	44.1	74.00	29.9	PK



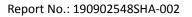


#### 802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	Н	5180.00	40.8	102.8	Fundamental	/	PK
	Н	5150.00	40.7	62.1	74.00	11.9	PK
L	Н	5150.00	40.7	50.7	54.00	3.3	AV
	Н	10360.00	14.5	46.0	74.00	28.0	PK
	V	10360.00	14.5	43.6	74.00	30.4	PK
	Н	5200.00	40.9	103.1	Fundamental	/	PK
M	Н	5150.00	40.7	51.1	74.00	22.9	PK
IVI	Н	10400.00	14.5	44.4	74.00	29.6	PK
	V	10400.00	14.5	42.9	74.00	31.1	PK
	Н	5240.00	41.0	102.9	Fundamental	/	PK
ш	Н	5150.00	40.7	51.6	74.00	22.4	PK
Н	Н	10480.00	14.5	48.9	74.00	25.1	PK
	V	10480.00	14.5	43.0	74.00	31.0	PK

#### 802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	Н	5190.00	40.8	100.6	Fundamental	/	PK
	Н	5150.00	40.7	65.3	74.00	8.7	PK
L	Н	5150.00	40.7	50.4	54.00	3.6	AV
	Н	10380.00	14.5	45.9	74.00	28.1	PK
	V	10380.00	14.5	44.1	74.00	29.9	PK
н	Н	5230.00	41.0	101.0	Fundamental	/	PK
	Н	5150.00	40.7	49.7	74.00	24.3	PK
	Н	10460.00	14.5	45.7	74.00	28.3	PK
	V	10460.00	14.5	42.4	74.00	31.6	PK





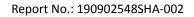
#### 802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
M	Н	5210.00	40.9	101.0	Fundamental	/	PK
	Н	5150.00	40.7	60.5	74.00	13.5	PK
	Н	5150.00	40.7	48.7	54.00	5.3	AV
	Н	10420.00	14.5	45.6	74.00	28.4	PK
	V	10420.00	14.5	43.3	74.00	30.7	PK

#### U-NII-2A Band:

#### 802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	Н	5260.00	40.8	103.8	Fundamental	/	PK
	Н	5350.00	40.8	50.7	74.00	23.3	PK
L	Н	10520.00	14.4	46.8	74.00	27.2	PK
	V	10520.00	14.4	43.8	74.00	30.2	PK
	Н	5300.00	40.8	103.4	Fundamental	/	PK
N.4	Н	5350.00	40.8	52.0	74.00	22	PK
M	Н	10600.00	14.4	46.1	74.00	27.9	PK
	V	10600.00	14.4	43.8	74.00	30.2	PK
	Н	5320.00	40.8	102.7	Fundamental	/	PK
	Н	5350.00	40.8	63.3	74.00	10.7	PK
Н	Н	5350.00	40.8	52.8	54.00	1.2	AV
	Н	10640.00	14.4	48.1	74.00	25.9	PK
	V	10640.00	14.4	44.2	74.00	29.8	PK



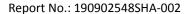


#### 802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	Н	5260.00	40.8	102.7	Fundamental	/	PK
	Н	5350.00	40.8	52.9	74.00	21.1	PK
L	Н	10520.00	14.4	46.6	74.00	27.4	PK
	V	10520.00	14.4	44.0	74.00	30	PK
	Н	5300.00	40.8	102.9	Fundamental	/	PK
N.4	Н	5350.00	40.8	51.7	74.00	22.3	PK
M	Н	10600.00	14.4	47.9	74.00	26.1	PK
	V	10600.00	14.4	43.1	74.00	30.9	PK
	Н	5320.00	40.8	102.6	Fundamental	/	PK
	Н	5350.00	40.8	63.1	74.00	10.9	PK
н	Н	5350.00	40.8	53.1	54.00	0.9	AV
	Н	10640.00	14.4	49.2	74.00	24.8	PK
	V	10640.00	14.4	45.5	74.00	28.5	PK

#### 802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	Н	5270.00	40.8	103.5	Fundamental	/	PK
	Н	5350.00	40.8	52.0	74.00	22.0	PK
L	Н	10540.00	14.4	45.9	74.00	28.1	PK
	V	10540.00	14.4	43.6	74.00	30.4	PK
	Н	5310.00	40.8	102.8	Fundamental	/	PK
	Н	5350.00	40.8	65.0	74.00	9.0	PK
н	Н	5350.00	40.8	50.6	54.00	3.4	AV
	Н	10620.00	14.4	46.7	74.00	27.3	PK
	V	10620.00	14.4	43.4	74.00	30.6	PK





#### 802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
	н	5290.00	40.8	103.1	Fundamental	/	PK
	н	5350.00	40.7	63.8	74.00	10.2	PK
L	н	5350.00	40.7	50.9	54.00	3.1	AV
	н	10580.00	14.4	48.0	74.00	26	PK
	V	10580.00	14.4	44.5	74.00	29.5	PK

Remark: 1. Correct Factor = Antenna Factor + Cable Loss (+ Amplifier, for higher than 1GHz), the value was added to Original Receiver Reading by the software automatically.

- 2. Corrected Reading = Original Receiver Reading + Correct Factor
- 3. Margin = Limit Corrected Reading
- 4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,

Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV,

Limit = 40.00dBuV/m.

Then Correct Factor = 30.20 + 2.00 - 32.00 = 0.20dB/m;

Corrected Reading = 10dBuV + 0.20dB/m = 10.20dBuV/m;

Margin = 40.00dBuV/m - 10.20dBuV/m = 29.80dB.





#### 4 Power line conducted emission

Test result: Pass

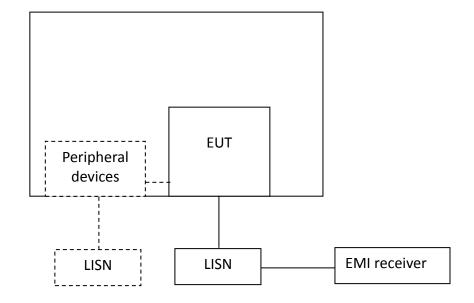
#### 4.1 Measurement Procedure

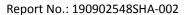
Measured levels of ac power-line conducted emission shall be the emission voltages from the voltage probe, where permitted, or across the 50  $\Omega$  LISN port (to which the EUT is connected), where permitted, terminated into a 50  $\Omega$  measuring instrument. All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer. For those measurements using a LISN, the 50  $\Omega$  measuring port is terminated by a measuring instrument having 50  $\Omega$  input impedance. All other ports are terminated in 50  $\Omega$  loads.

Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

The bandwidth of the test receiver is set at 9 kHz.

#### 4.2 Test Configuration

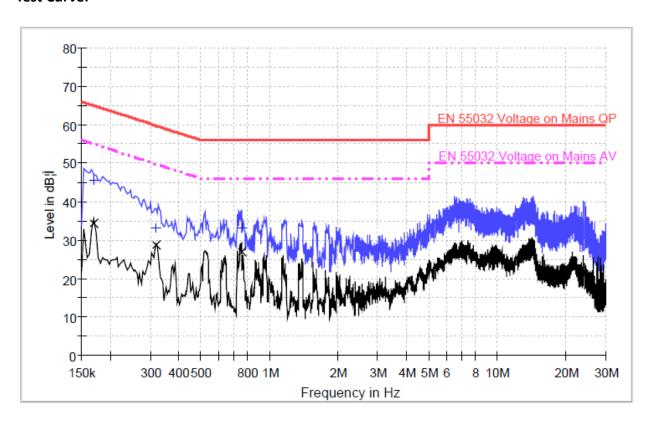






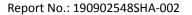
## 4.3 Test Results of Power line conducted emission

#### **Test Curve:**



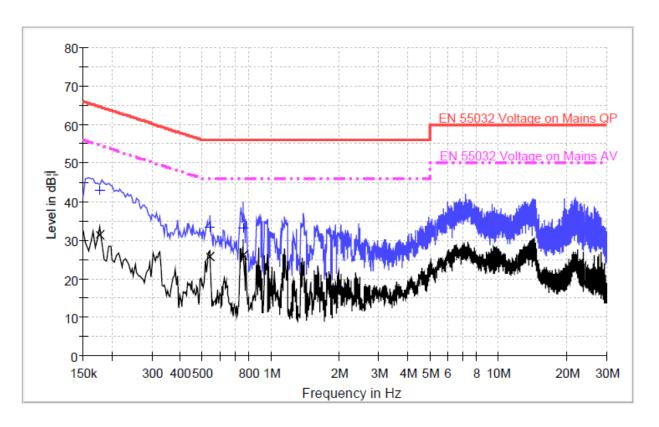
#### **Test Data:**

	Quasi-peak						
Frequency (MHz)	Corrected Reading (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Reading (dBuV)	Limit (dBuV)	Margin (dB)	Line
0.170	45.7	65.0	19.3	34.2	55.0	20.8	L
0.318	33.1	59.8	26.7	28.7	49.8	21.1	L
0.754	33.3	56.0	22.7	26.8	46.0	19.2	L





#### **Test Curve:**



#### **Test Data:**

	Quasi-peak						
Frequency (MHz)	Corrected Reading (dBuV)	Limit (dBuV)	Margin (dB)	Corrected Reading (dBuV)	Limit (dBuV)	Margin (dB)	Line
0.178	42.8	64.6	21.8	31.3	54.6	23.3	N
0.538	33.3	56.0	22.7	25.7	46.0	20.3	N
0.758	33.3	56.0	22.7	26.0	46.0	20.0	N

Remark: 1. Correct Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.

- 2. Corrected Reading = Original Receiver Reading + Correct Factor
- 3. Margin = Limit Corrected Reading
- 4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.