CE

EMC TEST REPORT

Product	:	Handheld Beauty Oxygen injection
Trade mark	:	BEIYI
Model/Type reference	:	See to Clause 4.1
Serial Number	:	N/A
Ratings	:	DC7.4V,1.0-1.4A,<7.5W
Report Number	:	RCT20210106001IT
Date of Issue	:	Jan.6,2021
Regulations	:	See below

Test Standards	Results
☒ EN 55032: 2015	PASS
☒ EN 55035: 2017	PASS

Prepared for:

Shenzhen chuan cheng zhen pin ke ji you xian gong si
Guangdongsheng Dongguanshi tangxiazhen gaoliyilu8hao

Prepared by:

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SHENZHEN RCT TESTING TECHNOLOGY
RCT
Report Seal

Modification Record

No.	Last Report No.	Modification Description
1	RCT20210106001IT	First report

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(Note: N/A means not applicable)

1. GENERAL INFORMATION

Applicant: Shenzhen chuan cheng zhen pin ke ji you xian gong si

Guangdongsheng Dongguanshi tangxiazhen gaoliyilu8hao

Manufacturer: Shenzhen chuan cheng zhen pin ke ji you xian gong si

Guangdongsheng Dongguanshi tangxiazhen gaoliyilu8hao

Factory: Shenzhen chuan cheng zhen pin ke ji you xian gong si

Guangdongsheng Dongguanshi tangxiazhen gaoliyilu8hao

EMC Directive: 2014/30/EU

Product: Handheld Beauty Oxygen injection

Trade mark: BEIYI

Model/Type reference: See to Clause 4.1

Serial Number: N/A

Report Number: RCT20210106001IT

State of Sample(s): Normal

Sample Received Date: Dec.22,2020

Sample tested Date: Dec.22,2020 to Jan.6,2021

The tested sample(s) and the sample information are provided by the client.

2. TEST SUMMARY

The Product has been tested according to the following specifications:

EMISSION		
Standard	**Test Item**	**Test**
EN 55032	Conducted disturbance	N/A[1]
EN 55032	Radiated disturbance	Yes

IMMUNITY (EN 55035)		
Standard	**Test Item**	**Test**
IEC 61000-4-2	Electrostatic discharge (ESD)	Yes
IEC 61000-4-3	Radio-frequency electromagnetic field Immunity	Yes
IEC 61000-4-4	Electrical fast transients (EFT)	N/A[1]
IEC 61000-4-5	Surges	N/A[1]
IEC 61000-4-6	Radio-frequency continuous conducted Immunity	N/A[1]
IEC 61000-4-8	Power-frequency magnetic fields Immunity	N/A[2]
IEC 61000-4-11	Voltage dips and interruptions	N/A[1]

Remark:
1. The Product is powered by DC 7.4 USB port.
2. The Product doesn't contain any device susceptible to magnetic fields.

3. TEST UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Value (dB)
Radiated disturbance (30MHz to 1GHz)	4.9

4. PRODUCT INFORMATION AND TEST SETUP

4.1 PRODUCT INFORMATION

Ratings: DC7.4V,1.0-1.4A,<7.5W

The highest frequency of the internal sources of the EUT is less than 108 MHz:

☒ less than 108 MHz, the measurement shall only be made up to 1 GHz.
☐ between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.
☐ between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz.
☐ above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 6 GHz, whichever is less.

Models:BY-06

Models different: All models are identical except the color and model names agent and marketing purposes. The test model is BY-06 and the test results are applicable to the others.

4.2 TEST SETUP CONFIGURATION

See test photographs attached in Appendix 1 for the actual connections between Product and support equipment.

4.3 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
1.	Notebook	APPLE	A1367	C3LH61W3DT75	---	---
2.	Mouse	Lenovo	DOK-M680	60280683	Unshielded 1.50m	---
3.	Apple adapter	APPLE	A1436	---	---	---

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

5. FACILITIES AND ACCREDITATIONS

5.1 TEST FACILITY

All test facilities used to collect the test data are located at Room 2301,No.2 Building,Lixiang kewang Industrial park,No.35 Guanlan Road,Longhua district,Shenzhen,China.The site and apparatus are constructed in conformance with the requirements of CISPR 16-1-1 and other equivalent standards.

5.2 TEST EQUIPMENT LIST

Instrumentation: The following list contains equipments used at RCT for testing. The calibrations of the measuring instruments, including any accessories that may effect such calibration, are checked frequently to assure their accuracy. Adjustments are made and correction factors applied in accordance with instructions contained in the manual for the measuring instrument.

Equipment used during the tests:

3M Semi-anechoic Chamber (2)- Radiated disturbance Test				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
3M Chamber & Accessory Equipment	TDK	SAC-3	---	10/10/2021
Receiver	R&S	ESCI	100009	10/10/2021
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	401	10/10/2021
Multi device Controller	maturo	NCD/070/10711112	---	---

Shielding Room No. 1 - ESD Test (IEC 61000-4-2)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
ESD Simulator	TESEQ	NSG437	1182	10/10/2021

3M Full-anechoic Chamber - Radio-frequency electromagnetic field Immunity Test (IEC 61000-4-3)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Due Date**
3M Chamber &	ETS-LINDGREN	FACT-3	3510	10/10/2021

Accessory Equipment				
ESG Vector signal generators	Agilent	E4438C	MY42082153	10/10/2021
Power Amplifier	AR	150W1000	0322288	10/10/2021
Power Amplifier	AR	25S1G4A	0321112	10/10/2021
Power Amplifier	RFLIGHT	NTWPA-106050	18019001	10/10/2021
Stacked double Log.-Per. Antenna	schwarzbeck	STLP 9128 E special	9128ES-110	---
Horn Antenna	AR	ATH800M5GA	0342530	---

5.3 LABORATORY ACCREDITATIONS AND LISTINGS

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

6. RADIATED DISTURBANCE (RE)

6.1 LIMITS

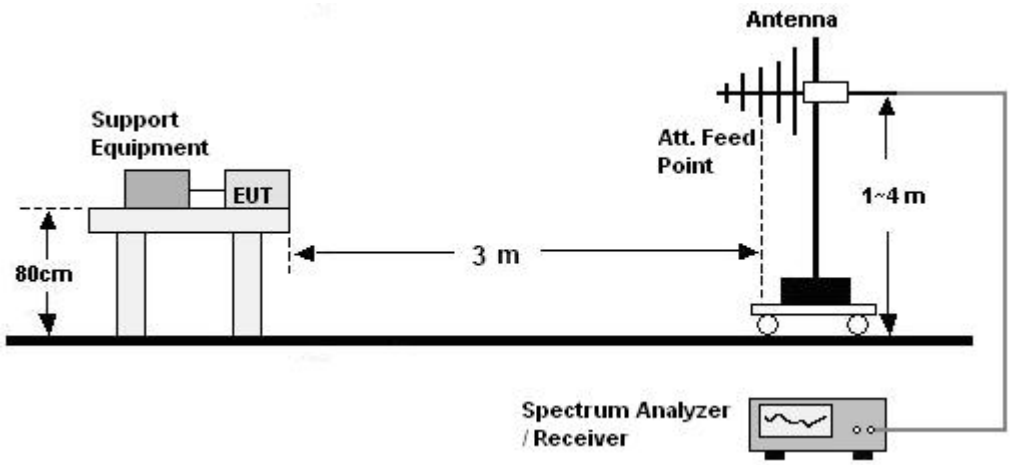
Requirements for radiated emissions at frequencies up to 1 GHz for Class B equipment

Frequency (MHz)	Quasi-peak limits at 3m dB(μV/m)
30-230	40
230-1000	47

NOTE: The lower limit shall apply at the transition frequencies.

6.2 BLOCK DIAGRAM OF TEST SETUP

30MHz ~ 1GHz:



6.3 TEST PROCEDURE

30MHz ~ 1GHz:

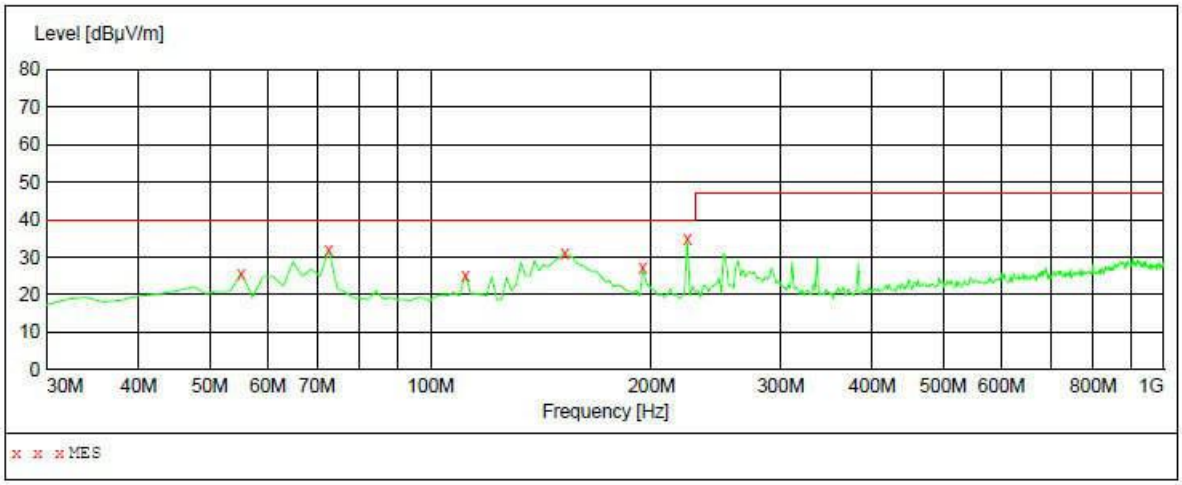
a. The Product was placed on the non-conductive turntable 0.8m above the ground at a chamber.

b. Set the spectrum analyzer/receiver in Peak detector, Max Hold mode, and 120 kHz RBW. Record the maximum field strength of all the pre-scan process in the full band when the antenna is varied between 1~4 m in both horizontal and vertical, and the turntable is rotated from 0 to 360 degrees.

c. For each frequency whose maximum record was higher or close to limit, measure its QP value: vary the antenna's height and rotate the turntable from 0 to 360 degrees to find the height and degree where Product radiated the maximum emission, then set the test frequency analyzer/receiver to QP Detector and specified bandwidth with Maximum Hold Mode, and record the maximum value.

6.4 GRAPHS AND DATA

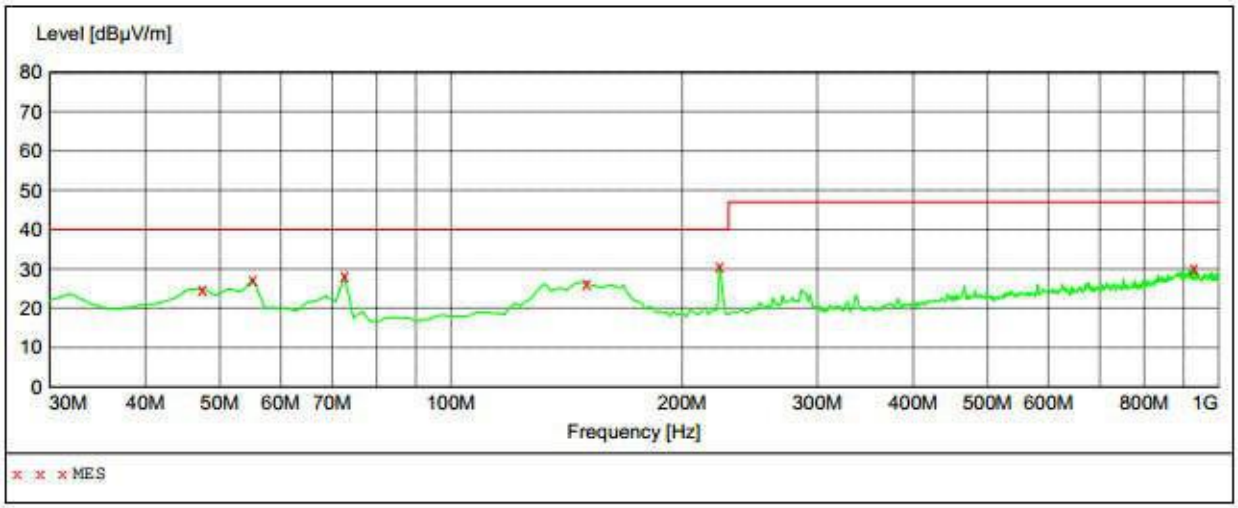
Product	:	Handheld Beauty Oxygen injection			
Model/Type reference	:	BY-06	**Temperature**	:	22℃
Power	:	DC 7.4			
Polarization	:	Horizontal	**Humidity**	:	55%



MEASUREMENT RESULT:

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
55.220000	25.80	14.4	40.0	14.2	QP	100.0	282.00	HORIZONTAL
72.680000	32.00	10.6	40.0	8.0	QP	200.0	278.00	HORIZONTAL
111.480000	25.30	12.8	40.0	14.7	QP	200.0	278.00	HORIZONTAL
152.220000	31.10	9.2	40.0	8.9	QP	200.0	47.00	HORIZONTAL
194.900000	27.10	12.0	40.0	12.9	QP	200.0	326.00	HORIZONTAL
224.000000	35.00	12.8	40.0	5.0	QP	200.0	299.00	HORIZONTAL

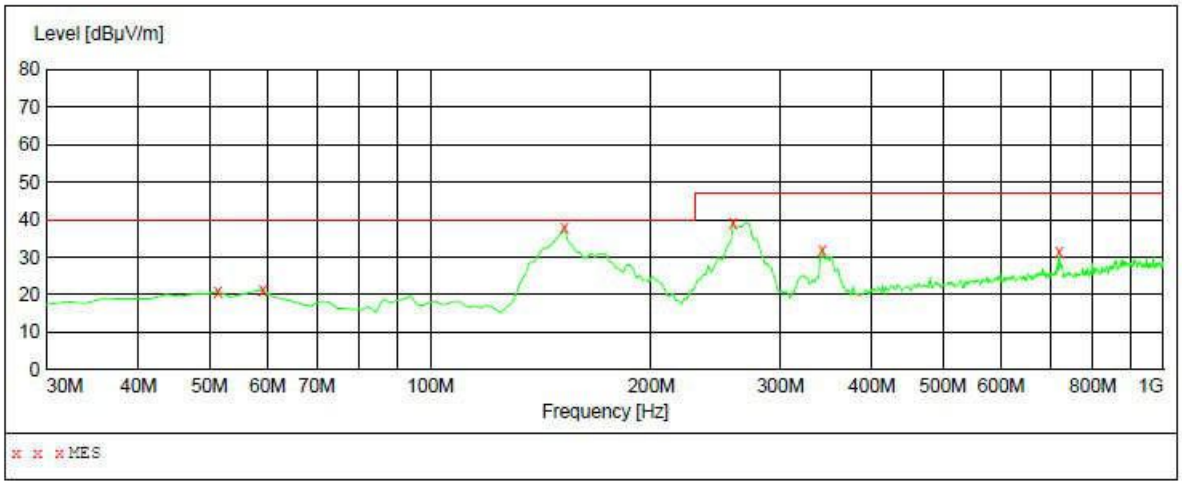
Product	:	Handheld Beauty Oxygen injection			
Model/Type reference	:	BY-06	**Temperature**	:	22℃
Power	:	DC 7.4			
Polarization	:	Vertical	**Humidity**	:	55%



MEASUREMENT RESULT:

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	25.00	14.8	40.0	15.0	QP	100.0	242.00	VERTICAL
55.220000	27.40	14.4	40.0	12.6	QP	200.0	226.00	VERTICAL
72.680000	28.20	10.6	40.0	11.8	QP	200.0	154.00	VERTICAL
150.280000	26.60	9.2	40.0	13.4	QP	100.0	10.00	VERTICAL
224.000000	30.70	12.8	40.0	9.3	QP	200.0	23.00	VERTICAL
930.160000	30.30	23.6	47.0	16.7	QP	100.0	61.00	VERTICAL

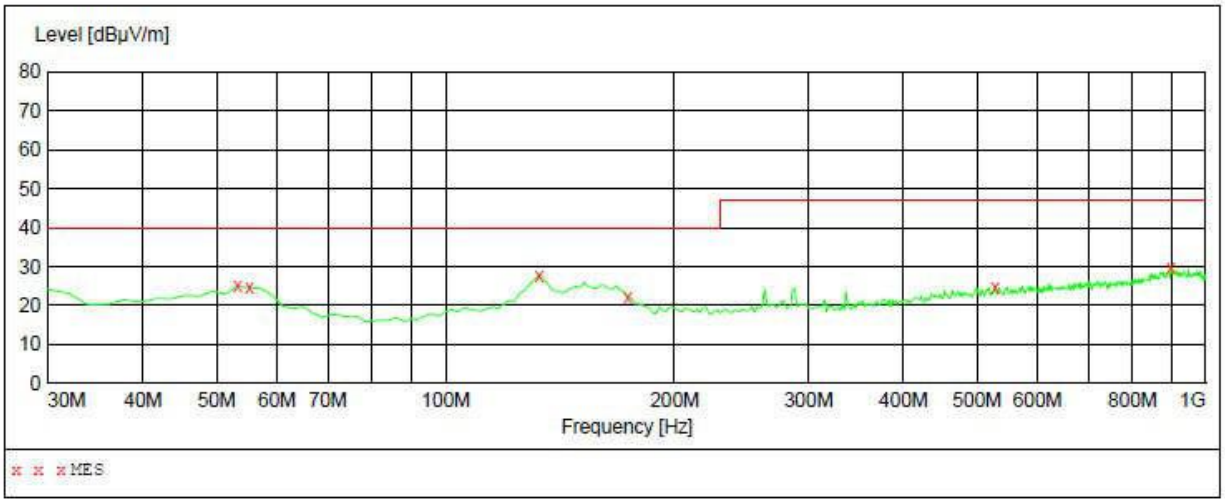
Product	:	Handheld Beauty Oxygen injection			
Model/Type reference	:	BY-06			
Power	:	DC 7.4	**Temperature**	:	22℃
Polarization	:	Horizontal	**Humidity**	:	55%



MEASUREMENT RESULT:

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
51.340000	21.00	14.9	40.0	19.0	QP	100.0	119.00	HORIZONTAL
59.100000	21.30	13.8	40.0	18.7	QP	200.0	69.00	HORIZONTAL
152.220000	38.00	9.2	40.0	2.0	QP	200.0	148.00	HORIZONTAL
258.920000	39.20	13.5	47.0	7.8	QP	100.0	10.00	HORIZONTAL
342.340000	31.90	15.2	47.0	15.1	QP	100.0	249.00	HORIZONTAL
720.640000	31.40	20.7	47.0	15.6	QP	200.0	159.00	HORIZONTAL

Product	:	Handheld Beauty Oxygen injection			
Model/Type reference	:	BY-06			
Power	:	DC 7.4	**Temperature**	:	22℃
Polarization	:	Vertical	**Humidity**	:	55%



MEASUREMENT RESULT:

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
53.280000	25.00	14.6	40.0	15.0	QP	100.0	98.00	VERTICAL
55.220000	24.60	14.4	40.0	15.4	QP	200.0	83.00	VERTICAL
132.820000	27.70	9.8	40.0	12.3	QP	100.0	278.00	VERTICAL
173.560000	22.00	10.0	40.0	18.0	QP	100.0	74.00	VERTICAL
528.580000	24.80	18.6	47.0	22.2	QP	200.0	277.00	VERTICAL
899.120000	30.00	23.9	47.0	17.0	QP	100.0	61.00	VERTICAL

Note: 1. Margin(dB)=Limit(dBuV/m)-Level(dBuV/m).
2. Level(dBuV/m)=Reading_Level(dBuV)+Transd(dB).
3. Transd(dB)=Cable loss(dB)+Ant Factor(dB)

7. IMMUNITY TEST

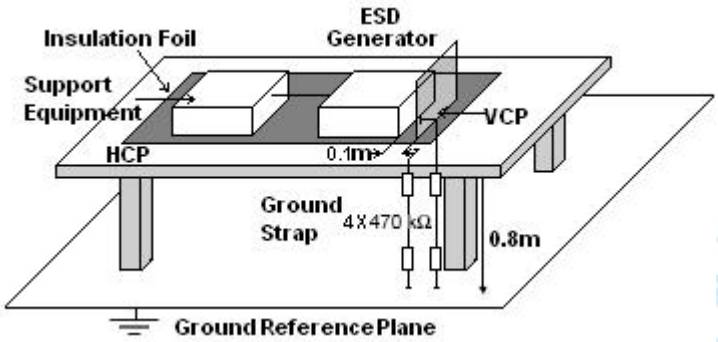
General Performance Criteria	
Product Standard	**EN 55035: 2017 clause 8**
CRITERION A	The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the 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.
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.
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.

7.1 ELECTROSTATIC DISCHARGE (ESD)

7.1.1 TEST SPECIFICATION

Basic Standard	:	EN 55035 & IEC 61000-4-2
Test Port	:	Enclosure port
Discharge Impedance	:	330 ohm / 150 pF
Discharge Mode	:	Single Discharge
Discharge Period	:	one second between each discharge

7.1.2 BLOCK DIAGRAM OF TEST SETUP



7.1.3 TEST PROCEDURE

a. Electrostatic discharges were applied only to those points and surfaces of the Product that are accessible to users during normal operation.

b. The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.

c. The time interval between two successive single discharges was at least 1 second.

d. The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the Product.

e. Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.

f. Air discharges were applied with the round discharge tip of the discharge electrode approaching the Product as fast as possible (without causing mechanical damage) to touch the Product. After each discharge, the ESD generator was removed from the Product and re-triggered for a new single discharge. The test was repeated until all discharges were complete.

g. At least ten single discharges (in the most sensitive polarity) were applied to the Horizontal Coupling Plane at points on each side of the Product. The ESD generator was positioned vertically at a distance of 0.1 meters from the Product with the discharge electrode touching the HCP.

h. At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the Product were completely illuminated. The VCP (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the Product.

7.1.4 RESULTS & PERFORMANCE

Product : Handheld Beauty Oxygen injection
Model/Type reference : BY-06
Power : DC 7.4 **Temperature** : 23℃
Humidity : 51%

Discharge Method	Discharge Position	Voltage (±kV)	Min. No. of Discharge per polarity (Each Point)	Required Level	Performance Criterion
Contact Discharge	Conductive Surfaces	4	10	B	A
	Indirect Discharge HCP	4	10	B	A
	Indirect Discharge VCP	4	10	B	A
Air Discharge	Slots, Apertures, and Insulating Surfaces	8	10	B	A

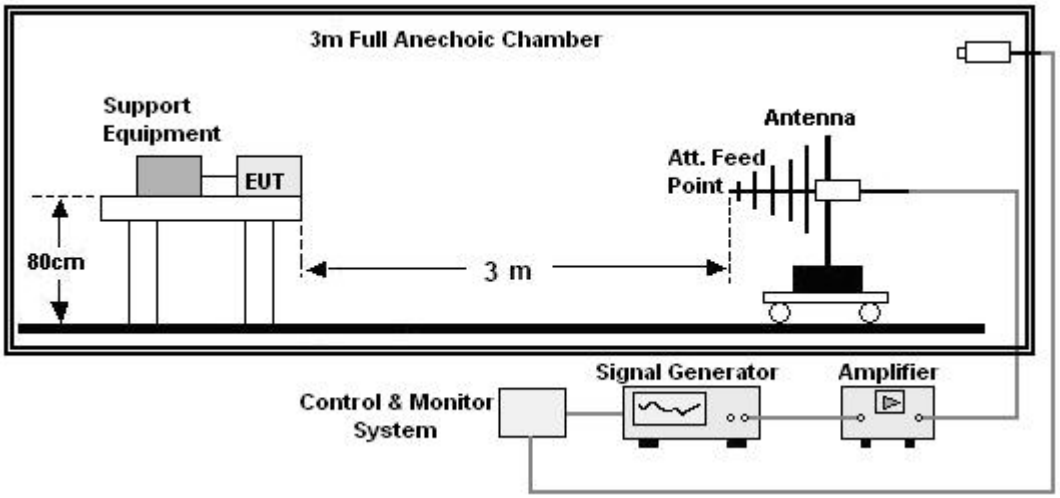
7.2 RADIO-FREQUENCY ELECTROMAGNETIC FIELD IMMUNITY

7.2.1 TEST SPECIFICATION

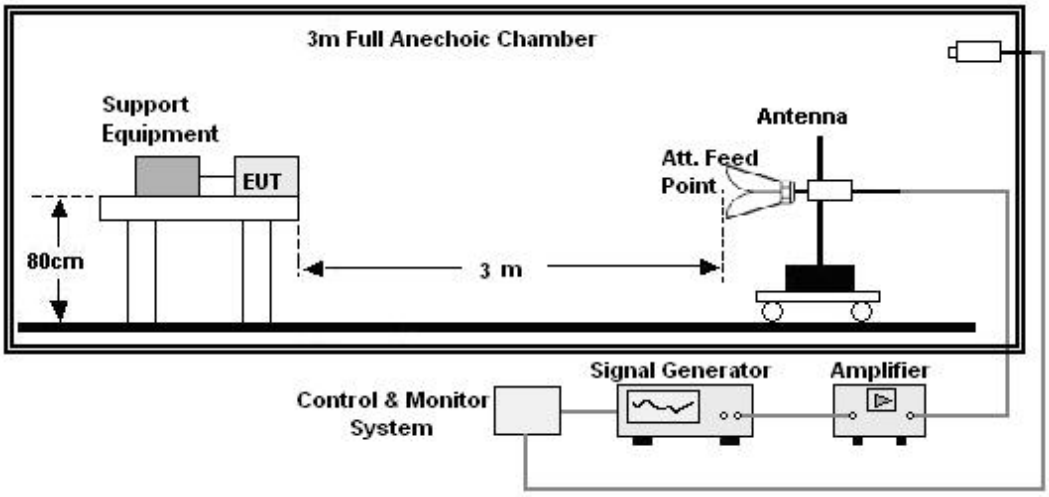
Basic Standard	:	EN 55035 & IEC 61000-4-3
Test Port	:	Enclosure port
Step Size	:	1%
Modulation	:	1kHz, 80% AM
Dwell Time	:	1 second
Polarization	:	Horizontal & Vertical

7.2.2 BLOCK DIAGRAM OF TEST SETUP

80-1000MHz:



1000-6000MHz:



7.2.3 TEST PROCEDURE

a. The testing was performed in a fully-anechoic chamber. The transmit antenna was located at a distance of 3 meters from the Product.

b. The frequency range is swept from 80MHz to 1000MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1%.

c. The test was performed with the Product exposed to both vertically and horizontally polarized fields on each of the four sides.

7.2.4 RESULTS & PERFORMANCE

Product : Handheld Beauty Oxygen injection
Model/Type reference : BY-06
Power : DC 7.4 **Temperature** : 23℃
Humidity : 51%

Frequency (MHz)	Position	Field Strength (V/m)	Required Level	Performance Criterion
80 - 1000	Front, Right, Back, Left Top, Bottom	3	A	A
1800		3	A	A
2600		3	A	A
3500		3	A	A
5000		3	A	A

APPENDIX 1 PHOTOGRAPHS OF PRODUCT

*** End of Report ***