RF Test Report

Report No.: AGC01813161203EE07

PRODUCT DESIGNATION	:	3G Dual-SIM Smartphone
BRAND NAME	:	vonino
MODEL NAME	:	Volt S
CLIENT	:	Vonino ELectronics LTD
DATE OF ISSUE	:	Dec. 30, 2016
STANDARD(S)	:	EN 301 908-1 V7.1.1 (2015-03) EN 301 908-2 V7.1.1 (2015-12)
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Dec. 30, 2016	Valid	Original Report

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1. TEST REPORT CERTIFICATION

Applicant	Vonino ELectronics LTD
Address	Miramar Tower 10F- No.1010, 132 Nathan Road, Tsim Sha Tsui, Kowloon, Hong Kong
Manufacturer	Gui zhou Fortuneship Technology Co., Ltd
Address	No. 4 Plant, High-tech Industrial Park, Xinpu Economic Development Zone) Jingkai Road, Xinpu Jingkai District, Xinpu New District, Zunyi City, Guizhou Province, P. R. China
Product Designation	3G Dual-SIM Smartphone
Brand Name	vonino
Test Model	Volt S
Date of test	Dec. 15, 2016 to Dec. 22, 2016
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-EC-3G2/RF

We, Attestation of Global Compliance (Shenzhen) Co., Ltd., for compliance with the requirements set forth in the European Standard ETSI EN 301 908-1/-2. The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

2. GENERAL INFORMATION

2.1. DESCRIPTION OF EUT

2.1.1. FINAL EQUIPMENT BUILD STATUS

Details of technical specification refer to the description in follows:

Product Name	3G Dual-SIM Smartphone
Brand Name	vonino
Test Model	Volt S
Product Type	UMTS
Hardware Version	ZH066-MB-V3.0
Software Version	N/A
UMTS Frequency Bands	☒FDD Band I ☒FDD Band VIII (EU Bands) ☐FDD Band V ☐FDD Band II (Non-EU Bands)
Modulation Mode	HSDPA:QPSK/16QAM; HSUPA:BPSK; WCDMA:QPSK
Antenna Type	PIFA antenna
Antenna Gain	1.0dBi
Power Class	FDD Band I:3, FDD Band VIII:3
GSM Release Version	N/A
SIM Card Description	There are dual-SIM cards, just one for GSM/WCDMA and the other only for GSM.

2.1.2. PHOTOGRAPHS OF THE EUT

Please see APPENX 1 for photographs of the EUT.

2.1.3. IDENTIFICATION OF SAMPLES EUT

The EUT Identity consists of numerical and letter characters (see the table below), the first five numerical characters indicates the Type of the EUT defined by AGC, the next letter character indicates the test sample, and the following two numerical characters indicates the software version of the test sample.

SAMPLE A01

Sample Reference Number	A01
Manufacturer Name	Gui zhou Fortuneship Technology Co., Ltd
Test Model	Volt S
Product Type	FDD Band I, FDD Band VIII
Frequency Bands	HSDPA:QPSK/16QAM;HSUPA:BPSK WCDMA: QPSK

2.2. TYPE OF PICS/PIXIT INFORMATION

Item	FDD (DS) RF Baseline Implementation capabilities	Support	Allowed Value	Comments
1	Chip rate 3.84 Mbps	YES	Yes/No	--
2	Frequency band: 1920-1980, 2110-2170 MHz	YES	Yes/No	Band I
3	Frequency band: 1850-1910, 1930-1990 MHz	NO	Yes/No	Band II
9	UE Power Class 1 (+33 dBm)	NO	Yes/No	--
10	UE Power Class 2 (+27 dBm)	NO	Yes/No	--
11	UE Power Class 3 (+24 dBm)	YES	Yes/No	--
12	UE Power Class 4 (+21 dBm)	NO	Yes/No	--
14	Frequency band: 1710-1785, 1805-1880 MHz	NO	Yes/No	Band III
15	Frequency band: 1710-1755, 2110-2155 MHz	NO	Yes/No	Band IV
16	Frequency band: 824-849, 869-894 MHz	NO	Yes/No	Band V
17	Frequency band: 830-840, 875-885 MHz	NO	Yes/No	Band VI
18	Frequency band: 2500-2570, 2620-2690 MHz	NO	Yes/No	Band VII
19	Frequency band: 880-915, 925-960 MHz	YES	Yes/No	Band VIII
20	Frequency band: 1749.9-1784.9, 1844.9-1879.9 MHz	NO	Yes/No	Band IX
21	Frequency band: 1710-1770, 2110-2170 MHz	NO	Yes/No	Band X
22	Frequency band: 1427.9-1452.9, 1475.9-1500.9 MHz	NO	Yes/No	Band XI
23	Frequency band: 698-716, 728-746 MHz	NO	Yes/No	Band XII
24	Frequency band: 777-787, 746-756 MHz	NO	Yes/No	Band XIII
25	Frequency band: 788-798, 758-768 MHz	NO	Yes/No	Band XIV

3. IDENTIFICATION OF THE RESPONSIBLE TESTING LOCATION

Test Site-1	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location 1	2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China
Location-2	B112-B113, Building 12, Baoan Building Materials Center, No.1 of Xixiang Inner Ring Road, Baoan District, Shenzhen, Guangdong, P.R.China

Note: adjacent channel selectivity, blocking characteristics, intermodulation characteristics of receiver test within the scope of TAF approval.

LIST OF EQUIPMENTS USED OF AGC

No.	Type	Manufacturer	S/N	Cal. Date	Cal. Due
1	H & T Chamber ETH225-40A	Test EQ	WIT-05121302	Feb.15,2016	Feb.14,2017
2	CMU200	R&S	120237	Feb.29,2016	Feb.28,2017
3	Wireless communication test set 8960	Agilent	GB46200384	July 18,2016	July 17,2017
4	Power Splitter 11636A	Agilent	34	Oct.10,2016	Oct.09,2017
5	Attenuator FSC 96341	MA-CCM	2082-6192-06	Oct.10,2016	Oct.09,2017
6	Vector Signal Generator SMU200A	R&S	104332	Oct.10,2016	Oct.09,2017
7	VECTOR ANALYZER E4440A	Agilent	MY44303916	July 02,2016	July 01,2017
8	MXG Vector Signal Generator N5182A	AGILENT	MY50140530	Oct.10,2016	Oct.09,2017
9	PSG Analog Signal Generator E8257D	AGILENT	MY45141029	Oct.10,2016	Oct.09,2017
10	MXA Signal Analyzer N9020A	AGILENT	W1312-60196	Feb.29,2016	Feb.28,2017
11	Universal Switch Control Unit	JS TONSCEND	N/A	---	---
12	RF SHIELD BOX	R&S	1204.7008K02-102590-EE	Feb.29,2016	Feb.28,2017
13	Programmable Power Supply PPT-1830	GW INSTEK	EM907629	Aug.25,2016	Aug.24,2017
14	Vibration Source SCU-200	SUSHI	3000-40-07	Feb.25,2016	Feb.24,2017
15	Attenuator FSC 96341	MA-CCM	2082-6192-06	Oct.10,2016	Oct.09,2017
16	EMI Test Receiver ESCI	R&S	100694	Feb.29,2016	Feb.28,2017
17	Double-Ridged Waveguide Horn Antenna 3117	ETS LINDGREN	00034609	Mar.01,2016	Feb.28,2017
18	Trilog Broadband Antenna VULB 9163	SCHWARZBECK	336	Jan.31,2016	Jan.30,2017

No.	Type	Manufacturer	S/N	Cal. Date	Cal. Due
19	LOOP ANTENNA SAS-562B	A.H	/	Mar.01,2016	Feb.28,2017
20	Artificial Mains Network ENV4200	R&S	101116	July.18,2016	July.17,2017
21	Artificial Mains Network ENV216	R&S	101242	July.18,2016	July.17,2017
22	Filter Bank Notch 1(880-915MHz)	MICRO-TRONICS	010	Feb.29,2016	Feb.28,2017
23	Filter Bank Notch 2(1710-1785MHz)	MICRO-TRONICS	009	Feb.29,2016	Feb.28,2017
24	Filter Bank Notch 3(1920-1980MHz)	MICRO-TRONICS	008	Feb.29,2016	Feb.28,2017

4. MEASUREMENT UNCERTAINTY

Parameter	Conditions	Test System Uncertainty
Transmitter Maximum Output power	--	±0,6dB
Transmitter spectrum emissions mask	--	±1,4 dB
Transmitter spurious emissions	f ≤ □ 2,2 GHz 2,2 GHz < f ≤ 4 GHz f > 4 GHz Co-existence band (≥ -60 dBm) Co-existence band (< -60 dBm)	±1,35 dB ±1.8 dB ±3.5 dB ±1.8 dB ±2.7 dB
Transmitter Minimum output power	--	±0.8 dB
Receiver Adjacent Channel Selectivity(ACS)	--	±0.9 dB
Receiver Blocking characteristics	f < 15 MHz offset: 15 MHz offset ≤ f ≤ 2,2 GHz 2,2 GHz < f □ ≤ 4 GHz f > 4 GHz	±1,1 dB ±0.8 dB ±1,5 dB ±2.9 dB
Receiver spurious response	f δ □ 2,2 GHz 2,2 GHz < f ≤ □ 4 GHz f > 4 GHz	±0.8 dB ±1,5 dB ±2.9 dB
Receiver intermodulation characteristics	--	±1,2 dB
Receiver spurious emissions	For UE receive band (-60 dBm) For UE transmit band (-60 dBm) Outside the UE receive band: f ≤ 2,2 GHz 2,2 GHz < f ≤ 4 GHz f > 4 GHz	±2.8 dB ±2.9 dB ±1.8 dB ±1.7 dB ±3.6 dB
Out of synchronization of handing power	DPCCH Ec/Ior Transmit OFF power	±0,3 dB ±0.8 dB
Transmitter adjacent channel leakage power ratio	--	±0,7 dB
Effective radiated RF power between 30 MHz and 180 MHz	--	±5 dB
Effective radiated RF power between 180 MHz and 12,75 GHz	--	±2 dB
Conducted RF power	--	±0.9 dB

5. TEST RESULT

5.1. APPLIED REFERENCE DOCUMENTS

Leading reference documents for testing:

No.	Identity	Document Title
1	ETSI EN 301 908-1	IMT cellular networks; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 1: Introduction and common requirements
2	ETSI EN 301 908-2	IMT cellular networks; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 2: CDMA Direct Spread (UTRA FDD) User Equipment (UE)

Specific reference documents for testing:

No.	Identity	Document Title
3	3GPP TS 34.121-1	3rd Generation Partnership Project; Technical Specification Group Radio Access Network ; Terminal conformance specification; Radio transmission and reception (FDD)
4	3GPP TS 34.121-2	3rd Generation Partnership Project; Technical Specification Group Radio Access Network User Equipment (UE) conformance specification; Radio transmission and reception (FDD); Part 2: Implementation Conformance Statement (ICS)

5.2. TEST ENVIRONMENT/CONDITIONS

Normal Temperature (NT)	15 ... 35 °C
Relative Humidity	20 ... 75 %
Air Pressure	980 ... 1020 hPa
Adapter Test Model Name	VNA-V50JS
Details of Power Supply (Rated Input)	AC100-240V, 50/60Hz, 0.15A
Details of Power Supply (Rated Output)	DC 5V, 1000mA
Extreme Temperature	Low Temperature (LT) = -20°C High Temperature (HT) = +55°C
Extreme Voltage of the EUT	Normal Voltage= DC 3.80V Limit Voltage = DC 4.35V
Note: The Limit Voltage 4.35V was declared by manufacturer, The EUT couldn't be operate normally with higher voltage.	

5.3. ITEMS USED IN THE TEST RESULTS LIST

Terms in the column “Verdict” for the test results list of the section:

Verdict	Description
PASS	EUT passed this test case
FAIL	EUT failed this test case
INC.	EUT did not pass and did not fail this test case, therefore the verdict is inconclusive
FOUR-FAITH	Test case not applicable for the EUT, see the column “Note” for detailed

5.4. TEST RESULTS LIST

ETSI EN 301 908-1

Test case	Description	Condition	FDDI		FDDVIII	
			Sample	Result	Sample	Result
5.3.1	Radiated emission (UE)	NTC	A01	PASS	A01	PASS
5.3.3	Control and monitoring functions (UE)	NTC	A01	PASS	A01	PASS

ETSI EN 301 908-2

Test case	Description	Condition	FDDI		FDDVIII	
			Sample	Result	Sample	Result
4.2.2	Transmitter Characteristics/Maximum Output Power	NTC	A01	PASS	A01	PASS
4.2.2	Transmitter Characteristics/Maximum Output Power	HT/HV	A01	PASS	A01	PASS
4.2.2	Transmitter Characteristics/Maximum Output Power	HT/LV	A01	PASS	A01	PASS
4.2.2	Transmitter Characteristics/Maximum Output Power	LT/HV	A01	PASS	A01	PASS
4.2.2	Transmitter Characteristics/Maximum Output Power	LT/LV	A01	PASS	A01	PASS
4.2.5	Transmitter Characteristics/Output Dynamics in the Uplink/Minimum Output Power	NTC	A01	PASS	A01	PASS
4.2.5	Transmitter Characteristics/Output Dynamics in the Uplink/Minimum Output Power	HTHV	A01	PASS	A01	PASS
4.2.5	Transmitter Characteristics/Output Dynamics in the Uplink/Minimum Output Power	HTLV	A01	PASS	A01	PASS
4.2.5	Transmitter Characteristics/Output Dynamics in the Uplink/Minimum Output Power	LT/HV	A01	PASS	A01	PASS
4.2.5	Transmitter Characteristics/Output Dynamics in the Uplink/Minimum Output Power	LT/LV	A01	PASS	A01	PASS
4.2.11	Transmitter Characteristics/Output Dynamics in the Uplink/Out-of-synchronization Handling of Output power	NTC	A01	PASS	A01	PASS
4.2.3	Transmitter Characteristics/Spectrum Emission Mask	NTC	A01	PASS	A01	PASS
4.2.3	Transmitter Characteristics/Spectrum Emission Mask-HSDPA&HSUPA	NTC	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)	NTC	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)	HT/HV	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent	HT/LV	A01	PASS	A01	PASS

	Channel Leakage Power Ratio (ACLR)					
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)	LT/HV	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)	LT/LV	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)-- HSDPA&HSUPA	NTC	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)-- HSDPA&HSUPA	HT/HV	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)-- HSDPA&HSUPA	HT/LV	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)-- HSDPA&HSUPA	LT/HV	A01	PASS	A01	PASS
4.2.12	Transmitter Characteristics/Adjacent Channel Leakage Power Ratio (ACLR)-- HSDPA&HSUPA	LT/LV	A01	PASS	A01	PASS
4.2.4	Transmitter Characteristics/Spurious Emissions	NTC	A01	PASS	A01	PASS
4.2.6	Receiver Characteristics/Adjacent Channel Selectivity (ACS)	NTC	A01	PASS	A01	PASS
4.2.7	Receiver Characteristics/Blocking Characteristics	NTC	A01	PASS	A01	PASS
4.2.8	Receiver Characteristics/Spurious Response	NTC	A01	PASS	A01	PASS
4.2.9	Receiver Characteristics /Intermodulation Characteristics	NTC	A01	PASS	A01	PASS
4.2.10	Receiver Characteristics/Spurious Emissions	NTC	A01	PASS	A01	PASS

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

RADIATED SPURIOUS EMISSION TEST SETUP

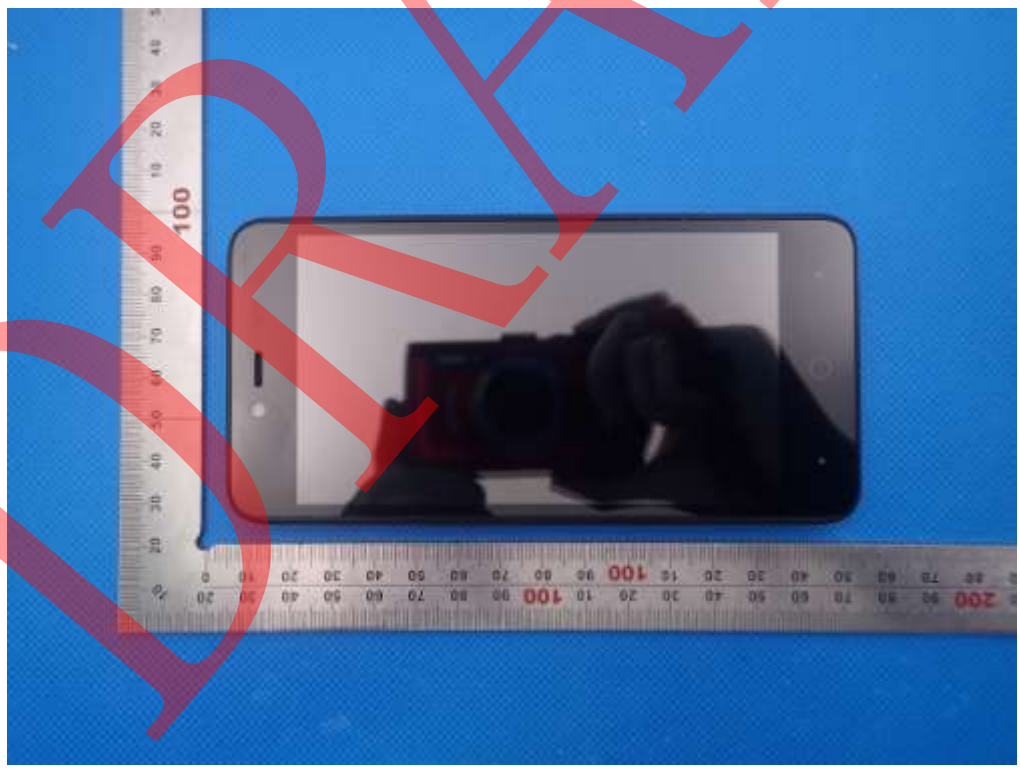
APPENDIX B: PHOTOGRAPHS OF EUT

All VIEW OF EUT

TOP VIEW OF EUT

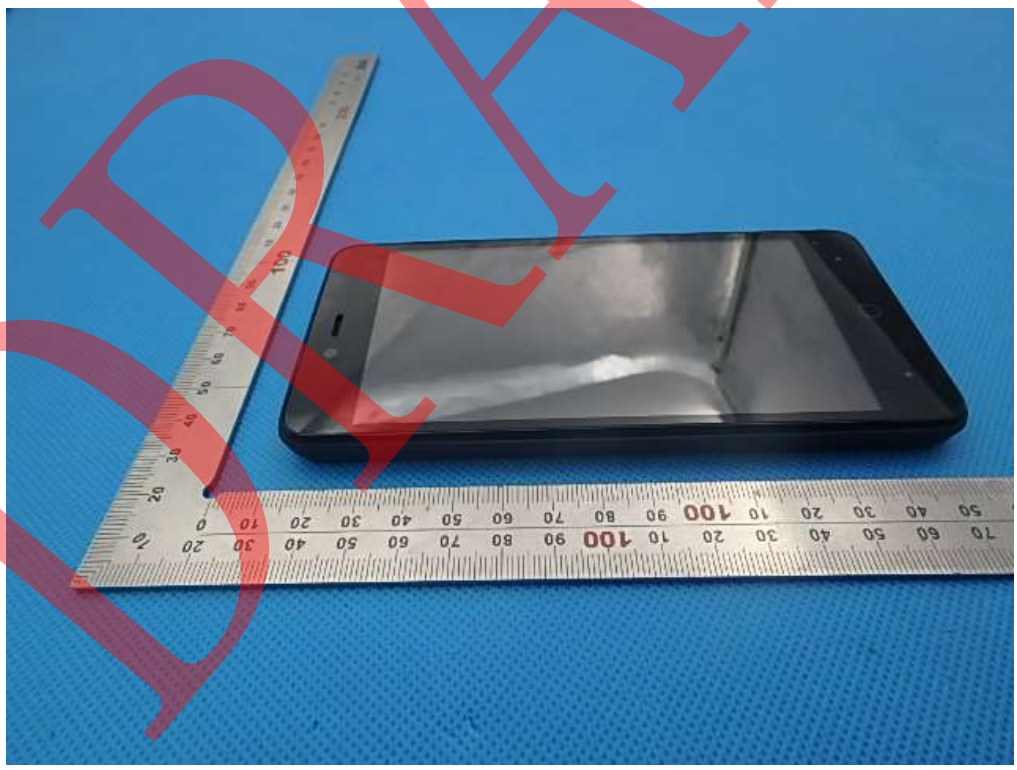
BOTTOM VIEW OF EUT

FRONT VIEW OF EUT

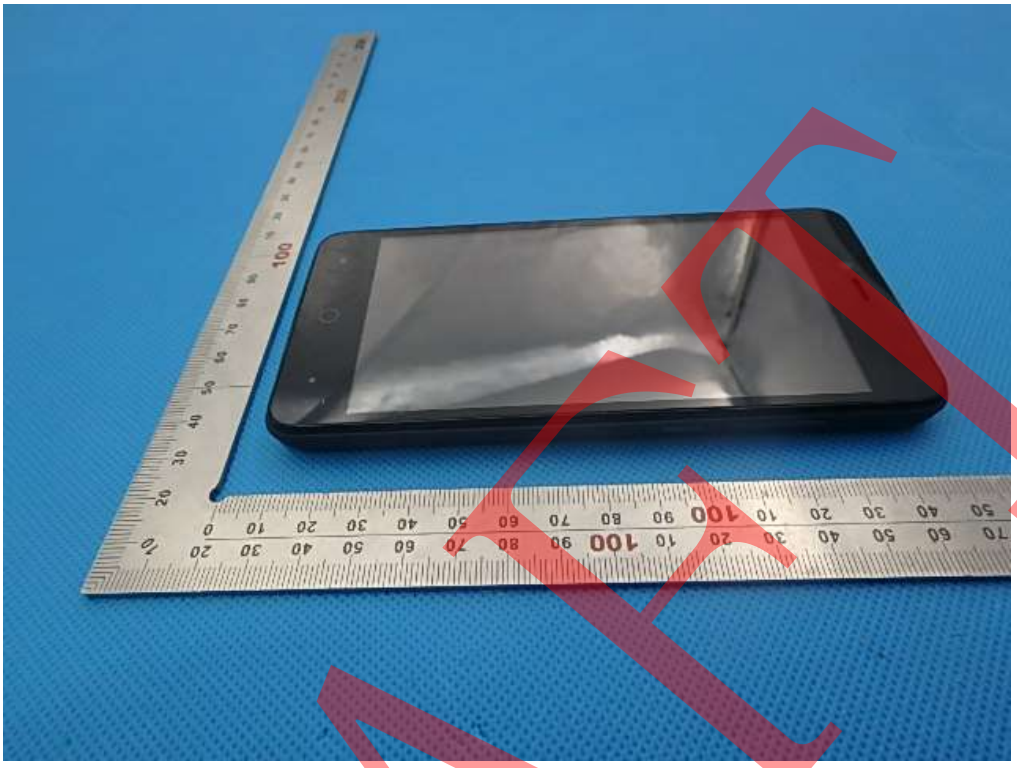


BACK VIEW OF EUT

LEFT VIEW OF EUT

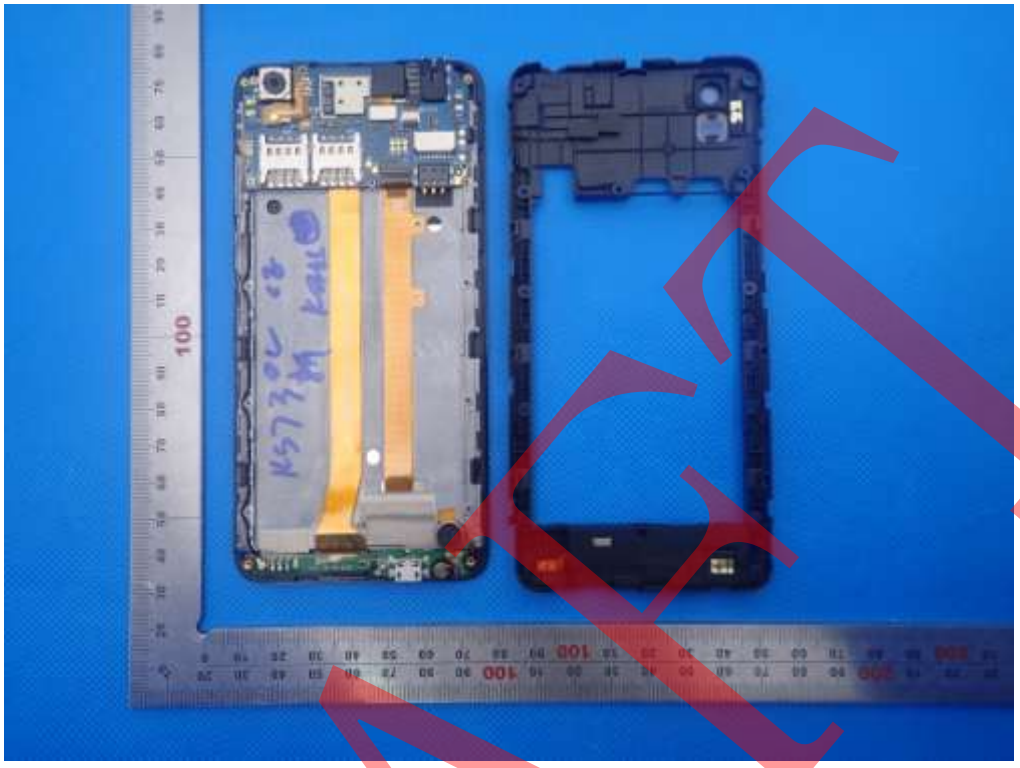


RIGHT VIEW OF EUT



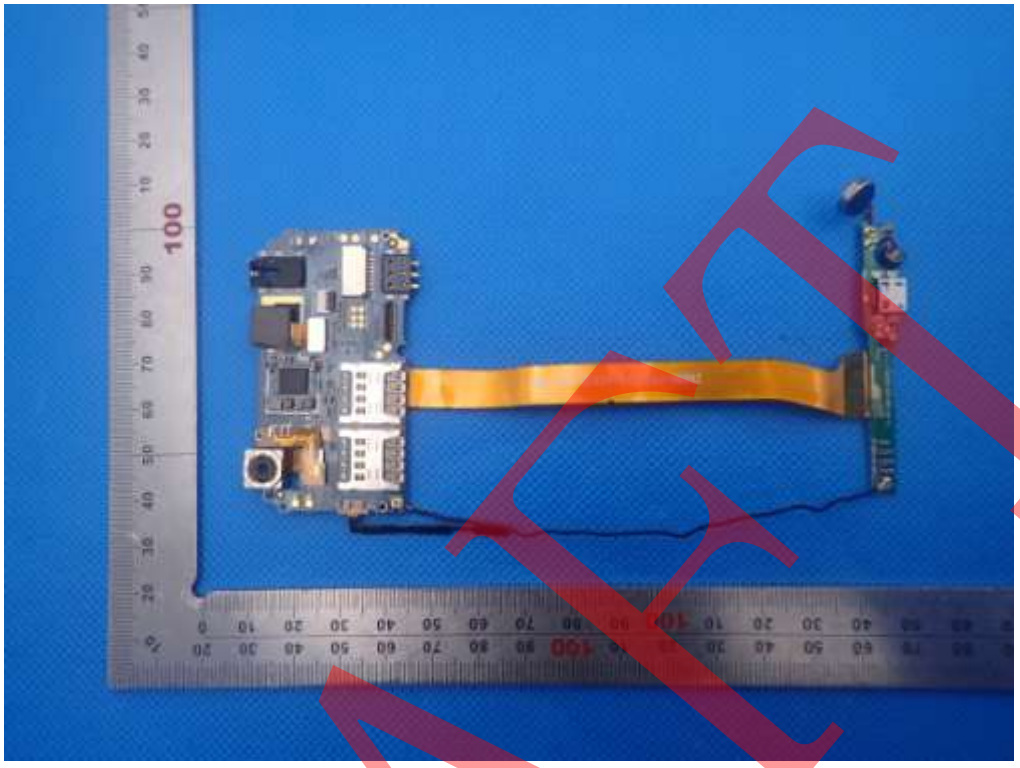
OPEN VIEW OF EUT-1

OPEN VIEW OF EUT-2

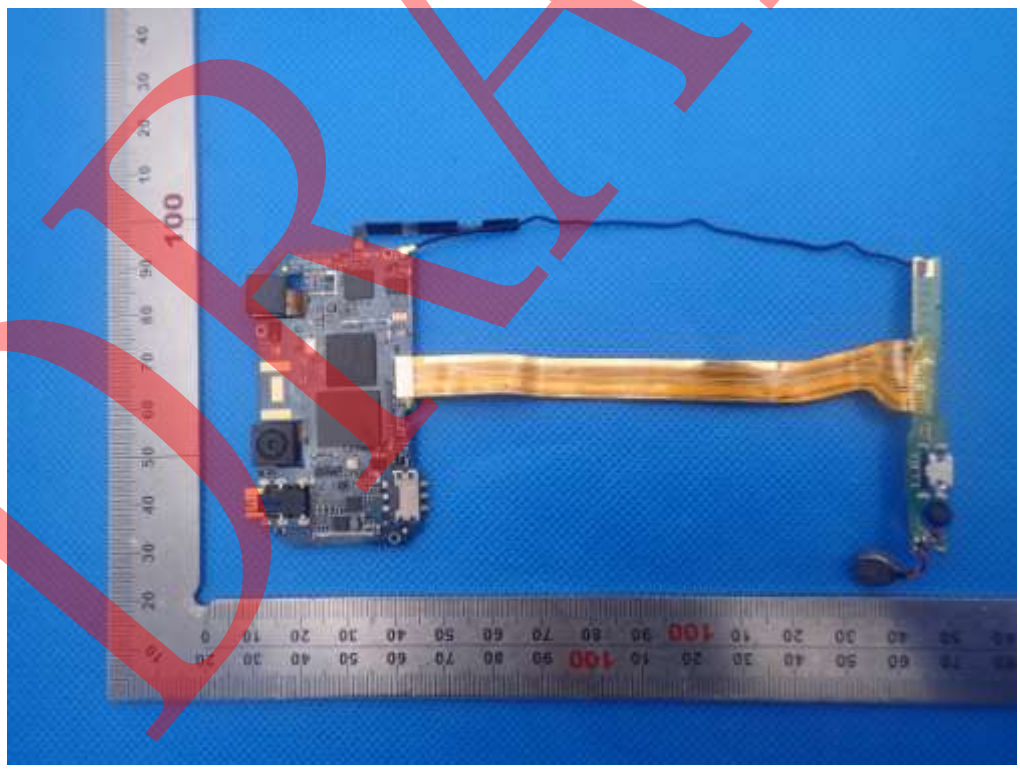


OPEN VIEW OF EUT-3

INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



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