



# TEST REPORT

No. I16Z41093-EMC01

for

**TCL Communication Ltd.**

**CDMA EVDO BC0/BC1 2band Mobile phone**

**Model Name: A573VC**

**FCC ID: 2ACCJB027**

**with**

**Hardware Version: PIO**

**Software Version: vQAS3**

**Issued Date: 2016-06-12**

**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.

**Test Laboratory:**

**FCC 2.948 Listed: No. 525429**

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## REPORT HISTORY

Report Number	Revision	Description	Issue Date
I16Z41093-EMC01	Rev.0	1st edition	2016-06-12

## **CONTENTS**

1. TEST LABORATORY .....	4
1.1. TESTING LOCATION .....	4
1.2. TESTING ENVIRONMENT .....	4
1.3. PROJECT DATA .....	4
1.4. SIGNATURE .....	4
2. CLIENT INFORMATION .....	5
2.1. APPLICANT INFORMATION .....	5
2.2. MANUFACTURER INFORMATION .....	5
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE) .....	6
3.1. ABOUT EUT .....	6
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST .....	6
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST .....	6
3.4. EUT SET-UPS .....	6
4. REFERENCE DOCUMENTS .....	7
4.1. REFERENCE DOCUMENTS FOR TESTING .....	7
5. LABORATORY ENVIRONMENT .....	8
6. SUMMARY OF TEST RESULTS .....	9
7. TEST EQUIPMENTS UTILIZED .....	10
ANNEX A: MEASUREMENT RESULTS .....	11

## **1. Test Laboratory**

### **1.1. Testing Location**

#### **Location 1: CTTL(huayuan North Road)**

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

### **1.2. Testing Environment**

Normal Temperature: 15-35°C

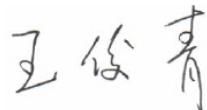
Relative Humidity: 20-75%

### **1.3. Project data**

Testing Start Date: 2016-05-30

Testing End Date: 2016-06-08

### **1.4. Signature**



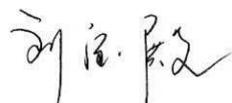
Wang Junqing

(Prepared this test report)



Qu Pengfei

(Reviewed this test report)



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(Approved this test report)

## **2. Client Information**

### **2.1. Applicant Information**

Company Name: TCL Communication Ltd.  
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Pudong Area Shanghai, P.R. China.  
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### **2.2. Manufacturer Information**

Company Name: TCL Communication Ltd.  
Address /Post: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park,  
Pudong Area Shanghai, P.R. China.  
City: Shanghai  
Postal Code: 201203  
Country: China  
Telephone: 0086-21-31363544  
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### **3. Equipment Under Test (EUT) and Ancillary Equipment (AE)**

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

Description	CDMA EVDO BC0/BC1 2band Mobile phone
Model Name	A573VC
FCC ID	2ACCJB027
Extreme vol. Limits	3.6VDC to 4.35VDC (nominal: 3.8VDC)

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

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

EUT ID*	SN or MEID	HW Version	SW Version
EUT1	270113185013270230	PIO	vQAS3

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

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

AE ID*	Description	SN	Remarks
AE1	Battery	/	1641093BA004
AE2	Travel charger	/	16TCT-CH-0507

AE1

Model	TLi017C1(CAB1780002C1)
Manufacturer	BYD
Capacitance	1780mAh
Nominal voltage	3.8V

AE2

Model	CBA0066AG0C1
Manufacturer	BYD
Length of cable	119cm

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

#### **3.4. EUT set-ups**

EUT set-up No.	Combination of EUT and AE	Remarks
Set.1	EUT1+ AE1 + AE2	Charger

## 4. Reference Documents

### 4.1. Reference Documents for testing

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

Reference	Title	Version
FCC Part 15, Subpart B	Radio frequency devices - Unintentional Radiators	10-1-15
ANSI C63.4	American National Standard for Methods of Measurement of Radio- Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	Edition 2014

## 5. LABORATORY ENVIRONMENT

**Semi-anechoic chamber SAC-1** (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω
Normalised site attenuation (NSA)	< ±4 dB, 10 m distance
Site voltage standing-wave ratio ( $S_{VSWR}$ )	Between 0 and 6 dB, from 1GHz to 6GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

**Shielded room** did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. = 20 %, Max. = 75 %
Shielding effectiveness	0.014MHz-1MHz, >60dB; 1MHz—1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4 Ω

## 6. SUMMARY OF TEST RESULTS

Abbreviations used in this clause:			
Verdict Column	P	Pass	
	NA	Not applicable	
	F	Fail	
Location Column	1	The test is performed in test location 1 which is described in section 1.1 of this report	

Clause	List	Clause in FCC rules	Verdict	Location
1	Radiated Emission	15.109(a)	P	1
2	Conducted Emission	15.107(a)	P	1

## 7. Test Equipments Utilized

NO.	DESCRIPTION	TYPE	SERIES NUMBER	MANUFACTURE	CAL DUE DATE	CALIBRATION INTERVAL
1	Test Receiver	ESCI	100344	R&S	2017-03-01	1 year
2	Test Receiver	ESCI 7	100948	R&S	2016-07-07	1 year
3	Universal Radio Communication Tester	CMU200	109914	R&S	2017-03-25	1 year
4	Test Receiver	FSV	101047	R&S	2016-07-02	1 year
6	EMI Antenna	VULB 9163	9163-234	Schwarzbeck	2016-09-16	3 years
7	EMI Antenna	3115	9906-5827	ETS-Lindgren	2016-11-19	3 years
8	PC	OPTIPLEX 380	2X1YV2X	DELL	N/A	N/A
9	Monitor	E178FPc	CN-OWR979-64180 -7AJ-D2MS	DELL	N/A	N/A
10	Printer	P1606dn	VNC3L52122	HP	N/A	N/A
11	Keyboard	L100	CN0RH659658907 ATOI40	DELL	N/A	N/A
12	Mouse	M-UAE119	LZ935220ZRC	Lenovo	N/A	N/A

## **ANNEX A: MEASUREMENT RESULTS**

### **A.1 Radiated Emission (§15.109(a))**

#### **A.1.1 Method of measurement**

The field strength of radiated emissions from the unintentional radiator (charging mode of MS) at distances of 10 meters(for 30MHz-1GHz) and 3 meters (for above 1GHz) is tested. Tested in accordance with the procedures of ANSI C63.4 - 2014, section 8.3.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3/10 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

#### **A.1.2 EUT Operating Mode:**

The MS is operating in the charging mode. During the test MS is connected to a charger in the case of charging mode. The model of the PC is DELL OPTIPLEX 380, and the serial number of the PC is 2X1YV2X.

#### **A.1.3 Measurement Limit**

Frequency range (MHz)	Field strength limit ( $\mu$ V/m)		
	Quasi-peak	Average	Peak
30-88	100		
88-216	150		
216-960	200		
960-1000	500		
>1000		500	5000

Note: the above limit is for 3 meters test distance. 10 meters' limit is got by converting.

#### **A.1.4 Test Condition**

Frequency range (MHz)	RBW/VBW	Sweep Time (s)	Detector
30-1000	120kHz (IF Bandwidth)	5	Peak/Quasi-peak
Above 1000	1MHz/1MHz	15	Peak, Average

### A.1.5 Measurement Results

A "reference path loss" is established and the  $A_{RPL}$  is the attenuation of "reference path loss". It includes the antenna factor of receive antenna and the path loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + A_{RPL} = P_{\text{Mea}} + G_A + G_{PL}$$

Where

$G_A$ : Antenna factor of receive antenna

$G_{PL}$ : Path Loss

$P_{\text{Mea}}$ : Measurement result on receiver.

Measurement uncertainty (worst case):  $U = 4.3 \text{ dB}$ ,  $k=2$ .

### Measurement results for Set.1:

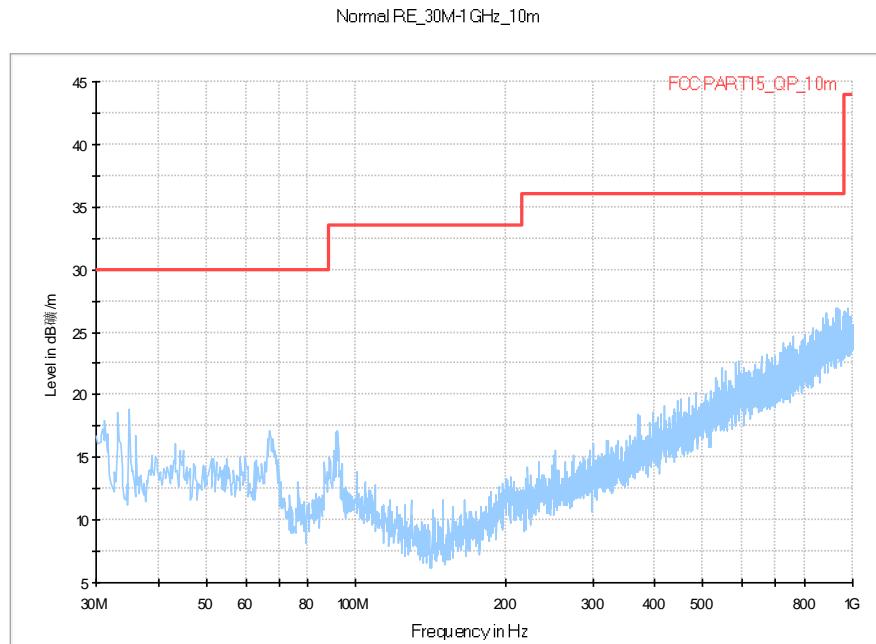
#### Charging Mode/Average detector

Frequency(MHz)	Result(dB $\mu$ V/m)	$G_{PL}$ (dB)	$G_A$ (dB/m)	$P_{\text{Mea}}$ (dB $\mu$ V)	Polarity
17939.650	51.6	-17.7	45.6	23.700	H
17992.350	51.5	-17.7	45.6	23.600	H
17818.100	51.5	-18.5	45.6	24.400	V
17985.550	51.4	-17.7	45.6	23.500	H
17903.100	51.3	-18.5	45.6	24.200	H
18000.000	51.2	-45.6	44.5	52.266	H

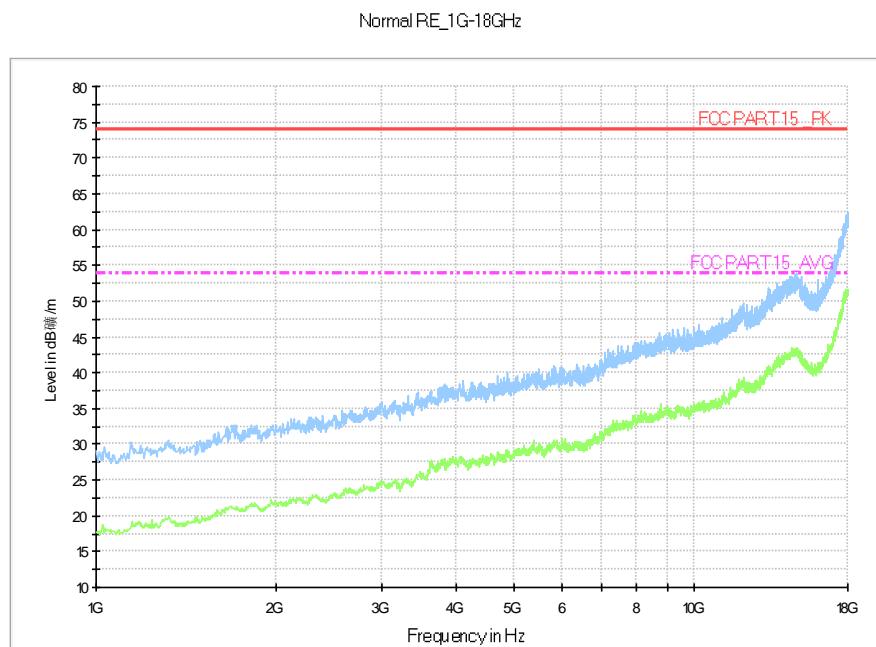
#### Charging Mode/Peak detector

Frequency(MHz)	Result(dB $\mu$ V/m)	$G_{PL}$ (dB)	$G_A$ (dB/m)	$P_{\text{Mea}}$ (dB $\mu$ V)	Polarity
17992.350	62.3	-17.7	45.6	34.400	H
17938.800	62.1	-17.7	45.6	34.200	H
17959.200	61.8	-17.7	45.6	33.900	V
17940.500	61.7	-17.7	45.6	33.800	H
17979.600	61.6	-17.7	45.6	33.700	H
17927.750	61.5	-17.7	45.6	33.600	H

**Charging Mode, Set.1**



**Fig.1 Radiated Emission from 30MHz to 1GHz**



**Fig.2 Radiated Emission from 1GHz to 18GHz**

## A.2 Conducted Emission

### Reference

FCC: CFR Part 15.107(a).

#### A.2.1 Method of measurement

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits. Tested in accordance with the procedures of ANSI C63.4 – 2014, section 7.3.

#### A.2.2 EUT Operating Mode

The MS is operating in the charging mode. During the test MS is connected to a charger in the case of charging mode. The model of the PC is DELL OPTIPLEX 380, and the serial number of the PC is 2X1YV2X.

#### A.2.3 Measurement Limit

Frequency of emission (MHz)	Conducted limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

\*Decreases with the logarithm of the frequency

#### A.2.4 Test Condition in charging mode

Voltage (V)	Frequency (Hz)
120	60

RBW/IF bandwidth	Sweep Time(s)
9kHz	1

### A.2.5 Measurement Results

Measurement uncertainty:  $U= 2.9$  dB,  $k=2$ .

#### Charging Mode, Set.1

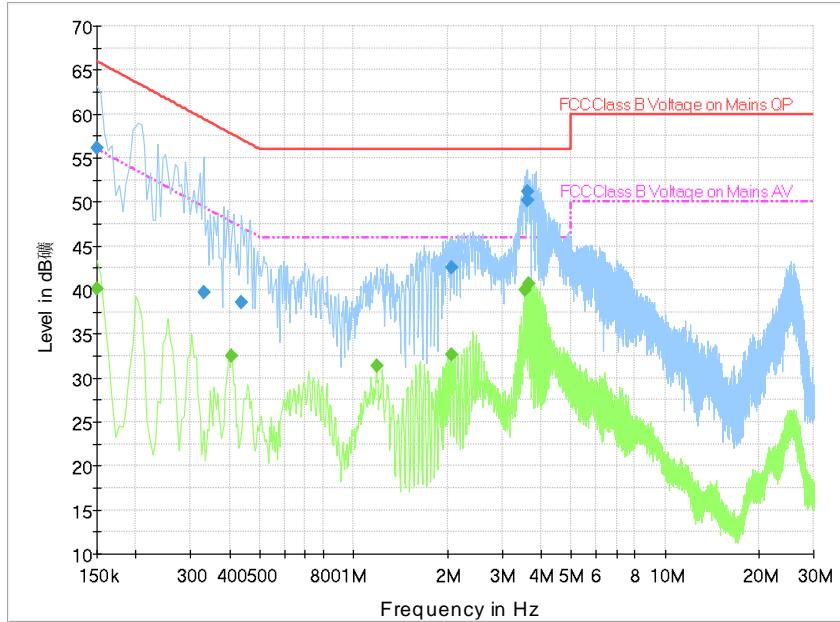


Fig.3 Conducted Emission

#### Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time(ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	56.2	2000.0	9.000	On	L1	20.2	9.8	66.0
0.330000	39.7	2000.0	9.000	On	L1	19.8	19.7	59.5
0.438000	38.5	2000.0	9.000	On	L1	19.9	18.6	57.1
2.062500	42.5	2000.0	9.000	On	L1	19.7	13.5	56.0
3.601500	50.2	2000.0	9.000	On	L1	19.5	5.8	56.0
3.606000	51.2	2000.0	9.000	On	L1	19.5	4.8	56.0

#### Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time(ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	40.1	2000.0	9.000	On	L1	20.2	15.9	56.0
0.406500	32.5	2000.0	9.000	On	N	19.9	15.2	47.7
1.185000	31.4	2000.0	9.000	On	N	19.7	14.6	46.0
2.058000	32.6	2000.0	9.000	On	L1	19.7	13.4	46.0
3.556500	40.0	2000.0	9.000	On	L1	19.5	6.0	46.0
3.655500	40.7	2000.0	9.000	On	L1	19.5	5.3	46.0

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