



FCC Test Report FCC ID: ZSW-10-043

Product: Mobile Phone

Trade Mark: Bmobile

Model Number: K390

Family Model: N/A

Report No.: S21110503101001

Prepared for

b mobile HK Limited
Flat 18; 14/F Block 1; Golden Industrial Building;16-26 Kwai Tak Street;
Kwai Chung;New Territories; Hong Kong, China

Prepared by

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TEST RESULT CERTIFICATION

Applicant's name	b mobile H	IK Limited
Address	-	JF Block 1; Golden Industrial Building;16-26 Kwai Takai Chung;New Territories; Hong Kong, China
Manufacturer's Name	b mobile H	IK Limited
Address		JF Block 1; Golden Industrial Building;16-26 Kwai Tak ai Chung;New Territories; Hong Kong, China
Product description		
Product name	Mobile Pho	one
Model and/or type reference	K390	
Family Model	. N/A	
Standards	FCC Part1 ANSI C63.	5B 4:2014
	in compliar	sted by NTEK, and the test results show that the nce with Part 15 of FCC Rules. And it is applicable only rt.
· ·	•	ot in full, without the written approval of NTEK, this TEK, personnel only, and shall be noted in the revision
Date of Test	:	
Date (s) of performance of test	s:	Nov 05. 2021 ~ Nov 23. 2021
Date of Issue	:	Nov 24. 2021
Test Result	:	Pass
Testing Engin	eer : -	Hen lin
		(Allen Liu)
Authorized Si	gnatory :	(Alex Li)
		(MICA LI)

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1. TEST SUMMARY

Test procedures according to the technical standards:

EMC Emission							
Standard	Test Item	Limit	Judgment	Remark			
FCC Part15B	Conducted Emission	Class B	PASS				
ANSI C63.4: 2014	Radiated Emission	Class B	PASS				

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report
- (2) For client's request and manual description, the test will not be executed.

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1.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd

Add.: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

FCC Registration Number:463705; IC Registration Number:9270A-1

CNAS Registration Number:L5516

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $\mathbf{y} \pm \mathbf{U}$, where expended uncertainty \mathbf{U} is based on a standard uncertainty multiplied by a coverage factor of $\mathbf{k=2}$, providing a level of confidence of approximately 95 %.

Test Item	Measurement Frequency Range	К	U(dB)
AC Mains Conducted Emission	0.009kHz ~ 0.15MHz	2	2.66
AC Mains Conducted Emission	0.15MHz ~ 30MHz	2	2.80
Telecom Conducted Emission (Cat 3)	0.15MHz ~ 30MHz	2	2.40
Telecom Conducted Emission (Cat 5)	0.15MHz ~ 30MHz	2	2.58
Radiated Emission	30MHz ~ 1000MHz	2	2.64
Radiated Emission	1000MHz ~ 6000MHz	2	5.10
Radiated Emission	6000MHz ~ 18000MHz	2	2.52
Power Clamp	30MHz ~ 300MHz	2	2.20





2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Mobile Phone				
Trade Mark	Bmobile				
Model Name	K390				
Family Model	N/A				
Model Difference	N/A				
	The EUT is a Mobile Phone .				
Product Description	Connecting I/O port:	Micro USB, Earphone			
Froduct Description	Operation Frequency:	2.570GHz			
	Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.				
Power Source	DC 3.7V/600mAh from battery or DC 5V from Adapter.				
Adapter	Input: AC 100-240V~50-60Hz 0.15A Output: DC 5.0V === 500mA				
HW Version	Bmobile_K390_HW_V1.0				
SW Version	Bmobile_K390_OM_LAT	TAM_V001			





2.1.1 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	TF card Playing
Mode 2	REC
Mode 3	FM
Mode 4	USB data transmission

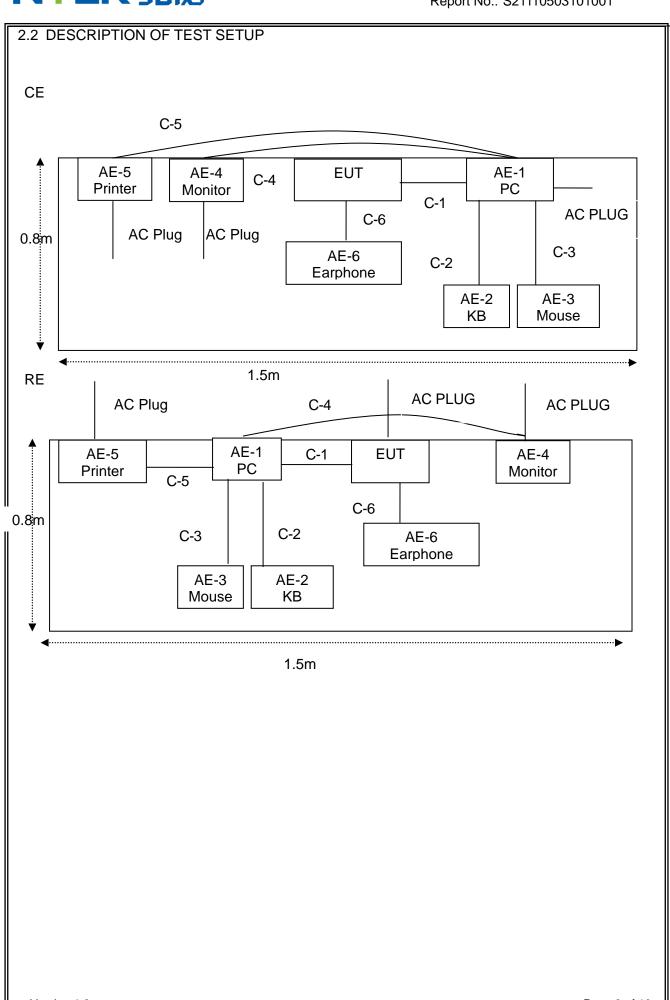
For Conducted Test			
Final Test Mode	Description		
Mode 4	USB data transmission		

For Radiated Test				
Final Test Mode	Description			
Mode 4	USB data transmission			

Note: Final Test Mode: Through Pre-scan, find the mode 4 is the worst case. Only the worst case mode is recorded in the report.











2.3 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No. Series No.		Note
AE-1	PC	DELL	FT4Y23X	N/A	Peripherals
AE-2	KB	N/A	N/A	N/A	Peripherals
AE-3	Mouse	DELL	MS111-P	N/A	Peripherals
AE-4	Monitor	N/A	N/A	N/A	Peripherals
AE-5	Printer	Canon	L11121E	N/A	Peripherals
AE-6	Earphone	N/A	N/A	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length	Note
C-1	USB Cable	NO	NO	1.0m	
C-2	USB Cable	NO	ОИ	1.2m	
C-3	USB Cable	NO	NO	1.2m	
C-4	HDMI Cable	YES	YES	1.0m	
C-5	USB Cable	NO	NO	1.2m	
C-6	Earphone Cable	NO	NO	1.2m	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in <code>"Length_"</code> column.
- (3) "YES" means "shielded" "with core"; "NO" means "unshielded" "without core".

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2.4 MEASUREMENT INSTRUMENTS LIST

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibratio n period
1	Spectrum Analyzer	Agilent	E4407B	MY4510804 0	2021.04.27	2022.04.26	1 year
2	Test Receiver	R&S	ESPI	101318	2021.04.27	2022.04.26	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2021.03.29	2022.03.28	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	620026441 6	2021.04.27	2022.04.26	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2021.04.27	2022.04.26	1 year
6	Horn Antenna	EM	EM-AH-101 80	2011071402	2021.03.29	2022.03.28	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2021.04.27	2022.04.26	1 year
8	Amplifier	EMC	EMC05183 5SE	980246	2021.04.27	2022.04.26	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2021.04.27	2022.04.26	1 year
10	Power Meter	DARE	RPR3006W	15I00041S NO84	2021.04.27	2022.04.26	1 year
11	Power Sensor	R&S	URV4-Z4	0395.1619. 05	2021.04.27	2022.04.26	1 year
12	Test Cable (30MHz-1GH z)	N/A	R-02	N/A	2019.06.28	2022.06.27	3 year
13	High Test Cable(1G-40 GHz)	N/A	R-03	N/A	2019.06.28	2022.06.27	3 year
14	High Test Cable(1G-40 GHz)	N/A	R-04	N/A	2019.06.28	2022.06.27	3 year
15	Test Receiver	R&S	ESCI	101160	2021.04.27	2022.04.26	1 year

AC Conduction Test equipment

Item	Kind of	Manufactu	Type No.	Serial No.	Last	Calibrated	Calibratio
	Equipment	rer			calibration	until	n period
1	Test Receiver	R&S	ESCI	101160	2021.04.27	2022.04.26	1 year
2	LISN	R&S	ENV216	101313	2021.04.27	2022.04.26	1 year
3	LISN	SCHWAR ZBECK	NNLK 8129	8129245	2021.04.27	2022.04.26	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	620098370 4	2020.05.11	2023.05.10	3 year
5	Test Cable (9KHz-30MHz)	N/A	C01	N/A	2020.05.11	2023.05.10	3 year
6	Test Cable (9KHz-30MHz)	N/A	C02	N/A	2020.05.11	2023.05.10	3 year
7	Test Cable (9KHz-30MHz)	N/A	C03	N/A	2020.05.11	2023.05.10	3 year

Note: Each piece of equipment is scheduled for calibration once a year except the Test Cable which is scheduled for calibration every 3 years.

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3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

EDEOLIENCY (MH-)	Class A	(dBuV)	Class B (dBuV)		
FREQUENCY (MHz)	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	
0.50 -5.0	73.00	60.00	56.00	46.00	
5.0 -30.0	73.00	60.00	60.00	50.00	

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

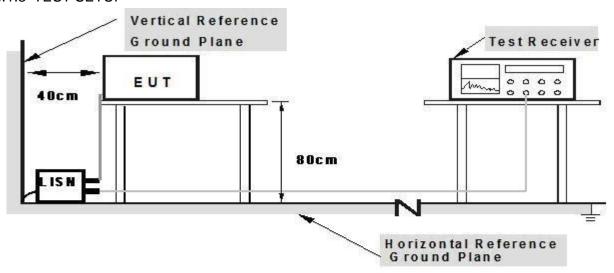




3.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the
 - cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 TEST SETUP



Note: 1. Support units were connected to second LISM.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

3.1.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.3** Unless otherwise a special operating condition is specified in the follows during the testing.

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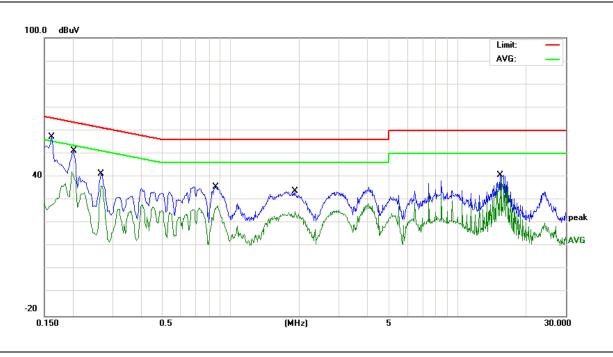
3.1.5 TEST RESULTS

EUT:	Mobile Phone	Model Name. :	K390	
Temperature:	22.1 ℃	Relative Humidity:	53%	
Pressure:	1010hPa	Test Date:	2021-11-22	
Test Mode:	Mode 4	Phase :	L	
Test Voltage:	DC 5V from PC (AC 120V/60Hz)			

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1620	47.40	9.71	57.11	65.36	-8.25	QP
0.1620	37.31	9.71	47.02	55.36	-8.34	AVG
0.2020	41.74	9.63	51.37	63.52	-12.15	QP
0.2020	31.72	9.63	41.35	53.52	-12.17	AVG
0.2660	31.77	9.63	41.40	61.24	-19.84	QP
0.2660	21.93	9.63	31.56	51.24	-19.68	AVG
0.8579	25.99	9.74	35.73	56.00	-20.27	QP
0.8579	15.91	9.74	25.65	46.00	-20.35	AVG
1.9179	24.07	9.76	33.83	56.00	-22.17	QP
1.9179	13.60	9.76	23.36	46.00	-22.64	AVG
15.4059	31.07	9.83	40.90	60.00	-19.10	QP
15.4059	20.75	9.83	30.58	50.00	-19.42	AVG

Remark:

- 1. All readings are Quasi-Peak and Average values.
- 2. Factor = Insertion Loss + Cable Loss.



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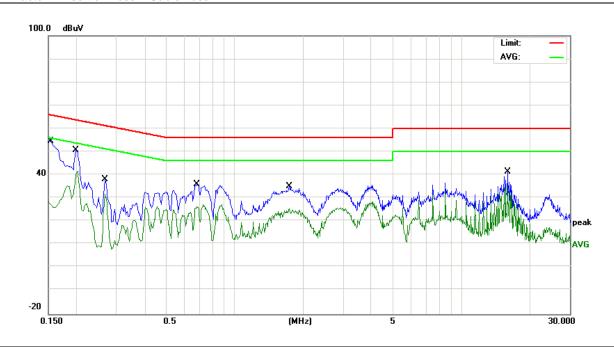


EUT:	Mobile Phone	Model Name.:	K390	
Temperature:	22.1 ℃	Relative Humidity:	53%	
Pressure:	1010hPa	Test Date:	2021-11-22	
Test Mode:	Mode 4	Phase :	N	
Test Voltage:	DC 5V from PC(AC 120V/60Hz)			

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1539	44.97	9.63	54.60	65.78	-11.18	QP
0.1539	34.73	9.63	44.36	55.78	-11.42	AVG
0.1980	41.01	9.63	50.64	63.69	-13.05	QP
0.1980	30.93	9.63	40.56	53.69	-13.13	AVG
0.2660	28.29	9.65	37.94	61.24	-23.30	QP
0.2660	17.93	9.65	27.58	51.24	-23.66	AVG
0.6820	26.18	9.65	35.83	56.00	-20.17	QP
0.6820	16.04	9.65	25.69	46.00	-20.31	AVG
1.7379	25.29	9.69	34.98	56.00	-21.02	QP
1.7379	15.56	9.69	25.25	46.00	-20.75	AVG
15.9658	31.67	9.73	41.40	60.00	-18.60	QP
15.9658	21.81	9.73	31.54	50.00	-18.46	AVG

Remark:

- All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.







3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

EDECLIENCY (MH-)	Class A (at 10m)	Class B (at 3m)	
FREQUENCY (MHz)	dBuV/m	dBuV/m	
30 ~ 88	39.0	40.0	
88 ~ 216	43.5	43.5	
216 ~ 960	46.5	46.0	
Above 960	49.5	54.0	

Notes:

- (1) The limit for radiated test was performed according to as following: FCC PART 15B /ICES-003.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

3.2.2 TEST PROCEDURE

Test Arrangement for Radiated Emissions up to 1 GHz

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited test facility. 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 antenna is a broadband antenna, and its height 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.

Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for quasi-peak detection (QP) at frequency below 1GHz.

Test Arrangement for Radiated Emissions above 1 GHz.

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at an accredited 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. The height of antenna can be varied from one meter to four meters, the height of adjustment depends on the EUT height and the antenna 3dB beamwidth both, to detect 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

Note: For the hand-held device, the EUT should be measured for all 3 axes and only the worst case is recorded in the report

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

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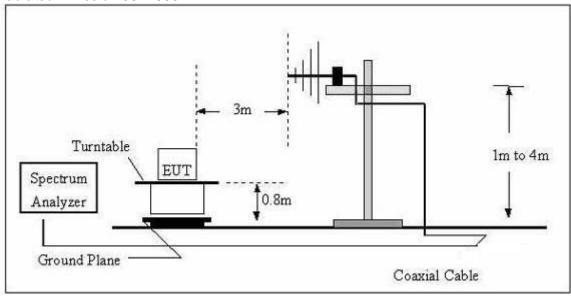




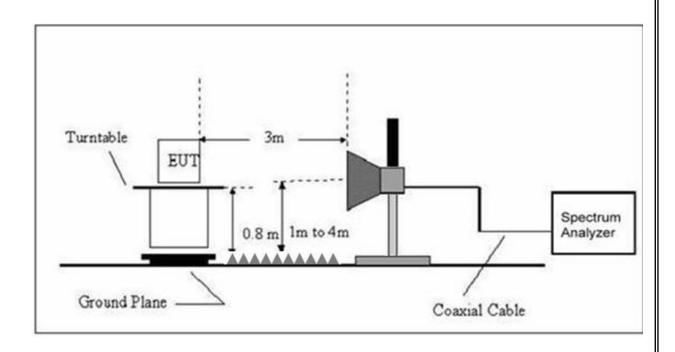
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
	Peak	1 MHz	1 MHz
Above 1000	Avg	1 MHz	1 MHz

3.2.3 TEST SETUP

For Radiated Emission 30~1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1GHz







3.2.4 TEST RESULTS

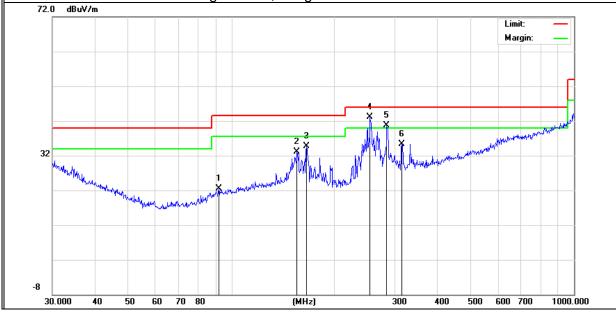
TEST RESULTS (30~1000 MHz)

EUT:	Mobile Phone	Model Name:	K390	
Temperature:	25.2 ℃	Relative Humidity:	50%	
Pressure:	1010 hPa	Test Date :	2021-11-22	
Test Mode :	Mode 4	Polarization :	Horizontal	
Test Power :	DC 5V from PC (AC 120V/60Hz)			

Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	rterrierr
Н	91.8162	6.21	16.34	22.55	43.50	-20.95	QP
Н	155.3643	14.52	18.49	33.01	43.50	-10.49	QP
Н	165.4866	16.79	17.86	34.65	43.50	-8.85	QP
Н	253.8367	22.01	21.03	43.04	46.00	-2.96	QP
Н	283.9791	19.66	21.01	40.67	46.00	-5.33	QP
Н	314.3765	13.32	22.02	35.34	46.00	-10.66	QP

Remark:

Emission Level= Meter Reading+ Factor, Margin= Emission Level- Limit.



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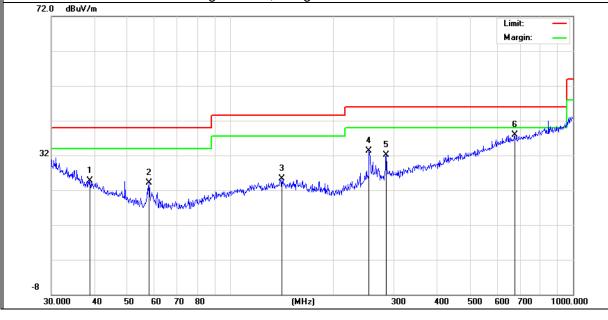


EUT:	Mobile Phone	Model Name :	K390	
Temperature:	25.2 ℃	Relative Humidity:	50%	
Pressure:	1010 hPa	Test Date :	2021-11-22	
Test Mode:	Mode 4	Polarization:	Vertical	
Test Power:	DC 5V from PC (AC 120V/60Hz)			

Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	remark
V	38.8878	5.64	19.05	24.69	40.00	-15.31	QP
V	57.7962	12.20	11.99	24.19	40.00	-15.81	QP
V	141.3298	6.02	19.28	25.30	43.50	-18.20	QP
V	253.8367	12.19	21.03	33.22	46.00	-12.78	QP
V	284.9767	10.88	21.13	32.01	46.00	-13.99	QP
V	675.2080	7.13	30.83	37.96	46.00	-8.04	QP

Remark:

Emission Level= Meter Reading+ Factor, Margin= Emission Level- Limit.







3.2.5 TEST RESULTS(1000~18000MHz)

EUT:	Mobile Phone	Model Name :	K390				
Temperature:	25.4℃	Relative Humidity:	56%				
Pressure:	1010 hPa	Test Date :	2021-11-22				
Test Mode :	Mode 4						
Test Power:	DC 5V from PC(AC 120V/60Hz)						

All the modulation modes have been tested, and the worst result was report as below:

Polar (H/V)	Frequency	Reading	Correct	Result	Limit	Over Limit	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
V	1850.000	38.34	4.08	42.42	74.00	-31.58	peak
V	1850.000	27.97	4.08	32.05	54.00	-21.95	AVG
V	2190.000	39.01	5.32	44.33	74.00	-29.67	peak
V	2190.000	28.83	5.32	34.15	54.00	-19.85	AVG
V	2742.500	39.62	7.29	46.91	74.00	-27.09	peak
V	2742.500	28.96	7.29	36.25	54.00	-17.75	AVG
V	2955.000	38.52	8.56	47.08	74.00	-26.92	peak
V	2955.000	28.55	8.56	37.11	54.00	-16.89	AVG
V	4060.000	35.40	11.31	46.71	74.00	-27.29	peak
V	4060.000	25.25	11.31	36.56	54.00	-17.44	AVG
V	5547.500	33.93	13.49	47.42	74.00	-26.58	peak
V	5547.500	23.29	13.49	36.78	54.00	-17.22	AVG
Н	1552.500	37.56	2.74	40.30	74.00	-33.70	peak
Н	1552.500	27.51	2.74	30.25	54.00	-23.75	AVG
Н	2020.000	37.20	4.76	41.96	74.00	-32.04	peak
Н	2020.000	26.26	4.76	31.02	54.00	-22.98	AVG
Н	2530.000	38.09	6.39	44.48	74.00	-29.52	peak
Н	2530.000	27.72	6.39	34.11	54.00	-19.89	AVG
Н	2955.000	37.41	8.56	45.97	74.00	-28.03	peak
Н	2955.000	27.09	8.56	35.65	54.00	-18.35	AVG
Н	4357.500	34.21	11.67	45.88	74.00	-28.12	peak
Н	4357.500	24.35	11.67	36.02	54.00	-17.98	AVG
Н	5462.500	32.49	13.41	45.90	74.00	-28.10	peak
Н	5462.500	16.84	13.41	30.25	54.00	-23.75	AVG

Remark:

Result = Reading+ Correct, Over Limit = Result - Limit

Note: Only the worst results data points are reported in the report.

Other emissions are attenuated more than 20dB below the permissible limits,

so it does not recorded in the report.

END OF REPORT

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