



# TEST REPORT

No. I21Z62218-EMC01

for

**vivo Mobile Communication Co., Ltd.**

**Mobile Phone**

**Model Name: V2127**

**FCC ID: 2AUCY-V2127V**

with

**Hardware Version: MP\_0.1**

**Software Version: PD2166EF\_EX\_A\_3.6.0**

**Issued Date: 2022-02-14**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I21Z62218-EMC01	Rev.0	1st edition	2022-02-14

Note: the latest revision of the test report supersedes all previous version.

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## **1. Test Laboratory**

### **1.1. Introduction & Accreditation**

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

### **1.2. Testing Location**

Location 1: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,  
P. R. China 100191

Location 4: CTTL (BDA)

Address: No.18A, Kangding Street, Beijing Economic-Technology  
Development Area, Beijing, P. R. China 100176

### 1.3. Testing Environment

Normal Temperature: 15-35℃  
Relative Humidity: 20-80%

### 1.4. Project data

Testing Start Date: 2022-01-15  
Testing End Date: 2022-02-10

### 1.5. Signature



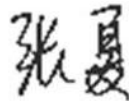
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Zhang Ying  
(Prepared this test report)



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An Hui  
(Reviewed this test report)



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Zhang Xia  
Deputy Director of the laboratory  
(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: vivo Mobile Communication Co., Ltd.  
Address /Post: No.168 Jinghai East Rd.,Chang'an, Dongguan, Guangdong,China  
Contact: xiangjianfeng  
Email: xiangjianfeng@vivo.com  
Telephone: 18823710059

### **2.2. Manufacturer Information**

Company Name: vivo Mobile Communication Co., Ltd.  
Address /Post: No.168 Jinghai East Rd.,Chang'an, Dongguan, Guangdong,China  
Contact: xiangjianfeng  
Email: xiangjianfeng@vivo.com  
Telephone: 18823710059

### **3. Equipment Under Test (EUT) and Ancillary Equipment (AE)**

#### **3.1. About EUT**

Description	Mobile Phone
Model	V2127
FCC ID	2AUCY-V2127V
Antenna	Embedded
Extreme vol. Limits	3.6VDC to 4.45VDC (nominal: 3.87VDC)
Extreme temp. Tolerance	-10°C to +55°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL.

#### **3.2. Internal Identification of EUT used during the test**

<b>EUT ID*</b>	<b>SN</b>	<b>HW Version</b>	<b>SW Version</b>	<b>Date of receipt</b>
UT01a	861904059958729/ 861904059958737	MP_0.1	PD2166EF_EX_A_3.6.0	2021-12-07
UT02a	861904059966409/ 861904059966417	MP_0.1	PD2166EF_EX_A_3.6.0	2021-12-07

\*EUT ID: is used to identify the test sample in the lab internally.

#### **3.3. Internal Identification of AE used during the test**

<b>AE ID*</b>	<b>Description</b>
AE1	Battery

AE1

Model	B-T6
Manufacturer	Dongguan NVT Technology Co.,Ltd
Capacitance	5000mAh

\*AE ID: is used to identify the test sample in the lab internally.

## **4. Reference Documents**

### **4.1. Documents supplied by applicant**

EUT parameters are supplied by the client or manufacturer, which are the bases of testing.

### **4.2. Reference Documents for testing**

The following documents listed in this section are referred for testing.

<b>Reference</b>	<b>Title</b>	<b>Version</b>
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-20 Edition
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB 971168 D01	Measurement Guidance for Certification of Licensed Digital Transmitters	v03r01



## 5. Laboratory Environment

**Shielding chamber** did not exceed following limits along the RF testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =20 %, Max. = 80 %

## 6. Summary Of Test Result

### CDMA 800

Items	List	Clause in FCC rules	Verdict
1	Output Power	22.913(a)	P
2	Emission Bandwidth	22.917(b)	P

Terms used in Verdict column

P	Pass. The EUT complies with the essential requirements in the standard.
NP	Not Performed. The test was not performed by CTTL.
NA	Not Applicable. The test was not applicable.
BR	Re-use test data from basic model report.
F	Fail. The EUT does not comply with the essential requirements in the standard.

All the test results are based on normal power.

ANT13 supports CDMA 800.

ANT41 supports CDMA 800.

### Explanation of worst-case configuration

The worst-case scenario for all measurements is based on the conducted output power measurement investigation results unless otherwise stated. The test results shown in the following sections represent the worst case emission. Output power is tested for each antenna. The other test cases only test the antenna with the worst value on output power, which are CDMA 800-ANT41.

## 7. Test Equipments Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Spectrum Analyzer	FSV30	101576	R&S	2022-05-09	1 Year
Wireless Communications Test Set	8960(E5515C)	MY48360950	Agilent	2022-10-01	25 Months
Climatic chamber	SH-242	93008556	ESPEC	2023-12-23	3 Years
Test Receiver	E4440A	MY48250642	Agilent	2022-03-04	1 year
Universal Radio Communication Tester	CMW500	143008	R&S	2022-12-01	1 year
EMI Antenna	VULB9163	9163-235	Schwarzbeck	2022-04-07	1 year
Signal Generator	N5183A	MY49060052	Agilent	2022-07-11	1 year
EMI Antenna	3117	00058889	ETS-Lindgren	2022-11-07	1 year
EMI Antenna	LB-7180-NF	2030013000041	A-INFO	2022-02-28	1 year

## **Annex A: Measurement Results**

### **A.1 Output Power**

#### **A.1.1 Summary**

During the process of testing, the EUT was controlled via Agilent Wireless Communications Test Set (8960(E5515C)) to ensure max power transmission and proper modulation.

This result is max output power conducted measurements for the EUT.

In all cases, output power is within the specified limits.

#### **A.1.2 Method of Measurements**

The EUT was set up for the max output power with pseudo random data modulation.

These measurements were done at 3 frequencies, 824.7MHz, 836.52MHz and 848.31MHz for CDMA 800 band (bottom, middle and top of operational frequency range) for each bandwidth.

#### **A1.3 Measurement results**

##### **CDMA 800-ANT13**

##### **Measurement result**

Channel	Frequency(MHz)	Channel power(dBm)		
		1x RTT	1xEVDO	
			Rel0	RevA
1013	824.70	19.92	19.87	19.95
384	836.52	19.98	19.87	19.95
777	848.31	19.91	19.89	19.92

##### **CDMA 800-ANT41**

##### **Measurement result**

Channel	Frequency(MHz)	Channel power(dBm)		
		1x RTT	1xEVDO	
			Rel0	RevA
1013	824.70	19.87	20.04	20.02
384	836.52	19.98	20.00	20.02
777	848.31	19.95	20.03	20.04



## **A.2 Emission Limit**

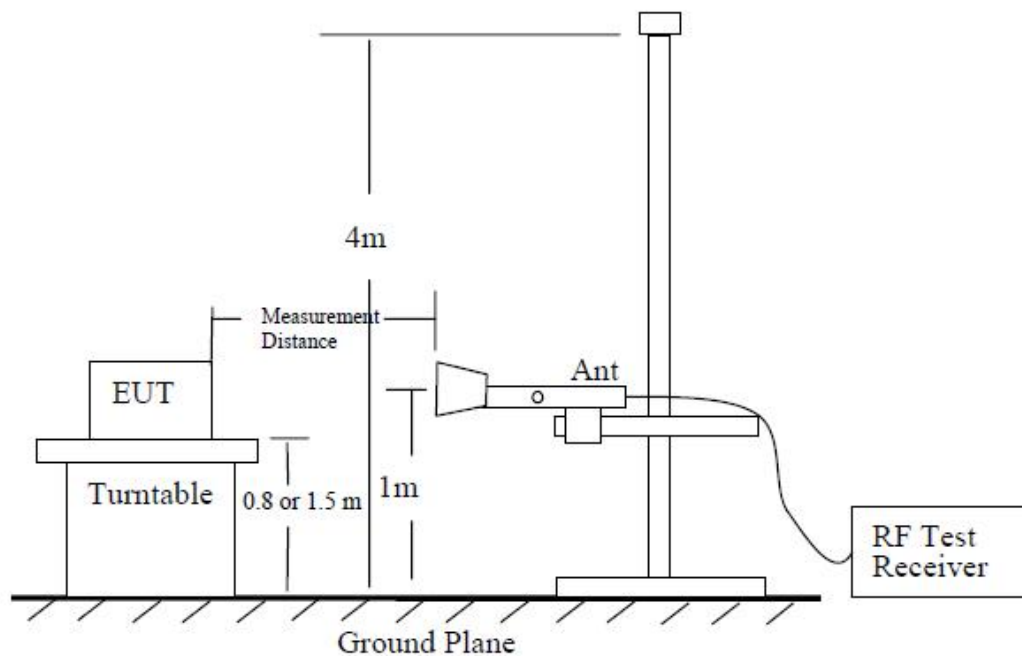
### **A.2.1 Measurement Method**

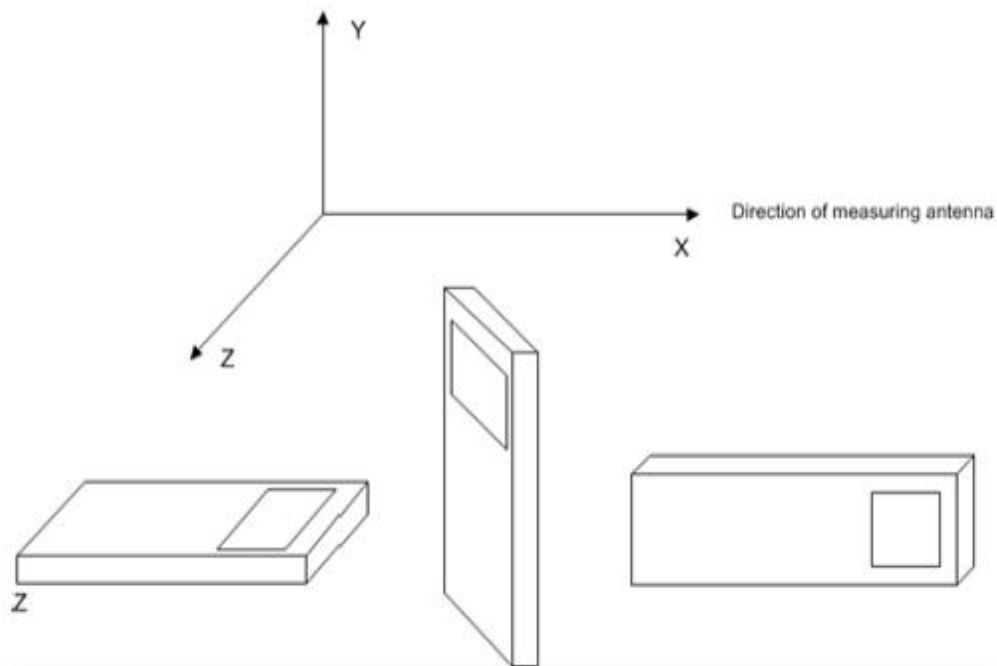
The measurements procedures in C63.26 are used.

The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment. The resolution bandwidth is set as outlined in Part 90.691. The spectrum is scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of CDMA BC(0).

#### **The procedure of radiated spurious emissions is as follows:**

Using the test configuration as follow, measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits.





The emission characteristics of the EUT can be identified from the pre-scan measurement information.

Exploratory radiated measurements (pre-scans) may be performed to determine the general EUT radiated emissions characteristics and, when necessary, the EUT-to-measurement antenna orientation that produces the maximum emission amplitude. Pre-scans shall only be used to determine the emission frequencies (i.e., not amplitude levels). The information garnered from a pre-scan can then be used to perform final compliance measurements using either the substitution or direct field strength method.

For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80 cm above the reference ground plane. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1 m to 4 m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e., field strength or received power). When orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25 cm.

The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.

For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table or support at a nominal height of 1.5 m above the ground plane. When maximizing the emissions from the EUT for measurement, the EUT and its transmitting antenna(s) shall be rotated through 360°. For each mode of operation to be tested, the frequency spectrum (based on findings from exploratory measurements) shall be monitored. Final measurements shall be performed for the worst case combination(s) of variable technical parameters that result in the maximum measured emission amplitude, record the frequency and amplitude of the highest fundamental emission (if applicable), and the frequency and amplitude data for the six highest-amplitude spurious emissions.

### A.2.2 Measurement Limit

**CDMA800 (BC0):** 22.917(a) specifies that the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

### A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the CDMA BC(0) band. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of the CDMA BC(0) into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this.

### A.2.4 Measurement Results Table

Frequency	Channel	Frequency Range	Result
CDMA BC(0)	Low	30MHz-10GHz	Pass
	Middle	30MHz-10GHz	Pass
	High	30MHz-10GHz	Pass



**Measurement Results:**
**CDMA BC(0) Mode Channel 384**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1682.01	-55.18	-3.59	5.17	2.15	-55.75	-13.00	42.70	H
2504.00	-46.64	-4.63	6.11	2.15	-47.31	-13.00	34.30	H
3351.02	-60.49	-5.32	7.84	2.15	-60.12	-13.00	47.10	H
4182.02	-57.90	-6.17	9.08	2.15	-57.14	-13.00	44.10	H
5020.01	-57.88	-6.57	9.93	2.15	-56.67	-13.00	43.70	V
5862.01	-57.11	-7.27	10.53	2.15	-56.00	-13.00	43.00	H

**CDMA BC(0) Mode Channel 777**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1692.01	-55.00	-3.59	5.15	2.15	-55.59	-13.00	42.60	H
2536.00	-46.45	-4.66	6.16	2.15	-47.10	-13.00	34.10	H
3392.02	-60.30	-5.35	7.94	2.15	-59.86	-13.00	46.90	H
4240.02	-57.00	-6.25	9.14	2.15	-56.26	-13.00	43.30	H
5090.01	-56.58	-6.74	10.03	2.15	-55.44	-13.00	42.40	V
5934.01	-55.68	-7.47	10.51	2.15	-54.79	-13.00	41.80	H

**CDMA BC(0) Mode Channel 1013**

Frequency (MHz)	P <sub>Mea</sub> (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1640.01	-54.45	-3.56	5.25	2.15	-54.91	-13.00	41.90	H
2476.00	-47.82	-4.60	6.03	2.15	-48.54	-13.00	35.50	V
3299.02	-59.50	-5.29	7.72	2.15	-59.22	-13.00	46.20	V
4125.02	-57.14	-6.04	9.03	2.15	-56.30	-13.00	43.30	H
4946.01	-57.08	-6.70	9.85	2.15	-56.08	-13.00	43.10	H
5781.01	-55.55	-7.22	10.54	2.15	-54.38	-13.00	41.40	H

Sample: 1640.01 MHz

Power (EIRP) = P<sub>Mea</sub> + P<sub>pl</sub> + G<sub>a</sub>

Power (-54.91dBm) = P<sub>Mea</sub> (-54.45dBm)+ P<sub>pl</sub> (-3.56dB)+ G<sub>a</sub>(5.25dBi)

Note: Expanded measurement uncertainty is U = 5.88 dB, k = 2.

Note: The measurement results showed here are worst cases

**\*\*\*END OF REPORT\*\*\***