

FCC TEST REPORT

For

UMTS Mobile Phone

Model Number: HUAWEI Y560-U23, Y560-U23

FCC ID: QISY560-U23

Report Number : WT158002028

Test Laboratory : Shenzhen Academy of Metrology and Quality
Inspection
National Digital Electronic Product Testing Center
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TEST REPORT DECLARATION

Applicant : Huawei Technologies Co.,Ltd

Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District Shenzhen China

Manufacturer : Huawei Technologies Co.,Ltd

Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District Shenzhen China

EUT Description : UMTS Mobile Phone

Model No : HUAWEI Y560-U23, Y560-U23

Trade mark : HUAWEI

Serial Number : 73UBBBB532600464

FCC ID : QISY560-U23

Test Standards:

FCC Part 15 Subpart B 15.107, 15.109 (2014)

The EUT described above is tested by Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory to determine the maximum emissions from the EUT. Shenzhen Academy of Metrology and Quality Inspection EMC Laboratory is assumed full responsibility for the accuracy of the test results.

The test report is valid for above tested sample only and shall not be reproduced in part without written approval of the laboratory.

Project Engineer:	 (Wan Xiaojing)	Date:	<u>June.01.2015</u>
Checked by:	 (Yang Dong Ping)	Date:	<u>June.01.2015</u>
Approved by:	 (Lin Bin)	Date:	<u>June.01.2015</u>

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1. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	FCC Rules	Test Results
Conducted Disturbance	15.107	Pass
Radiation Emission	15.109	Pass

Remark: "N/A" means "Not applicable."

2. GENERAL INFORMATION

2.1. Report information

- 2.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that SMQ approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that SMQ in any way guarantees the later performance of the product/equipment.
- 2.1.2. The sample/s mentioned in this report is/are supplied by Applicant, SMQ therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 2.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through SMQ, unless the applicant has authorized SMQ in writing to do so.

2.2. Laboratory Accreditation and Relationship to Customer

The testing report were performed by the Shenzhen Academy of Metrology and quality Inspection EMC Laboratory (Guangdong EMC compliance testing center), in their facilities located at Bldg. of Metrology & Quality Inspection, Longzhu Road, Nanshan District, Shenzhen, Guangdong, China. At the time of testing, Laboratory is accredited by the following organizations:

China National Accreditation Committee for Laboratories (CNAS) accredits the Laboratory for conformance to FCC standards, EMC international standards and EN standards. The Registration Number is L0579.

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number are 446246 806614 994606 (semi anechoic chamber).

The Laboratory is registered to perform emission tests with Industry Canada (IC), and the registration number is IC4174.

TUV Rhineland accredits the Laboratory for conformance to IEC and EN standards, the registration number is E2024086Z02.

Measurement Uncertainty

2.3. Measurement Uncertainty

Conducted Emission
9kHz~30MHz 3.5dB

Radiated Emission
30MHz~1000MHz 4.5dB
1GHz~18GHz 4.6dB

3. PRODUCT DESCRIPTION

3.1.EUT Description

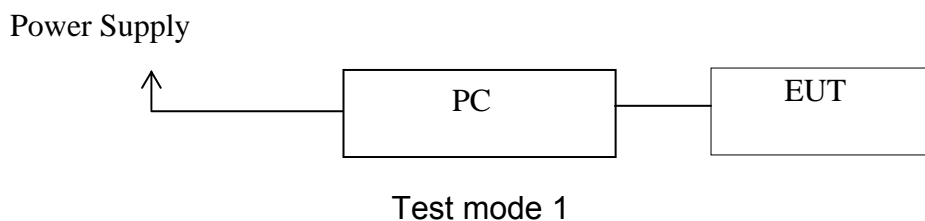
Table 2 Specification of the Equipment under Test

Product Type:	HUAWEI Y560-U23, Y560-U23
Hardware Version:	Ver.A
Software Version :	Y560-U23V100R001C464B005
FCC-ID:	QISY560-U23
Frequency:	GSM 850: 824-849MHz; PCS 1900: 1850-1910MHz WCDMA Band II: 1850MHz To 1910MHz WCDMA Band V: 824MHz To 849MHz
Type(s) of Modulation:	GSM/WCDMA: GMSK; 8-PSK; QPSK
Operating voltage:	DC3.8V

Remark:

1. HUAWEI Y560-U23 compared with Y560-U23, only have different model number. All of the models' circuit theory, electrical design and the key pieces are the same. The differences do not affect the EMC and safety performance. Unless otherwise specified, the model HUAWEI Y560-U23 was chosen as representative model to perform all the tests.
2. Adapters have four kinds of configuration, USA, European, British and Australian respectively. Each configuration just has different plug. The circuit board of European is different with the other three's. And also adapters have four manufacturers. Each manufacturer's adapter has different circuit board.

3.2.Block Diagram of EUT Configuration



3.3.Operating Condition of EUT

Test Mode 1: Data transmitter with PC USB port

Test Mode 2: Adapter + Earphone + Camera On + Idle

Test Mode 3: Adapter + Earphone + Playing + Idle

Test Mode 4: Adapter + Earphone + Traffic

The Radiated emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission (X plane).

Remark:

If there is one kind of accessories with different models, each one should be applied throughout the compliance test respectively, however, only the worst case mode will be recorded in this report.

If EUT has more than one typical operation, only the worst test mode will be recorded in this report.

3.4. Support Equipment List

Name	Model No	S/N	Manufacturer
Computer	9439	L3BDF2K	Lenovo
Keyboard (USB)	SK-8825 (L)	02553778	Lenovo
Mouse (USB)	MO28UOL	4418011108	Lenovo
Monitor	9227-AE1	V1TDB38	Lenovo
Adaptor for EUT	HW-050100U01	H666LGF4G06262	Shen Zhen Huntkey Electronic Co., Ltd.
		Y66601F3L00042	Dongguan City Yingju Electronics Co.,Ltd.
		P66606F4905716	Dongguan Phitek Electronics Co., Ltd.
		B66660F3G00256	Huizhou BYD Electronic Co., Ltd.
Adaptor for EUT	HW-050100E01	H667LGF4723178	Shen Zhen Huntkey Electronic Co., Ltd.
		Y66801F3J00049	Dongguan City Yingju Electronics Co.,Ltd.
		P66707F3200350	Dongguan Phitek Electronics Co., Ltd.
		B66799F4200069	Huizhou BYD Electronic Co., Ltd.
Adaptor for EUT	HW-050100B01	--	Shen Zhen Huntkey Electronic Co., Ltd.
		--	Dongguan City Yingju Electronics Co.,Ltd.
		--	Dongguan Phitek Electronics Co., Ltd.
		--	Huizhou BYD Electronic Co., Ltd.
Adaptor for EUT	HW-050100A01	--	Shen Zhen Huntkey Electronic Co., Ltd.
		--	Dongguan City Yingju Electronics Co.,Ltd.
		--	Dongguan Phitek Electronics Co., Ltd.
		--	Huizhou BYD Electronic Co., Ltd.
Rechargeable Li-ion for EUT	HB494590EBC	--	BYD Lithium Battery Company Limited
Rechargeable Li-ion for EUT	HB494590EBC	--	SCUD (FUJIAN) Electronics Co., Ltd.
Data cable	130-41040	--	CHANGSHU HONGLIN TECHNOLOGY CO.,LTD.
Data cable	H09-000473	--	SHEN ZHEN PANG NGAI INDUSTRIAL CO., LTD.
Earphone	HA1-3	--	GoerTek Inc.
Earphone	1293#+3283# 3.5MM-150	--	BOLUO COUNTY QUANCHENG ELECTRONIC CO., LTD.
Earphone	MEMD1532B52 8000	--	Jiangxi Lianchuang Hongsheng Electronic Co., LTD.
Earphone	EMC323-011-01	--	MERRY ELECTRONICS CO., LTD.
Earphone	HG-04A	--	GoerTek Inc.

3.5. Test Conditions

Date of test: May.21, 2015 - May.22, 2015

Date of EUT Receive: May.15, 2015

Temperature: 23-26 °C

Relative Humidity: 46-51%

3.6. Modifications

No modification was made.

4. TEST EQUIPMENT USED

4.1. Test Equipment Used to Measure Conducted Disturbance

Table 2 Conducted Disturbance Test Equipment

No.	Equipment	Manufacturer	Model No.	LAST CALIB	Period
SB3319	EMI Test Receiver	R&S	ESCS30	Dec.29,2014	1 Year
SB4357	AMN	R&S	ENV216	Oct.14,2014	1 Year
SB3441	Universal Communication Tester	R&S	CMU200	Mar.10, 2015	1 Year
SB9054/02	Wideband Radio Communication Tester	R&S	CMW500	Oct.27, 2014	1 Year

4.2. Test Equipment Used to Measure Radiated Disturbance

Table 3 Radiated Disturbance Test Equipment

No.	Equipment	Manufacturer	Model No.	LAST CALIB	Period
SB3436	EMI Test Receiver	R&S	ESI26	Dec.29,2014	1 Year
SB8501/09	EMI Test Receiver	R&S	ESU40	Mar.19,2015	1 Year
SB5472/02	Trilog Broadband Antenna(30M-3GHz)	SCHWARZBECK	VULB9163	Jan.19,2015	1 Year
SB3435	Double-Ridged Waveguide Horn Antenna(1G~18GHz)	R&S	HF906	Jan.19,2015	1 Year
SB3441	Universal Communication Tester	R&S	CMU200	Mar.10, 2015	1 Year
SB9054/02	Wideband Radio Communication Tester	R&S	CMW500	Oct.27, 2014	1 Year

5. CONDUCTED DISTURBANCE TEST

5.1. Test Standard and Limit

5.1.1. Test Standard

FCC Part 15: Section 15.107

5.1.2. Test Limit

Table 4 Conducted Disturbance Test Limit (Class B)

Frequency	Power Port limits (dB μ V)	
	Quasi-peak	Average
0.15MHz ~ 0.5MHz	66~56*	56~46*
0.5MHz ~ 5 MHz	56	46
5 MHz ~ 30MHz	60	50

* Decreasing linearly with logarithm of the frequency

5.2. Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESCS30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

5.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

5.4. Test Data

The emissions don't show in following result tables are more than 20dB below the limits, the test curves are shown in the next page.

Only the worst test result was shown in this report.

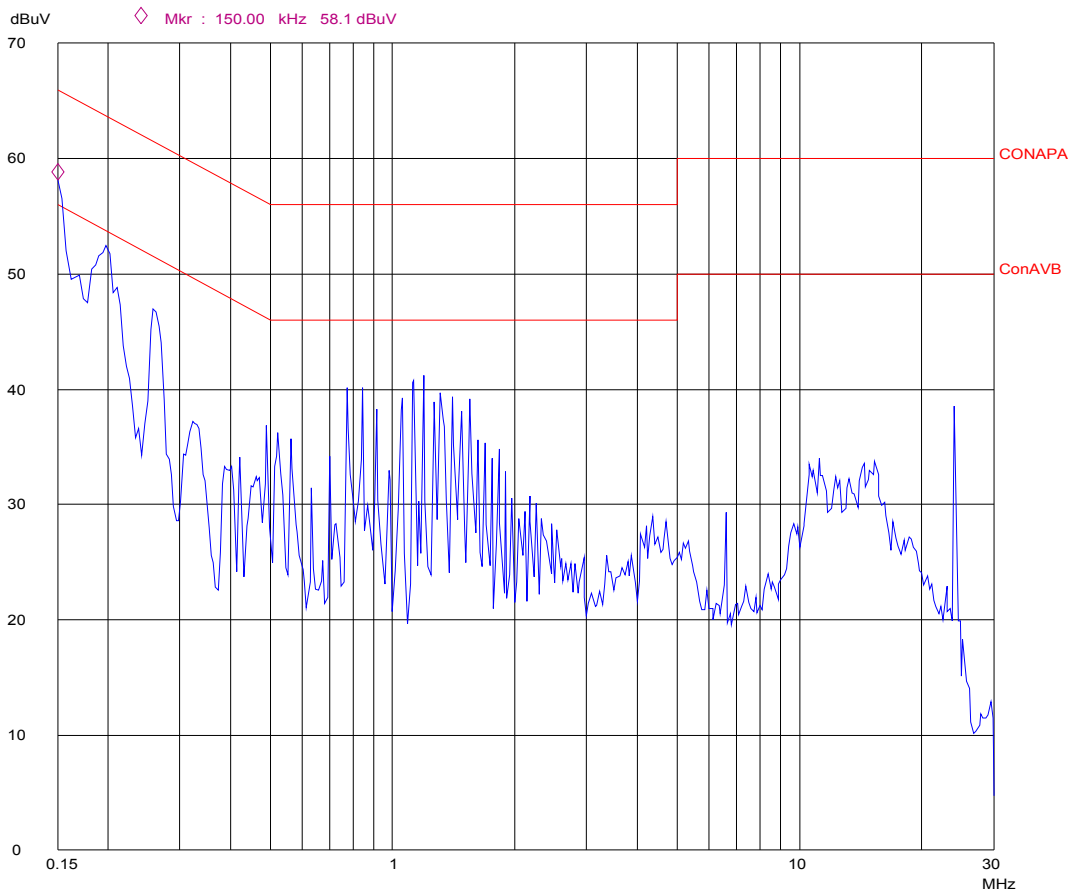
Table 5 Conducted Disturbance Test Data at mains Port

Model No.: HUAWEI Y560-U23								
Test mode: Data transmitter with PC USB port								
	Frequency (MHz)	Correction Factor (dB)	Quasi-Peak			Average		
			Reading (dB μ V)	Emission Level (dB μ V)	Limits (dB μ V)	Reading (dB μ V)	Emission Level (dB μ V)	Limits (dB μ V)
Line	0.150	9.7	38.2	47.9	66	28.4	38.1	56
	0.198	9.7	38.0	47.7	63.7	32.7	42.4	53.7
	0.258	9.7	34.0	43.7	61.5	28.2	37.9	51.5
	0.774	9.8	27.5	37.3	56	25.9	35.7	46
	1.126	9.8	28.9	38.7	56	28.3	38.1	46
	1.306	9.8	27.7	37.5	56	26.3	36.1	46
Neutral	0.154	9.7	36.6	46.3	65.8	27.2	36.9	55.8
	0.198	9.7	38.2	47.9	63.7	32.8	42.5	53.7
	0.258	9.7	34.0	43.7	61.5	28.2	37.9	51.5
	0.622	9.8	27.2	37.0	56	23.5	33.3	46
	1.126	9.8	29.9	39.7	56	29.1	38.9	46
	1.306	9.8	29.9	39.7	56	28.7	38.5	46

REMARKS: 1. Emission level(dBuV)=Read Value(dBuV) + Correction Factor(dB)
2. Correction Factor(dB) =LISN Factor (dB) + Cable Factor (dB)+Limiter Factor(dB)
3. The other emission levels were are more than 20dB below the limits.

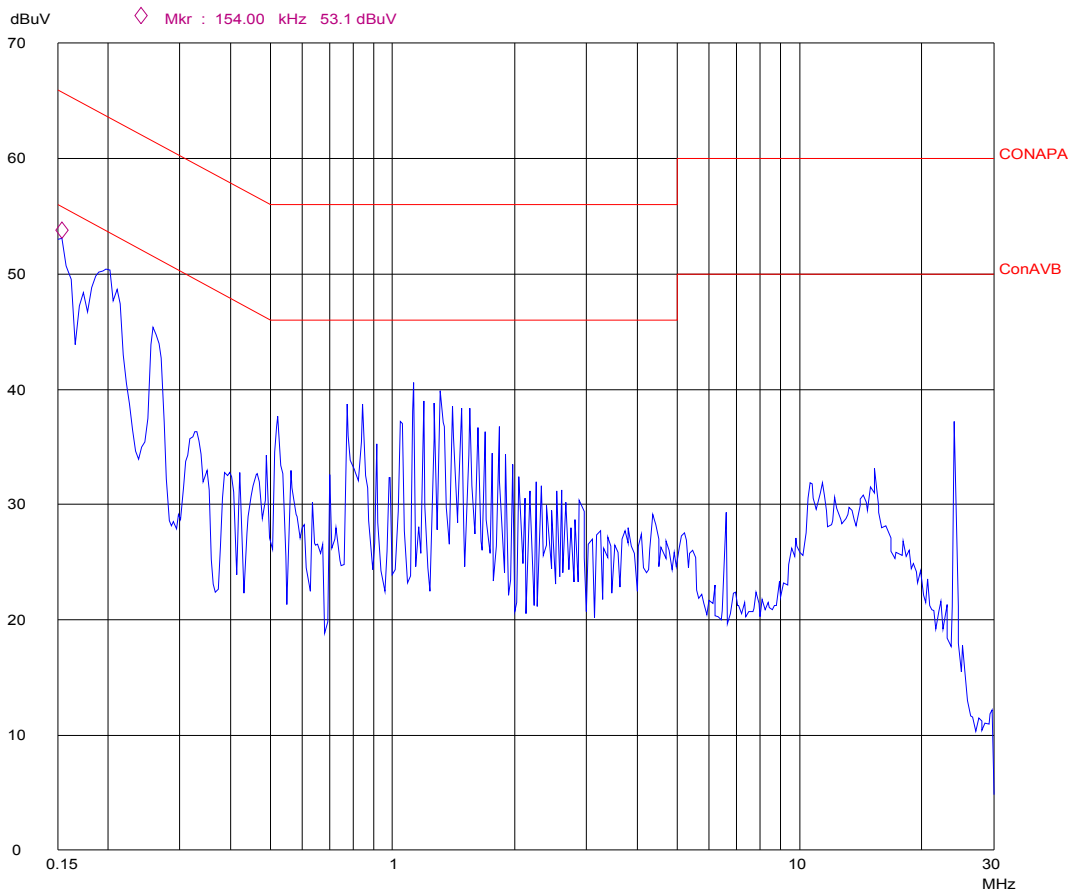
Conducted Disturbance

EUT: HUAWEI Y560-U23
Op Cond: Data trasmiting with PC USB port
Test Spec: L
Comment: AC 120V/60Hz



Conducted Disturbance

EUT: HUAWEI Y560-U23
Op Cond: Data trasmiting with PC USB port
Test Spec: N
Comment: AC 120V/60Hz



6. RADIATION DISTURBANCE TEST

6.1. Test Standard and Limit

6.1.1. Test Standard

FCC Part 15: Section 15.109

6.1.2. Test Limit

Table 7 Radiation Disturbance Test Limit for FCC (Class B)

Frequency (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 lower limit shall apply at the transition frequency.

* The test distance is 3m.

6.2. Test Procedure

The EUT is placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set **3 meters** away from the receiving antenna, which is mounted on an antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test. Set RBW=100 kHz for $f < 1$ GHz; VBW \geq RBW; Detector function = peak; Set RBW = 1 MHz, VBW= 3MHz for $f > 1$ GHz for peak measurement.

6.3. Test Arrangement

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application. The detailed information refers to test picture.

6.4. Test Data

The emissions don't show in following result tables are more than 20dB below the limits, the test curves are shown in the next page.

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

Only the worst test result was shown in this report.

Table 8 Radiated Disturbance Test Data

Frequency MHz	Cable Loss +pre amp (dB)	Antenna Factor (dB)	Readings (dB μ V/m)	Level (dB μ V/m)	Polarity (H/V)	Turntable Angle (deg)	Antenna Height (cm)	Limits (dB μ V/m)	Margin (dB)
51.240	0.8	13.3	12.6	26.7	H	70	100	40.0	13.3
55.886	0.9	13.0	6.8	20.7	H	0	100	40.0	19.3
59.390	0.9	13.0	7.1	21.0	H	20	100	40.0	19.0
90.756	1.2	11.9	3.6	16.7	H	0	100	43.5	26.8
387.260	2.4	14.6	5.6	22.6	H	120	100	46.0	23.4
900.120	3.9	21.1	2.6	27.6	H	80	100	46.0	18.4
43.260	0.7	13.6	6.6	20.9	V	60	100	40.0	19.1
51.360	0.8	13.3	13.5	27.6	V	50	100	40.0	12.4
51.920	0.8	13.3	16.5	30.6	V	40	100	40.0	9.4
53.183	0.7	13.3	13.6	27.6	V	20	100	40.0	12.4
54.340	0.8	13.3	7.9	22.0	V	0	100	40.0	18.0
580.986	3.0	16.6	5.3	24.9	V	0	100	46.0	21.1
PK									
1198.960	-41.0	24.4	66.4	49.8	H	0	100	74	24.2
1398.960	-40.8	24.3	66.6	50.1	H	20	100	74	23.9
2391.260	-40.2	28.3	61.7	49.8	H	0	100	74	24.2
2661.026	-39.6	29.6	57.8	47.8	H	0	100	74	26.2
3193.286	-39.0	30.4	55.5	46.9	H	0	100	74	27.1
4456.201	-39.2	33.7	54.2	48.7	H	20	100	74	25.3
1197.490	-41.0	24.4	65.5	48.9	V	0	100	74	25.1
1398.260	-40.8	24.3	63.4	46.9	V	10	100	74	27.1
1713.496	-40.5	26.7	57.4	43.6	V	0	100	74	30.4
3192.280	-39.0	30.4	54.3	45.7	V	70	100	74	28.3
4439.782	-39.3	33.7	52.4	46.8	V	60	100	74	27.2
5994.926	-38.2	34.2	51.8	47.8	V	50	100	74	26.2
AV									
1198.960	-41.0	24.4	49.2	32.6	H	0	100	54	21.4
1398.960	-40.8	24.3	50.1	33.6	H	20	100	54	20.4
2391.260	-40.2	28.3	44.7	32.8	H	0	100	54	21.2
2661.026	-39.6	29.6	39.7	29.7	H	0	100	54	24.3
3193.286	-39.0	30.4	37.5	28.9	H	0	100	54	25.1
4456.201	-39.2	33.7	36.1	30.6	H	20	100	54	23.4
1197.490	-41.0	24.4	46.3	29.7	V	0	100	54	24.3
1398.260	-40.8	24.3	45.0	28.5	V	10	100	54	25.5
1713.496	-40.5	26.7	40.3	26.5	V	0	100	54	27.5
3192.280	-39.0	30.4	39.3	30.7	V	70	100	54	23.3
4439.782	-39.3	33.7	35.8	30.2	V	60	100	54	23.8
5994.926	-38.2	34.2	35.2	31.2	V	50	100	54	22.8

Radiated Emission

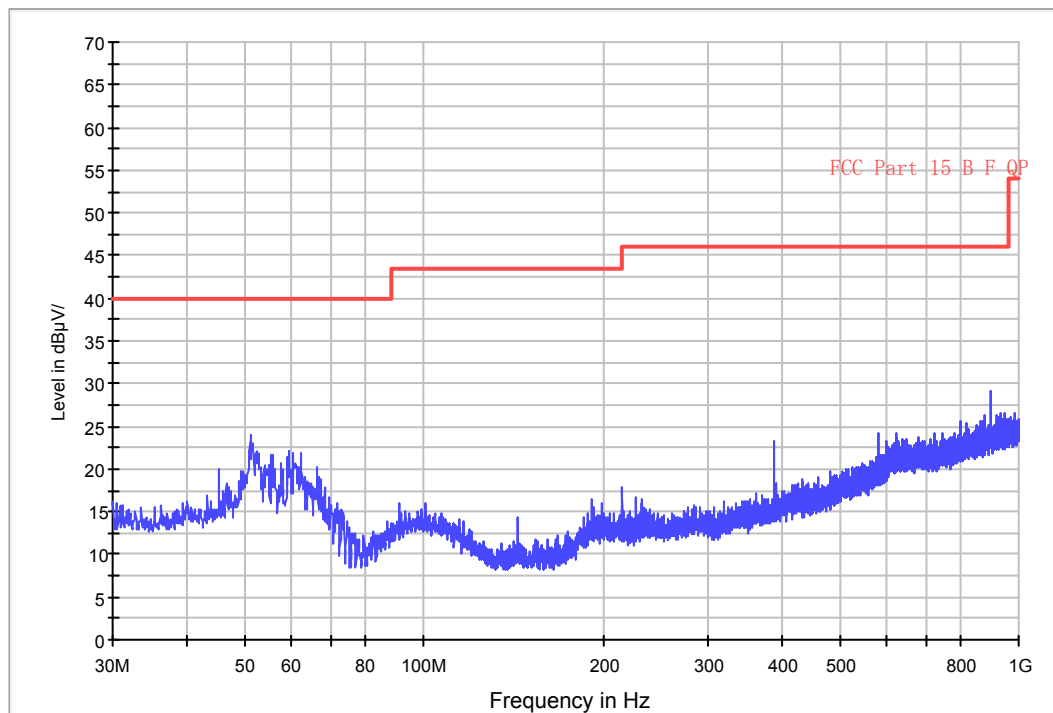
EUT Information

EUT Model name: HUAWEI Y560-U23
Operator Mode: Data transmitter with PC USB port
Comment:

Common Information

Test Description: SMQ NETC EMC Lab.3m Chamber
Customer
Antenna Position: Horizontal
Operator Name:
Comment1: AC 120V/60Hz
Comment2:

Field strength 30M-1GHz 1F 3m chamber



Radiated Emission

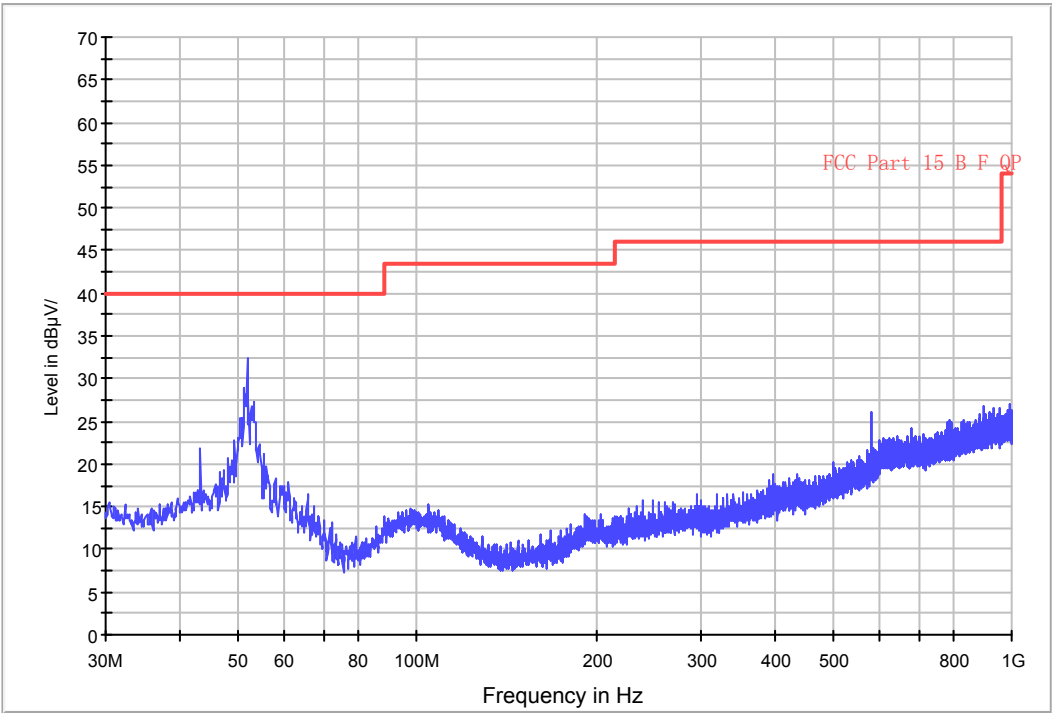
EUT Information

EUT Model name:	HUAWEI Y560-U23
Operator Mode:	Data transmitter with PC USB port
Comment:	

Common Information

Test Description:	SMQ NETC EMC Lab.3m Chamber
Customer	
Antenna Position:	Vertical
Operator Name:	
Comment1:	AC 120V/60Hz
Comment2:	

Field strength 30M-1GHz 1F 3m chamber



Radiated Emission

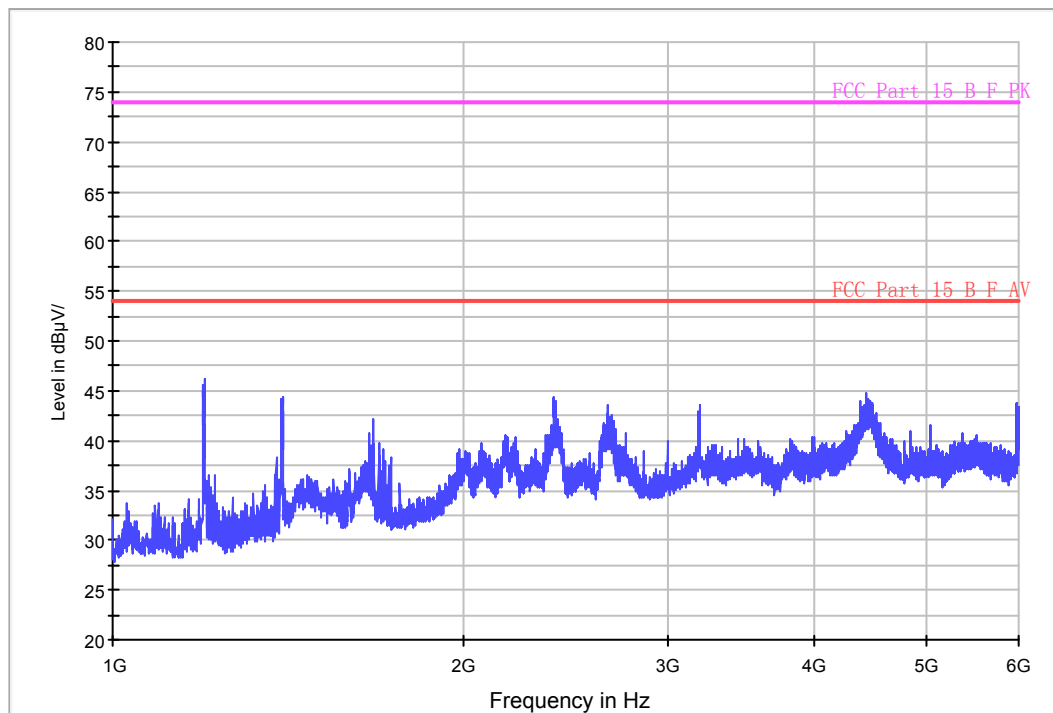
EUT Information

EUT Model name: HUAWEI Y560-U23
Operator Mode: Data transmitter with PC USB port
Comment:

Common Information

Test Description: SMQ NETC EMC Lab.3m Chamber
Customer
Antenna Position: Horizontal
Operator Name:
Comment1: AC 120V/60Hz
Comment2:

Field strength 1-6GHz 1F 3m chamber



Radiated Emission

EUT Information

EUT Model name: HUAWEI Y560-U23
Operator Mode: Data transmitter with PC USB port
Comment:

Common Information

Test Description: SMQ NETC EMC Lab.3m Chamber
Customer
Antenna Position: Vertical
Operator Name:
Comment1: AC 120V/60Hz
Comment2:

Field strength 1-6GHz 1F 3m chamber

