

# Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Report No: CCISE191206303

# FCC REPORT

**Applicant:** b mobile HK Limited

Address of Applicant: Flat 18; 14/F Block 1; Golden Industrial Building; 16-26 Kwai Tak

Street; Kwai Chung; New Territories; Hong Kong

**Equipment Under Test (EUT)** 

Product Name: Mobile Phone

Model No.: C215

Trade mark: Bmobile

FCC ID: ZSW-10-022

Applicable standards: FCC CFR Title 47 Part 15 Subpart B

Date of sample receipt: 13 Dec., 2019

**Date of Test:** 14 Dec., 2019 to 09 Mar., 2020

Date of report issued: 09 Mar., 2020

Test Result: PASS \*

#### Authorized Signature:



Bruce Zhang Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



### 2 Version

Version No.	Date	Description
00	09 Mar., 2020	Original

Tested by:	Test Engineer	Date:	09 Mar., 2020	
	•			

Reviewed by:

| Date: 09 Mar., 2020 | Project Engineer | Date: 09 Mar., 2020 | Date: 09



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## 4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part 15.107	Pass
Radiated Emission	Part 15.109	Pass
Domorke		

#### Remark:

- 1. Pass: The EUT complies with the essential requirements in the standard.
- 2. N/A: The EUT not applicable of the test item.

Test Method: ANSI C63.4:2014



### 5 General Information

#### 5.1 Client Information

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

### 5.2 General Description of E.U.T.

_	
Product Name:	Mobile Phone
Model No.:	C215
Hardware version:	Bmobile_C215_HW_V1.0
Software version:	Bmobile_C215_SW_V01
Power supply:	Rechargeable Li-ion Battery DC3.7V, 600mAh
AC adapter:	Input: AC100-240V, 50/60Hz, 0.2A
	Output: DC 5.0V, 0.5A
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

#### 5.3 Test Mode

Operating mode	Detail description
PC mode	Keep the EUT in Downloading mode(Worst case)
Charging+Recording mode	Keep the EUT in Charging+Recording mode
Charging+Playing mode	Keep the EUT in Charging+Playing mode
FM mode	Keep the EUT in FM receiver mode

The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

### **5.4 Measurement Uncertainty**

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±1.60 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±3.12 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.32 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.38 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±3.36 dB (k=2)

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### 5.5 Description of Support Units

Manufacturer	Description	Model Serial Number		FCC ID/DoC
DELL	PC	OPTIPLEX7070	OPTIPLEX7070 2J8XSZ2	
DELL	MONITOR	SE2018HR	3M7QPY2	DoC
DELL	KEYBOARD	KB216d	N/A	DoC
DELL	MOUSE	MS116t1	N/A	DoC
HP	Printer	HP LaserJet P1007	HP LaserJet P1007 VNFP409729	

### 5.6 Related Submittal(s) / Grant (s)

This is an original grant, no related submittals and grants.

### 5.7 Description of Cable Used

Cable Type	Cable Type Description		From	То
Itegrated USB Cable	Unshielded	1.0m	EUT	Adapter
Detached headset cable	Unshielded	0.8m	EUT	Headset

### 5.8 Additions to, deviations, or exclusions from the method

No

### 5.9 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### FCC - Designation No.: CN1211

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

#### ● ISED - CAB identifier.: CN0021

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

#### • CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

#### A2LA - Registration No.: 4346.01

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/4346-01.pdf">https://portal.a2la.org/scopepdf/4346-01.pdf</a>

### 5.10 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366





### **5.11 Test Instruments list**

Radiated Emission:						
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)	
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020	
Loop Antenna	SCHWARZBECK	FMZB1519B	00044	03-18-2019	03-17-2020	
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-18-2019	03-17-2020	
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-18-2019	03-17-2020	
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020	
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-18-2019	11-17-2020	
EMI Test Software	AUDIX	E3	Version: 6.110919b			
Pre-amplifier	HP	8447D	2944A09358	03-18-2019	03-17-2020	
Pre-amplifier	CD	PAP-1G18	11804	03-18-2019	03-17-2020	
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-18-2019	03-17-2020	
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-18-2019	11-17-2020	
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-18-2019	03-17-2020	
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-18-2019	03-17-2020	
Cable	MICRO-COAX	MFR64639	K10742-5	03-18-2019	03-17-2020	
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-18-2019	03-17-2020	

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-18-2019	03-17-2020
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-18-2019	03-17-2020
LISN	CHASE	MN2050D	1447	03-18-2019	03-17-2020
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2017	07-20-2020
Cable	HP	10503A	N/A	03-18-2019	03-17-2020
EMI Test Software	AUDIX	E3	,	Version: 6.110919	b



### 6 Test results and Measurement Data

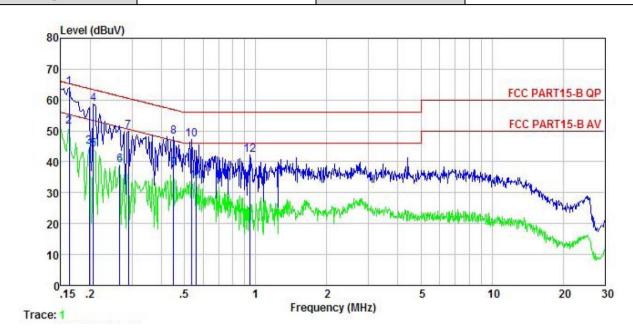
### **6.1 Conducted Emission**

Test Requirement:	FCC Part 15 B Section 15.107					
Test Frequency Range:	150kHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9kHz, VBW=30kHz					
Limit:	Frequency range (MHz)		(dBµV)			
	,	Quasi-peak	Average			
	0.15-0.5	66 to 56*	56 to 46*			
	0.5-5	56	46			
	0.5-30	60	50			
	* Decreases with the logarithm	of the frequency.				
Test setup:	Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m	Filter — AC power				
Test procedure	<ol> <li>The E.U.T and simulators are connected to the main power through a line impedance stabilization network(L.I.S.N.). The provide a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs).</li> <li>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4(latest version) on conducted measurement.</li> </ol>					
Test Instruments:	Refer to section 5.11 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Pass					



#### Measurement data:

Product name:	Mobile Phone	Product model:	C215
Test by:	YT	Test mode:	PC mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Huni: 55%



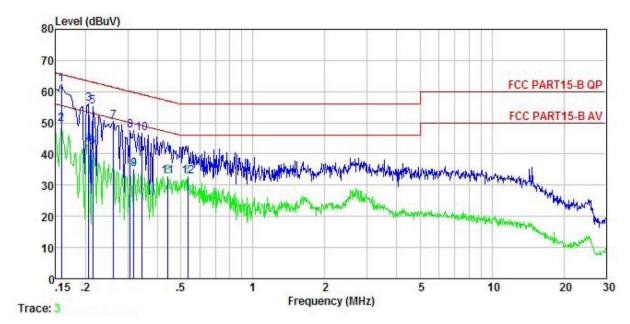
	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBu₹	<u>db</u>	₫B	dB	dBu₹	dBu₹	<u>d</u> B	
1	0.162	53.85	-0.44	-0.08	10.77	64.10	65.34	-1.24	
2	0.162	41.12	-0.44	-0.08	10.77	51.37	55.34	-3.97	Average
3	0.198	34.62	-0.41	-0.16	10.76	44.81	53.71	-8.90	Average
4	0.206	48.62	-0.41	-0.17	10.76	58.80	63.36	-4.56	QP
1 2 3 4 5 6 7 8 9	0.206	33.82	-0.41	-0.17	10.76	44.00	53.36	-9.36	Average
6	0.266	28.95	-0.39	-0.23	10.75	39.08	51.25	-12.17	Average
7	0.289	39.72	-0.39	-0.25	10.74	49.82	60.54	-10.72	QP
8	0.449	37.87	-0.38	0.02	10.74	48.25	56.89	-8.64	QP
9	0.449	27.30	-0.38	0.02	10.74	37.68	46.89	-9.21	Average
10	0.538	37.29	-0.39	-0.36	10.76	47.30	56.00		
11	0.561	23.74	-0.39	-0.37	10.76	33.74	46.00	-12.26	Average
12	0.943	31.43	-0.38	0.30	10.85	42.20		-13.80	

#### Notes

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss.



Product name:	Mobile Phone	Product model:	C215
Test by:	YT	Test mode:	PC mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Huni: 55%



	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
_	MHz	dBu∀	<u>dB</u>	<u>ā</u> B		dBu₹	dBu₹		
1	0.158	52.29	-0.68	0.01	10.77	62.39	65.56	-3.17	QP
1 2 3 4 5 6 7 8 9	0.158	39.37	-0.68	0.01	10.77	49.47	55.56	-6.09	Average
3	0.206	45.93	-0.69	0.00	10.76	56.00	63.36	-7.36	
4	0.206	32.92	-0.69	0.00	10.76	42.99	53.36	-10.37	Average
5	0.214	45.15	-0.68	0.00	10.76	55.23	63.05	-7.82	QP
6	0.214	32.03	-0.68	0.00	10.76	42.11	53.05	-10.94	Average
7	0.262	40.26	-0.65	0.01	10.75	50.37		-11.01	
8	0.307	37.55	-0.63	0.00	10.74	47.66	60.06	-12.40	QP
9	0.318	24.90	-0.63	-0.01	10.74	35.00	49.75	-14.75	Average
10	0.343	36.59	-0.63	-0.02	10.73	46.67	59.13	-12.46	QP
11	0.442	22.61	-0.64	-0.02	10.74	32.69	47.02	-14.33	Average
12	0.535	22.55	-0.65	0.03	10.76	32.69			Average

#### Notes

- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss.



### 6.2 Radiated Emission

Test Requirement:	FCC Part 15 B Se	FCC Part 15 B Section 15.109						
Test Frequency Range:	30MHz to 6000M	Hz						
Test site:	Measurement Dis	stance: 3m (	Sem	i-Anechoic (	Chamber)	)		
Receiver setup:	Frequency	Detecto	r	RBW	VBW	Remark		
receiver cetap.	30MHz-1GHz	Quasi-pe		120kHz	300kHz			
	Above 1GHz	Peak		1MHz	3MHz			
	Above IGHZ	RMS		1MHz	3MHz	Average Value		
Limit:	Frequenc	•	Lim	nit (dBuV/m	@3m)	Remark		
	30MHz-88N			40.0		Quasi-peak Value		
	88MHz-216I			43.5		Quasi-peak Value		
	216MHz-960			46.0		Quasi-peak Value		
	960MHz-10	iΗZ		54.0		Quasi-peak Value		
	Above 1GI	Hz -		54.0		Average Value		
Test setup:				74.0		Peak Value		
	Tum 0.8m Table 0.8m A Ground Plane — Above 1GHz	4m	7777.	RFT				
	Horn Antenna Tower  Ground Reference Plane  Test Receiver  Test Receiver  Controller							
Test Procedure:	<ol> <li>The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>The antenna 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.</li> </ol>							





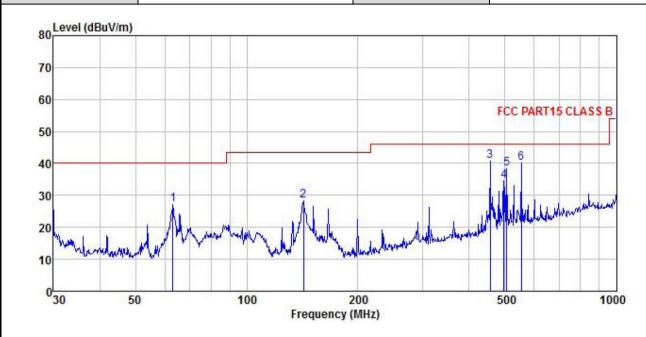
	<ul> <li>4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>6. If the emission level of the EUT is peak mode was 10dR lever than the</li> </ul>
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 5.11 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	All of the observed value above 6GHz ware the niose floor , which were no recorded



#### **Measurement Data:**

#### **Below 1GHz:**

Product Name:	Mobile Phone	Product Model:	C215
Test By:	YT	Test mode:	PC mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



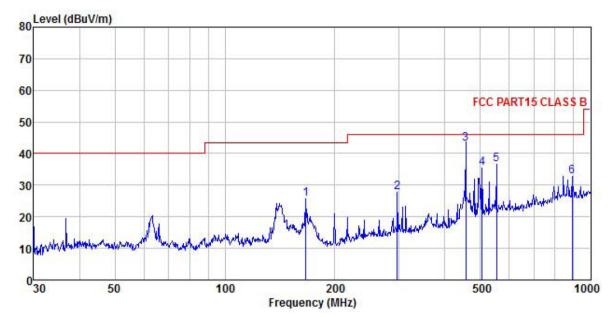
	Freq		Intenna Factor				Limit Line		Remark
_	MHz	dBu∀	dB/m	₫B	<u>d</u> B	$\overline{dBuV/m}$	dBuV/m	<u>dB</u>	
1	63.092	45.20	10.26	1.38	29.76	27.08	40.00	-12.92	QP
1 2 3 4 5	142.324	45.86	9.35	2.43	29.26	28.38	43.50	-15.12	QP
3	455.906	49.76	16.70	3.25	28.88	40.83	46.00	-5.17	QP
4	495.934	41.77	18.06	3.59	28.94	34.48	46.00	-11.52	QP
5	504.706	45.46	18.22	3.65	28.97	38.36	46.00	-7.64	QP
6	552.883	46.89	18.45	3.89	29.09	40.14	46.00	-5.86	QP

#### Remark:

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product Name:	Mobile Phone	Product Model:	C215
Test By:	YT	Test mode:	PC mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%
	<u> </u>		·



	Freq		Antenna Factor						Remark
	MHz	dBu∜	<u>dB</u> /π		<u>ab</u>	$\overline{dBuV/m}$	dBuV/m	<u>ab</u>	
1	166.651	42.47	9.52	2.64	29.08	25.55	43.50	-17.95	QP
2	296.184	39.78	13.54	2.93	28.46	27.79	46.00	-18.21	QP
2 3 4 5	455.906	51.92	16.70	3.25	28.88	42.99	46.00	-3.01	QP
4	504.706	42.58	18.22	3.65	28.97	35.48	46.00	-10.52	QP
5	552.883	43.37	18.45	3.89	29.09	36.62	46.00	-9.38	QP
6	890.728	34.49	22.52	3.80	27.90	32.91	46.00	-13.09	QP

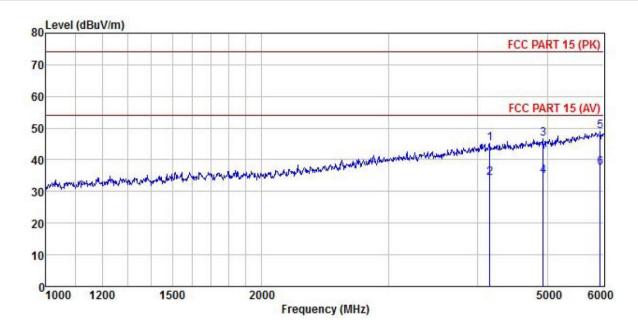
#### Remark:

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.



#### **Above 1GHz:**

Product Name:	Mobile Phone	Product Model:	C215
Test By:	YT	Test mode:	PC mode
Test Frequency:	1 GHz ~ 6 GHz	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



	Freq			Cable Loss			Limit	Over Limit	Remark
	MHz	dBu∜	— <u>d</u> B/m		<u>ab</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>	
1	4155.566	48.08	30.33	6.34	41.81	45.20	74.00	-28.80	Peak
2	4155.566	37.25	30.33	6.34	41.81	34.37	54.00	-19.63	Average
3	4935.518	47.86	31.26		41.86			-27.37	
4	4935.518	36.07	31.26	6.89	41.86	34.84	54.00	-19.16	Average
5	5925.216	47.71	32.69	7.92	42.04	49.05	74.00	-24.95	Peak
6	5925.216	36.23	32.69	7.92	42.04	37.57	54.00	-16.43	Average

#### Remark

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.



Product Name:		Mobile Phone				Product N	lodel:	C215	C215 PC mode		
est By:		YT 1 GHz ~ 6 GHz				Test mode	PC m				
est Freq	uency:					Polarization	on:	Horiz	Horizontal		
Test Voltage:		AC 120/60Hz				Environm	Temp	Temp: 24℃ Huni: 57%			
	and the second		Long Tour Colons Const				A TOTAL OF THE SECOND	A.C.			
80 Level	(dBuV/m)							FCC PART 15 (PK)			
70									CC PAR	1 15 (PK)	
70											
60									FCC PART 15 (AV		
50											
						1	3	est before the state of the same of the same	marken water to	Many of the Control	
40	ale and all the second specifications	. a season		Later of the state	prestigation was	1 Control of Character	- Take Wall and a day		6		
30	and a second production of the second					2					
20											
20											
10											
0											
1000	1200	1500	2	2000 Free	quency (M	Hz)			500	6000	
	Freq	ReadAntenna Level Factor						Over Limit Remark			
	MHz	dBu∇		V (2 / V (2 - 2 )		dBu√/m					
			4000								
1 2	2979.202 2979.202	46.88 36.39	28.56 28.56	5.33 5.33				-32.86 -23.35		ge.	
3	3690.292	46.65	29.42	5.98	41.66	42.59	74.00	-31.41	Peak		
	3690.292		29.42		41.66			-21.23		ge	
4	DESCRIPTION AND A SECOND	47.25	31.69		41.83			-27.58 -16.99			
4 5 6	4864.797	37.84	31.69	6.84	21 X 1	3 ( 111	204 1111	- ID 44	HUDERO	σe –	

#### Remark:

<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

<sup>2.</sup> The emission levels of other frequencies are very lower than the limit and not show in test report.