



ETSI EN 301 489-1 V2.2.3 (2019-11)
ETSI EN 301 489-3 V2.1.1 (2019-03)

TEST REPORT

For

KIDdesigns Inc.

1299 Main Street, Rahway NJ 07065, U.S.A.

Tested Model: FR-V200
Multiple Models: CA-V200CW, MS-V200, MS-V200MM, PW-V200, SM-V200, ST-V200, SW-V200E7, TS-V200, M₁-V200M₂M₃M₄M₅M₆M₇M₈M₉M₁₀

Report Type: Original Report	Product Type: V200 WALKIE TALKIES
Report Number:	RSZ190815K49-02
Report Date:	2019-12-06 Simon Wang
Reviewed By:	RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

Note: BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	3
OBJECTIVE	3
PERFORMANCE CRITERION	3
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY	4
MEASUREMENT UNCERTAINTY	4
SYSTEM TEST CONFIGURATION.....	5
DESCRIPTION OF TEST CONFIGURATION	5
EQUIPMENT MODIFICATIONS	5
SUPPORT EQUIPMENT LIST AND DETAILS	5
EXTERNAL I/O CABLE.....	5
BLOCK DIAGRAM OF TEST SETUP	5
SUMMARY OF TEST RESULTS	6
TEST EQUIPMENT LIST	7
§7.1 - RADIATED EMISSIONS	8
TEST SYSTEM SETUP	8
EMI TEST RECEIVER SETUP.....	8
TEST PROCEDURE	9
CORRECTED AMPLITUDE & MARGIN CALCULATION	9
TEST RESULTS SUMMARY	9
TEST DATA	9
§7.2 - RF ELECTROMAGNETIC FIELD (80 MHZ TO 6000 MHZ).....	11
TEST SYSTEM SETUP	11
TEST STANDARD	11
TEST PROCEDURE	12
TEST DATA AND SETUP PHOTO.....	12
§7.2 - ELECTROSTATIC DISCHARGE.....	14
TEST SYSTEM SETUP	14
TEST STANDARD	14
TEST PROCEDURE	15
TEST DATA AND SETUP PHOTO.....	15
EXHIBIT A - PRODUCT CE LABELING.....	18
PROPOSED CE LABEL FORMAT	18
PROPOSED LOCATION OF LABEL ON EUT	18
EXHIBIT B - EUT PHOTOGRAPHS	19
EXHIBIT C - TEST SETUP PHOTOGRAPHS.....	25
RADIATED EMISSIONS VIEW (BELOW 1 GHz).....	25
RADIATED EMISSIONS VIEW (ABOVE 1 GHz).....	25
PRODUCT SIMILARITY DECLARATION LETTER.....	26

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	V200 WALKIE TALKIES
Tested Model	FR-V200
Multiple Model	CA-V200CW, MS-V200, MS-V200MM, PW-V200, SM-V200, ST-V200, SW-V200E7, TS-V200, M ₁ -V200M ₂ M ₃ M ₄ M ₅ M ₆ M ₇ M ₈ M ₉ M ₁₀
Highest Operating Frequency	40.70MHz
Voltage Range	DC 9V
Date of Test	2019-09-03 to 2019-11-27
Sample serial number	190815K49(Assigned by Shenzhen BACL)
Received date	2019-08-15
Sample/EUT Status	Good condition

Notes: This series products model: CA-V200CW, MS-V200, MS-V200MM, PW-V200, SM-V200, ST-V200, SW-V200E7, TS-V200, M₁-V200M₂M₃M₄M₅M₆M₇M₈M₉M₁₀ and FR-V200 are identical schematics. Model FR-V200 was selected for fully testing, the detailed information can be referred to the declaration letter.

Objective

This test report is prepared on behalf of *KIDdesigns Inc.* in accordance with ETSI EN 301 489-1 V2.2.3 (2019-11), ETSI EN 301 489-3 V2.1.1 (2019-03), ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard covering the essential requirements of article 3.1(b) of Directive 2014/53/EU.

The objective of the manufacturer is to determine the compliance of the EUT with ETSI EN 301 489-1 V2.2.3 (2019-11), ETSI EN 301 489-3 V2.1.1 (2019-03).

Performance criterion

Performance criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion B

During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed.

Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

Related Submittal(s)/Grant(s)

No Related Submittal(s).

Test Methodology

All measurements contained in this report were conducted with ETSI EN 301 489-1 V2.2.3 (2019-11).

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expanded combined standard uncertainty of test at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown as below. And the uncertainty will be taken into consideration for the test data recorded in the report.

Item		Expanded Measurement uncertainty
Conducted Emissions	AC Mains	1.95 dB (k=2, 95% level of confidence)
	CAT 3	3.70 dB (k=2, 95% level of confidence)
	CAT 5	3.86 dB (k=2, 95% level of confidence)
	CAT 6	4.64 dB (k=2, 95% level of confidence)
Radiated emission	Below 1GHz	4.75 dB (k=2, 95% level of confidence)
	Above 1GHz	4.88 dB (k=2, 95% level of confidence)

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

Equipment Modifications

No modifications were made to the EUT.

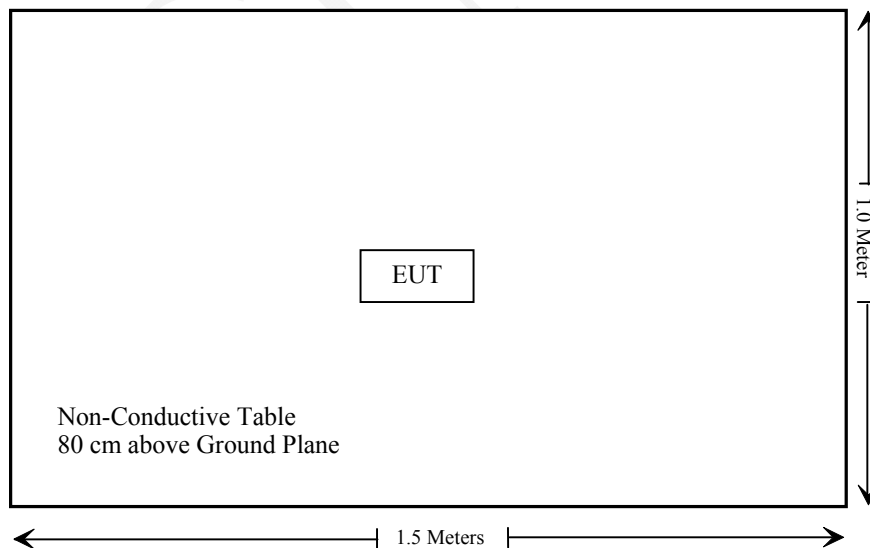
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
N/A	N/A	N/A	N/A

External I/O Cable

Cable Description	Length (m)	From/Port	To
N/A	N/A	N/A	N/A

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
§7.1	Reference to clauses EN 301 489-1 §8.4 AC mains power input/output ports	Not Applicable
	Reference to clauses EN 301 489-1 §8.3 DC power input/output ports	Not Applicable
	Reference to clauses EN 301 489-1 §8.2 Enclosure of ancillary equipment measured on a stand alone basis	Compliance
	Reference to clauses EN 301 489-1 §8.5 Harmonic current emissions (AC mains input port)	Not Applicable
	Reference to clauses EN 301 489-1 §8.6 Voltage fluctuations and flicker (AC mains input port)	Not Applicable
	Reference to clauses EN 301 489-1 §8.7 Telecommunication ports	Not Applicable
§7.2	Reference to clauses EN 301 489-1 §9.2 Radio frequency electromagnetic field (80 MHz to 6000 MHz)(EN 61000-4-3)	Compliance
	Reference to clauses EN 301 489-1 §9.3 Electrostatic discharge (EN 61000-4-2)	Compliance
	Reference to clauses EN 301 489-1 §9.4 Fast transients, common mode (EN 61000-4-4)	Not Applicable
	Reference to clauses EN 301 489-1 §9.5 Radio frequency, common mode (EN 61000-4-6)	Not Applicable
	Reference to clauses EN 301 489-1 §9.6 Transients and surges in the vehicular environment (ISO 7637-2)	Not Applicable
	Reference to clauses EN 301 489-1 §9.8 Surges (EN 61000-4-5)	Not Applicable
	Reference to clauses EN 301 489-1 §9.7 Voltage dips and interruptions (EN 61000-4-11)	Not Applicable

Not Applicable: Please refer to Applicability overview tables in sections 7.1 and 7.2 of EN 301 489-1 requirements for Radio and ancillary equipment.

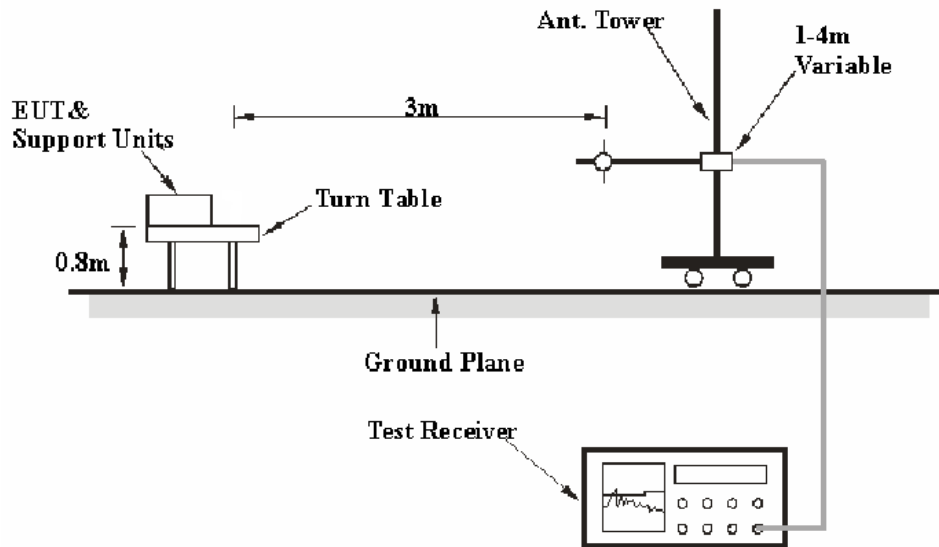
TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMI					
Sonoma Instrument	Amplifier	310N	186238	2018-11-12	2019-11-12
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2019-07-09	2020-07-08
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017-12-22	2020-12-21
COM-POWER	Dipole Antenna	AD-100	41000	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2019-07-22	2020-07-21
COM-POWER	Pre-amplifier	PA-122	181919	2018-11-12	2019-11-12
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017-12-22	2020-12-21
A.H. System	Horn Antenna	SAS-200/571	135	2018-09-01	2021-08-31
Rohde & Schwarz	Auto test Software	EMC32	V9.10	NCR	NCR
EMS					
TESEQ	ESD Generator	NSG 438	1476	2019-08-13	2020-08-12
A&R	Power Amplifier	500W100B	0348446	NCR	NCR
A&R	Power Amplifier	60S1G6	0348712	NCR	NCR
A&R	Antenna	ATL80M1G	348837	NCR	NCR
A&R	Antenna	ATT700M12G	0349411	NCR	NCR
Agilent	Signal Generator	8665B	3744A01692	2019-08-13	2020-08-12
BACL	Test Software	VEE PRO	V2.3 VXE	NCR	NCR

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

§7.1 - RADIATED EMISSIONS

Test System Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the CISPR 16-1-4:2012, CISPR 16-2-3:2010. The limit was specified in EN 301 489-1.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1 GHz.

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
1 GHz – 6 GHz	1 MHz	3 MHz	-	Peak
1 GHz – 6 GHz	1 MHz	Reduce Video Bandwidth	-	Average

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in the Quasi-peak detection mode for below 1 GHz, and Peak and Average for above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude.}$$

Test Results Summary

According to the recorded data in following table, the EUT complied with the EN 301 489-1,

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level complies with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr} , if L_m is less than L_{lim} , it implies that the EUT complies with the limit.

Test Data

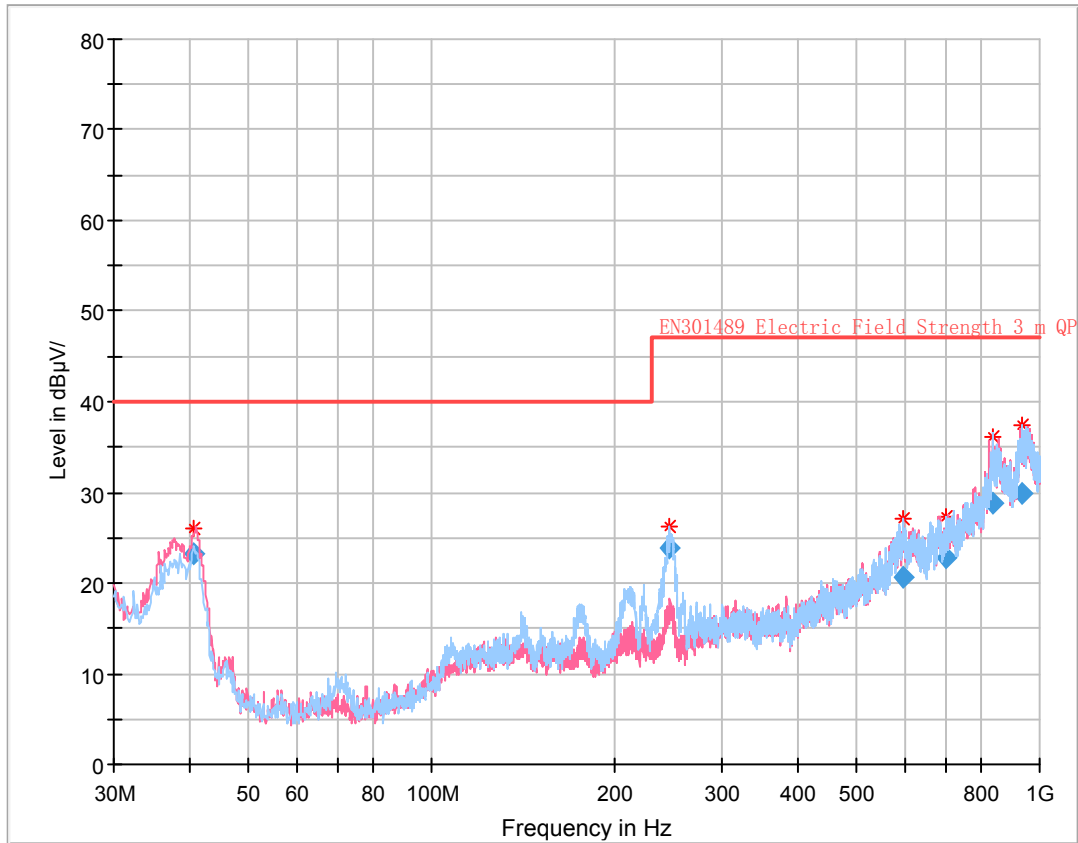
Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Zero Yan and Curry Xiang on 2019-09-03.

Test mode: Standby&Receiving

30 MHz-1 GHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna height (cm)	Antenna Polarity	Turntable position (degree)	Correction Factor (dB/m)	Limit (dBµV/m)	Margin (dB)
40.719500	23.20	102.0	V	354.0	-14.3	40.00	16.80
245.872375	23.77	138.0	H	272.0	-14.1	47.00	23.23
596.116250	20.71	293.0	H	0.0	-1.1	47.00	26.29
703.173875	22.83	242.0	V	41.0	-1.1	47.00	24.17
839.004625	28.81	247.0	H	92.0	5.8	47.00	18.19
938.283750	29.96	401.0	H	87.0	8.6	47.00	17.04

Note:

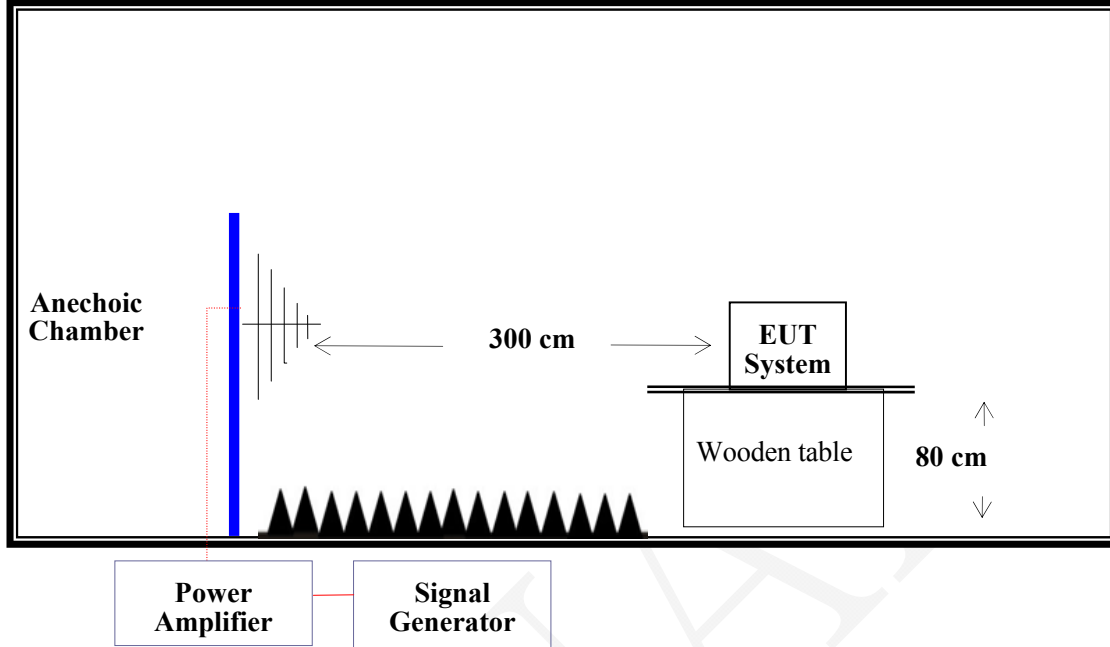
Corrected Amplitude = Corrected Factor + Reading

Corrected Factor = Antenna factor (RX) +cable loss - amplifier factor

Margin = Limit - Corrected Amplitude

§7.2 - RF ELECTROMAGNETIC FIELD (80 MHz to 6000 MHz)

Test System Setup



Test Standard

ETSI EN 301 489-1 V2.2.3 / EN 61000-4-3:2006+A1:2008 +A2: 2010
 Test Level 2 at 3V / m
 Test Levels and Performance Criterion

Test Level

Level	Field Strength (V/m)
1.	1
2.	3
3.	10
X.	Special

Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarizations of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera is used to monitor the EUT.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	3 V/m (Test Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80 - 6000 MHz
4. Sweeping time of radiated	0.0015 decade/s
5. Dwell Time	1 Sec.

Test Data and Setup Photo

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	57 %
ATM Pressure:	101.0 kPa

The testing was performed by Kiki Geng on 2019-11-23.

Test mode: TX&RX

Frequency Range (MHz)	Front (3 V/m)		Rear (3 V/m)		Left Side (3 V/m)		Right Side (3 V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-6000	A	A	A	A	A	A	A	A

Note: "A" stand for, during test, operate as intended No loss function, no degradation of performance, no unintentional transimissions. And after test, no degradation of performance, no loss of function, no loss of stored data or user programmable functions.

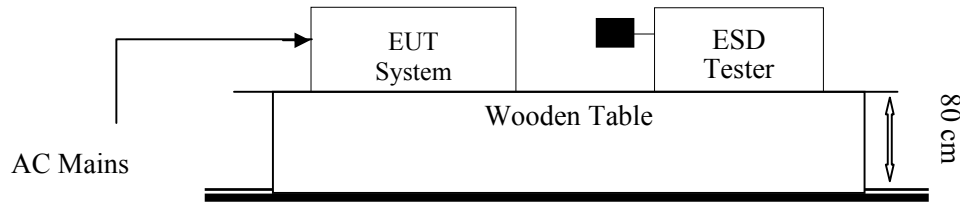
Test Result: Pass



Test Setup Photo

§7.2 - ELECTROSTATIC DISCHARGE

Test System Setup



Remark: ■ is the tip of the electrode

EN 61000-4-2 specifies that a tabletop EUT shall be placed on a non-conducting table which is 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on a insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.6 by 0.8-meter metal sheet (HCP) is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by 0.5-millimeter thick insulating material. A Vertical Coupling Plane (VCP) grounded on the ground plane through the same configuration as in the HCP is used.

Test Standard

ETSI EN 301 489-1 V2.2.3 / EN 61000-4-2:2009

Air Discharge at ± 2 kV, ± 4 kV, ± 8 kV

Contact Discharge at ± 2 kV, ± 4 kV

Test Level

Level	Test Voltage Contact Discharge (\pm kV)	Test Voltage Air Discharge (\pm kV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

Performance criterion: B

Test Procedure

Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Contact Discharge:

All the procedure shall be same as Section 8.3.1 of EN 61000-4-2, except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

Indirect discharge for horizontal coupling plane

At least 50 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

Indirect discharge for vertical coupling plane

At least 50 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m × 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

Test Data and Setup Photo

Environmental Conditions

Temperature:	25.9 °C
Relative Humidity:	49 %
ATM Pressure:	101.2 kPa

The testing was performed by Rain Yi on 2019-11-27.

Test mode: Tx/Rx

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2 Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-8 kV	+8 kV	-15 kV	+15 kV
Plastic Shell	A	A	A	A	A	A	/	/
Button	A	A	A	A	A	A	/	/
Switch	A	A	A	A	A	A	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

EN 61000-4-2 Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Screw	A	A	A	A	/	/	/	/

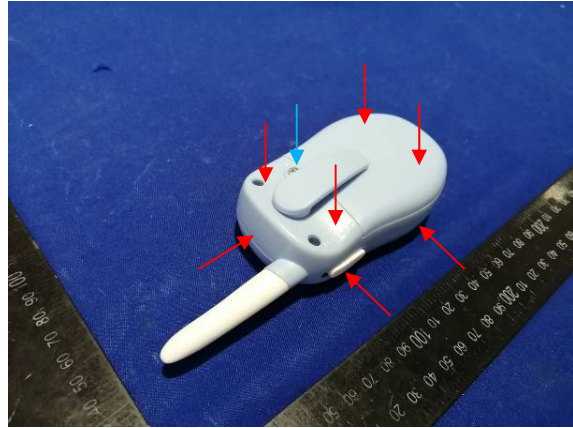
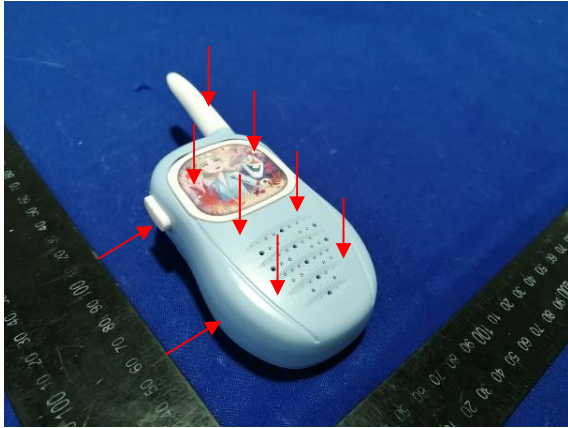
Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)


EN 61000-4-2 Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side	A	A	A	A	/	/	/	/
Back Side	A	A	A	A	/	/	/	/
Left Side	A	A	A	A	/	/	/	/
Right Side	A	A	A	A	/	/	/	/


Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

EN 61000-4-2 Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side	A	A	A	A	/	/	/	/
Back Side	A	A	A	A	/	/	/	/
Left Side	A	A	A	A	/	/	/	/
Right Side	A	A	A	A	/	/	/	/

ESD Location Photo



Air Discharge: 

Direct Contact: 



Test Setup Photo

EXHIBIT A - PRODUCT CE LABELING

Proposed CE Label Format



Specification: The CE marking shall be affixed visibly, legibly and indelibly to the radio equipment or to its data plate, unless that is not possible or not warranted on account of the nature of radio equipment. The CE marking shall also be affixed visibly and legibly to the packaging.

Proposed Location of Label on EUT

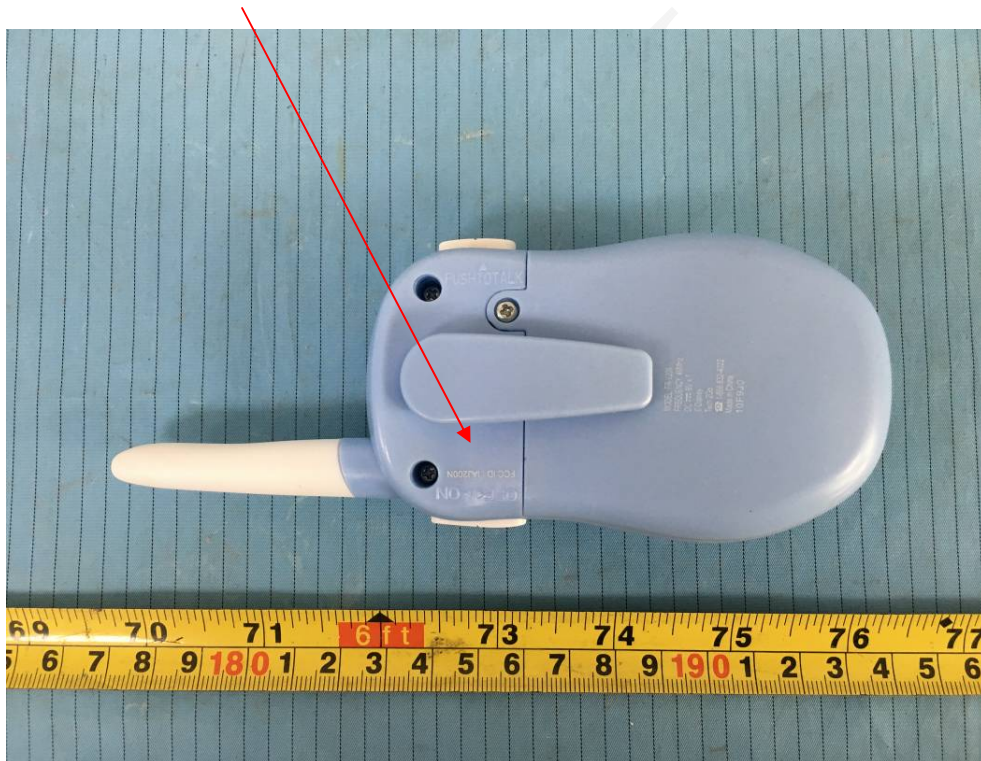


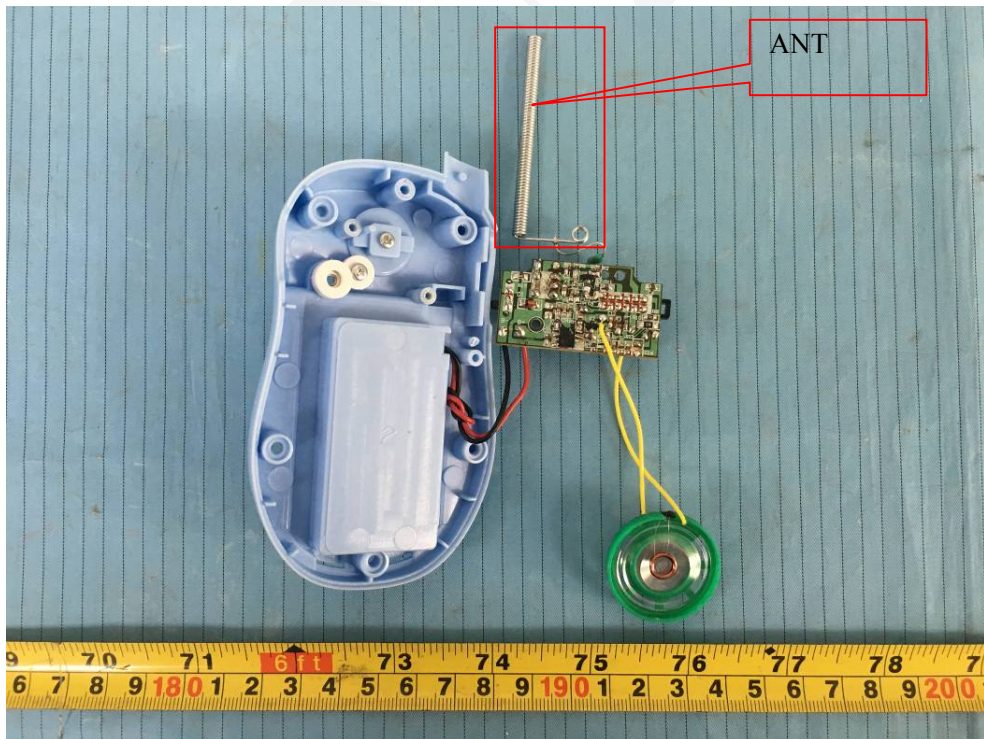
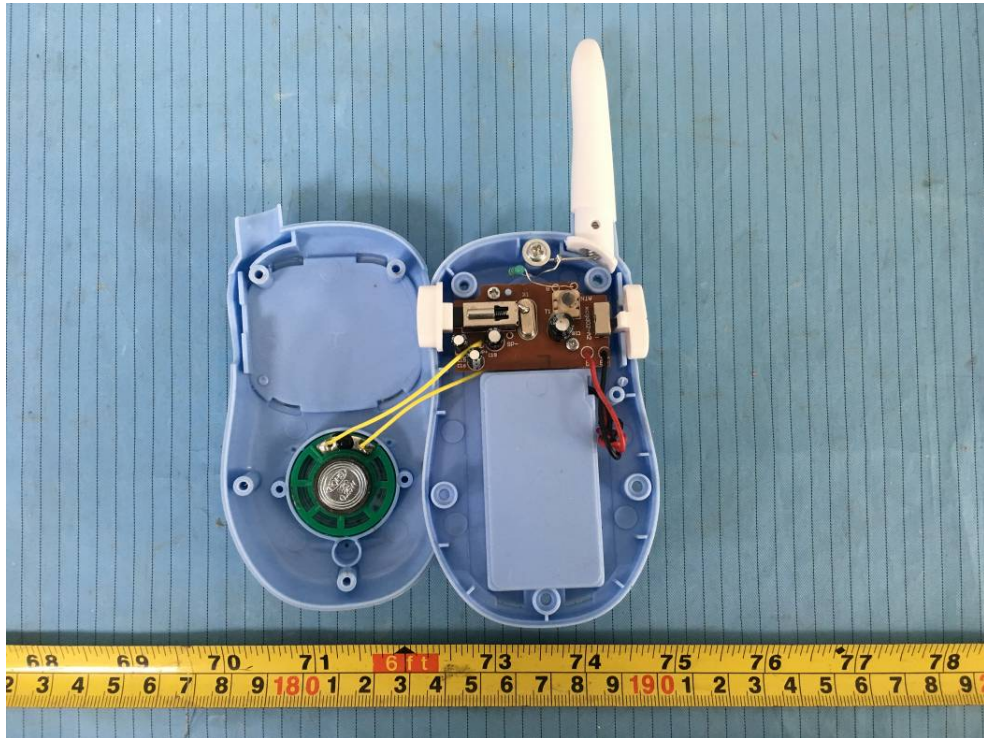
EXHIBIT B - EUT PHOTOGRAPHS











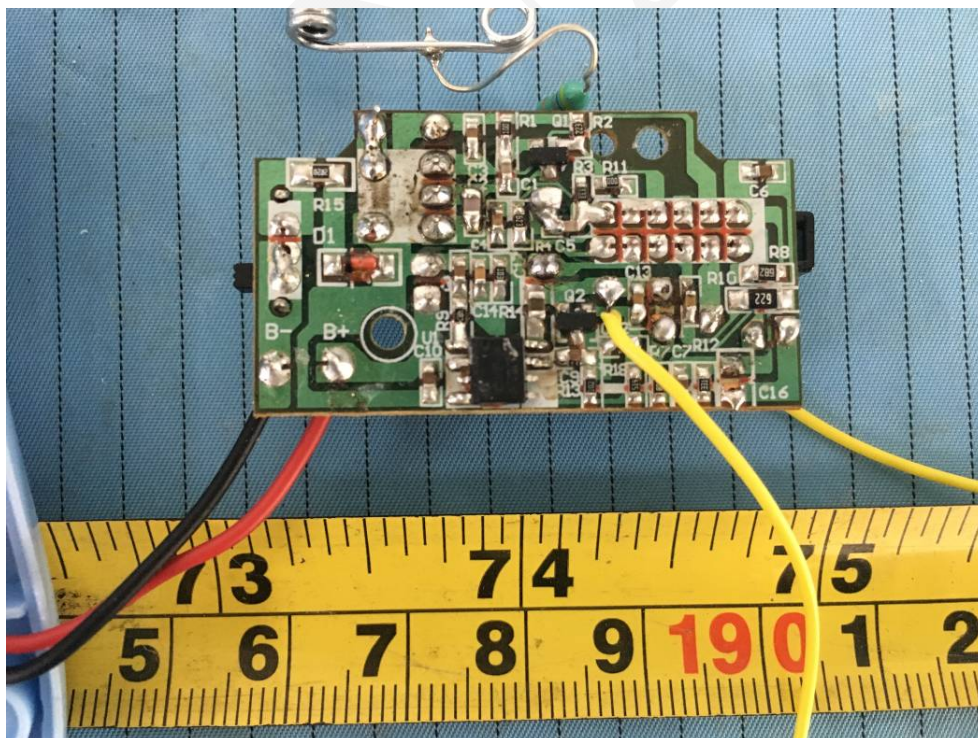
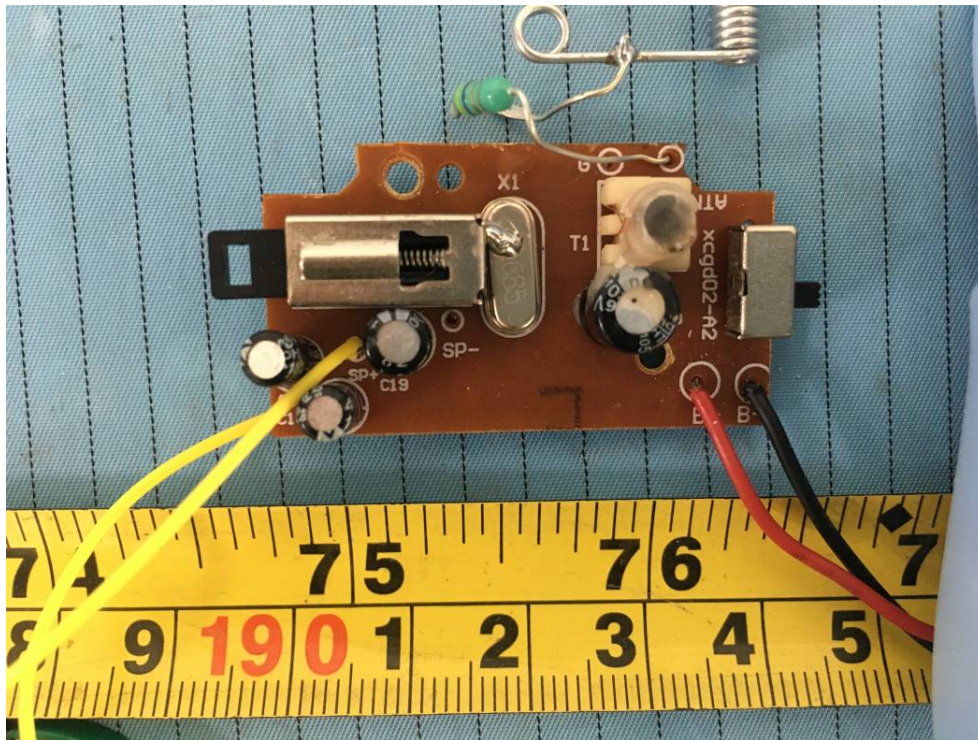
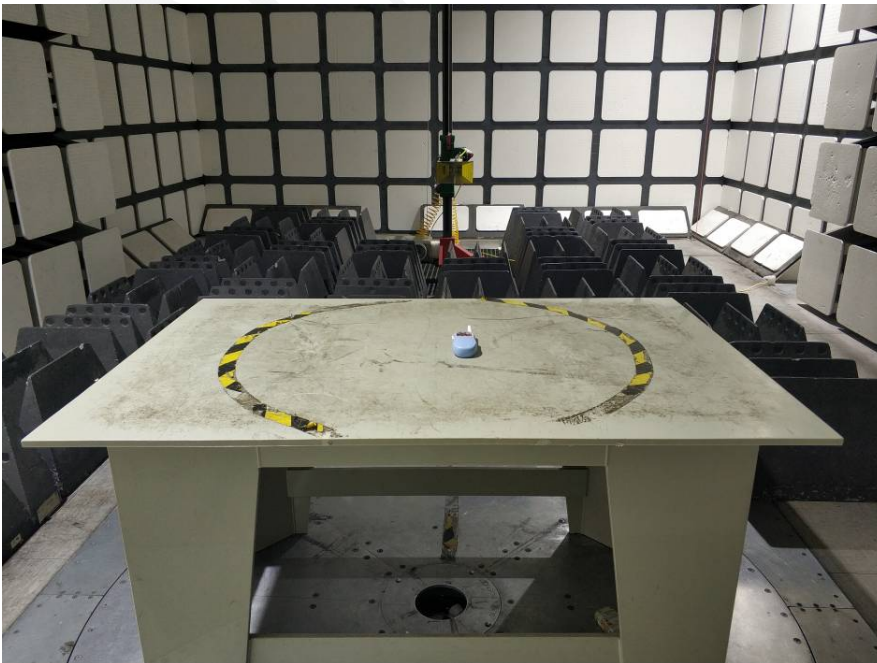


EXHIBIT C - TEST SETUP PHOTOGRAPHS

Radiated Emissions View (Below 1 GHz)



Radiated Emissions View (Above 1 GHz)



PRODUCT SIMILARITY DECLARATION LETTER

KIDdesigns Inc.

1299 Main Street, Rahway NJ 07065, U.S.A.
 Tel: 732-574-9000 Fax: 732-574-3797
 Email: Mchinone@sditech.com

Product Similarity Declaration

Dec. 6, 2019

To Whom It May Concern,

We, KIDdesigns Inc., hereby declare that we have a product named as V200 WALKIE TALKIES (Model number: FR-V200) was tested by BACL, meanwhile, for our marketing purpose, we would like to list series models (CA-V200CW, MS-V200, MS-V200MM, PW-V200, SM-V200, ST-V200, SW-V200E7, TS-V200, $M_1 - V200$ $M_2M_3M_4M_5M_6M_7M_8M_9M_{10}$) on reports and certificate, all the models are internal construction and electrically identical. Only different in colour and brands variation.

Model: $M_1 - V200$ $M_2M_3M_4M_5M_6M_7M_8M_9M_{10}$ ($M_1 - M_{10}$, please refer to following for details)

Model No. Table

Part of model #	M ₁	M ₂	M ₃	M ₄	M ₅	M ₆	M ₇	M ₈	M ₉	M ₁₀
Number of digit(s)	2	2	1	1	1 to 2	1	1 to 2	1	2	1
Description	2 digits alphabets by "a" - "Z" for brand	2 digits alphabets combination by "a" - "Z" special character version Or blank	"." Or blank	"U" for Europe version Or blank	"E" for English content Or "F" for English & French Or "3" for 3 language version Or "11" for Europe version with 11 languages	"X" for no sound chip Or "E" for Sound chip with speech or sound effect Or "M" for sound chip with Music	"0"-"9" for year version Or "V0" - "V9" for year version	"M" for Movie version brand Or blank	"AK" for Walmart exclusive Or "AP" for Apple exclusive Or "KS" for Kohl's exclusive Or "TG" for Target exclusive blank	"i" for inner carton required Or "z" for direct to consumer on-line packaging Or blank

We confirm that all information above is true, and we'll be responsible for all the consequences. Please contact me if you have any question.

Sincerely Yours,

Signature:  **KIDDESIGNS INC.**

Sammi Tsui

Title: Safety Engineer

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