

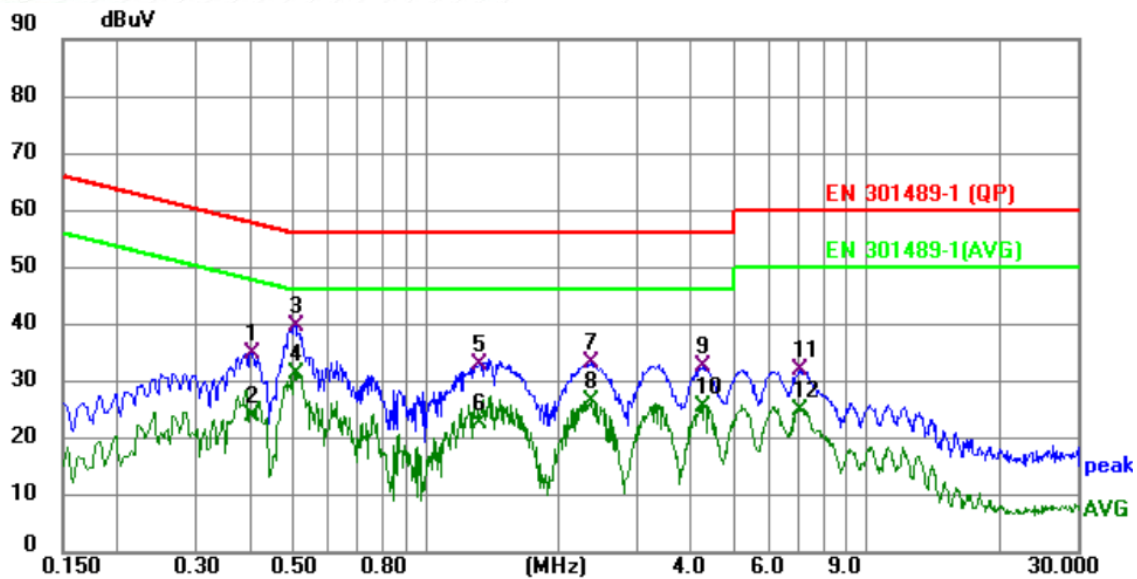
Appendix A for Emission and Immunity test results

Product Name: Wireless Earphone

Test Model: Neo 1a

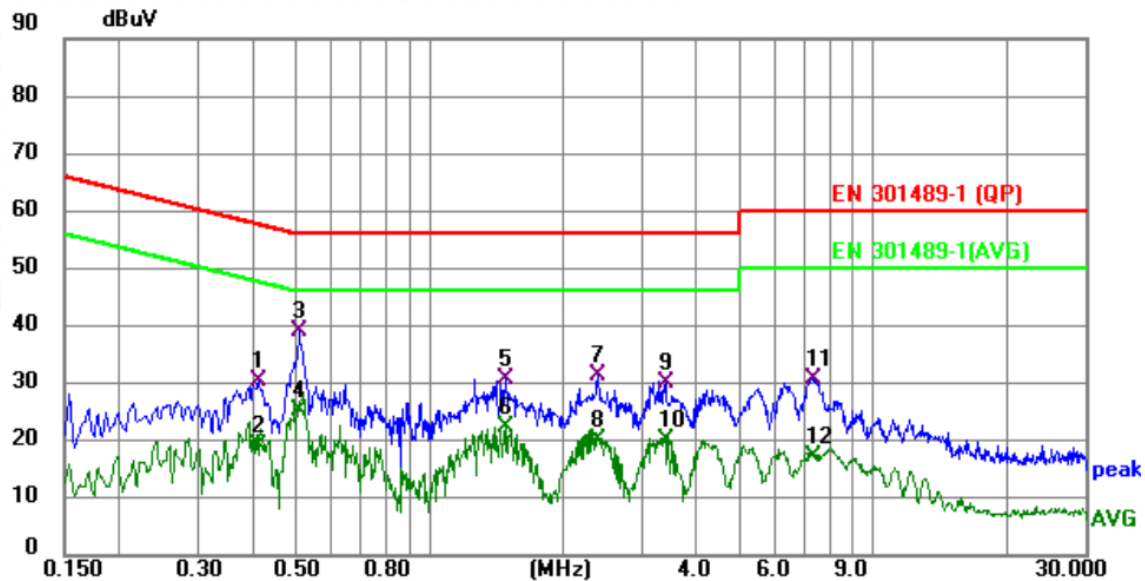
A.1 Line Conducted Emission

Test Model	Neo 1a	Test Mode	TM1
Environmental Conditions	24.3°C, 56% RH	Test Engineer	Peng Dong
Pol.	Line	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4020	24.83	10.16	34.99	57.81	-22.82	QP
2	0.4020	13.70	10.16	23.86	47.81	-23.95	AVG
3	0.5060	29.59	10.16	39.75	56.00	-16.25	QP
4 *	0.5060	21.07	10.16	31.23	46.00	-14.77	AVG
5	1.3180	22.75	10.19	32.94	56.00	-23.06	QP
6	1.3180	12.63	10.19	22.82	46.00	-23.18	AVG
7	2.3620	22.90	10.21	33.11	56.00	-22.89	QP
8	2.3620	16.35	10.21	26.56	46.00	-19.44	AVG
9	4.2260	22.25	10.24	32.49	56.00	-23.51	QP
10	4.2260	15.23	10.24	25.47	46.00	-20.53	AVG
11	7.0380	21.76	10.30	32.06	60.00	-27.94	QP
12	7.0380	14.54	10.30	24.84	50.00	-25.16	AVG

Test Model	Neo 1a	Test Mode	TM1
Environmental Conditions	24.3°C, 56% RH	Test Engineer	Peng Dong
Pol.	Neutral	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4100	20.33	10.19	30.52	57.65	-27.13	QP
2	0.4100	8.81	10.19	19.00	47.65	-28.65	AVG
3 *	0.5060	28.84	10.21	39.05	56.00	-16.95	QP
4	0.5060	14.90	10.21	25.11	46.00	-20.89	AVG
5	1.4780	20.55	10.18	30.73	56.00	-25.27	QP
6	1.4780	12.29	10.18	22.47	46.00	-23.53	AVG
7	2.3900	21.19	10.25	31.44	56.00	-24.56	QP
8	2.3900	9.87	10.25	20.12	46.00	-25.88	AVG
9	3.3940	19.78	10.20	29.98	56.00	-26.02	QP
10	3.3940	9.96	10.20	20.16	46.00	-25.84	AVG
11	7.2580	20.48	10.32	30.80	60.00	-29.20	QP
12	7.2580	6.99	10.32	17.31	50.00	-32.69	AVG

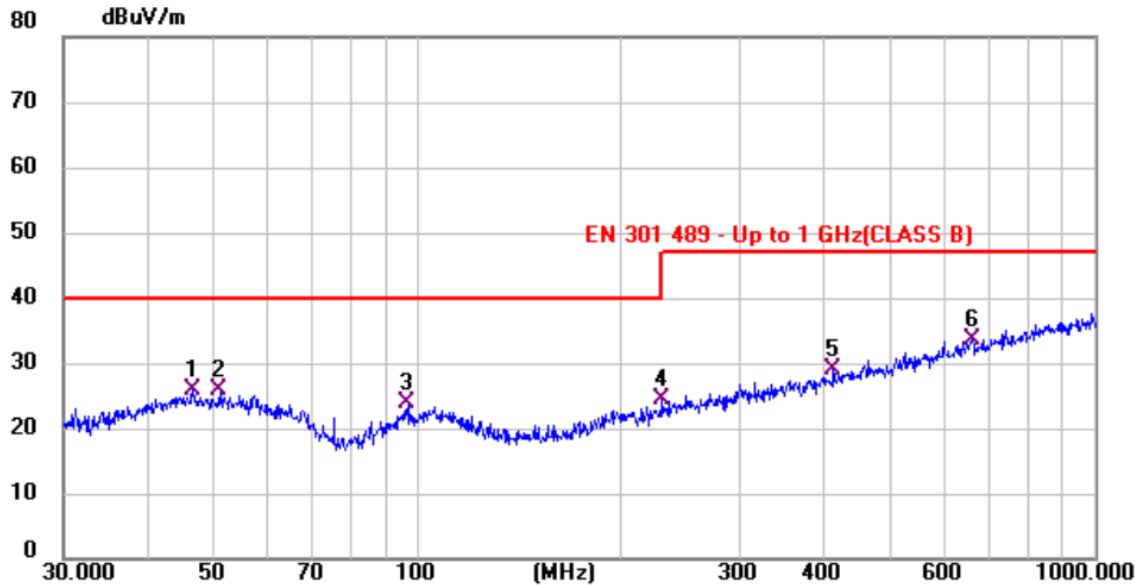
Note: For conducted emission and radiated emission test, a power supply of 230VAC and 120VAC was used for testing respectively, and only recorded the worst case of 230VAC.

Margin= Reading Level + Correct Factor – Limit

Correct Factor=Lisn Factor+Cable Factor+Insertion loss of Pulse Limiter

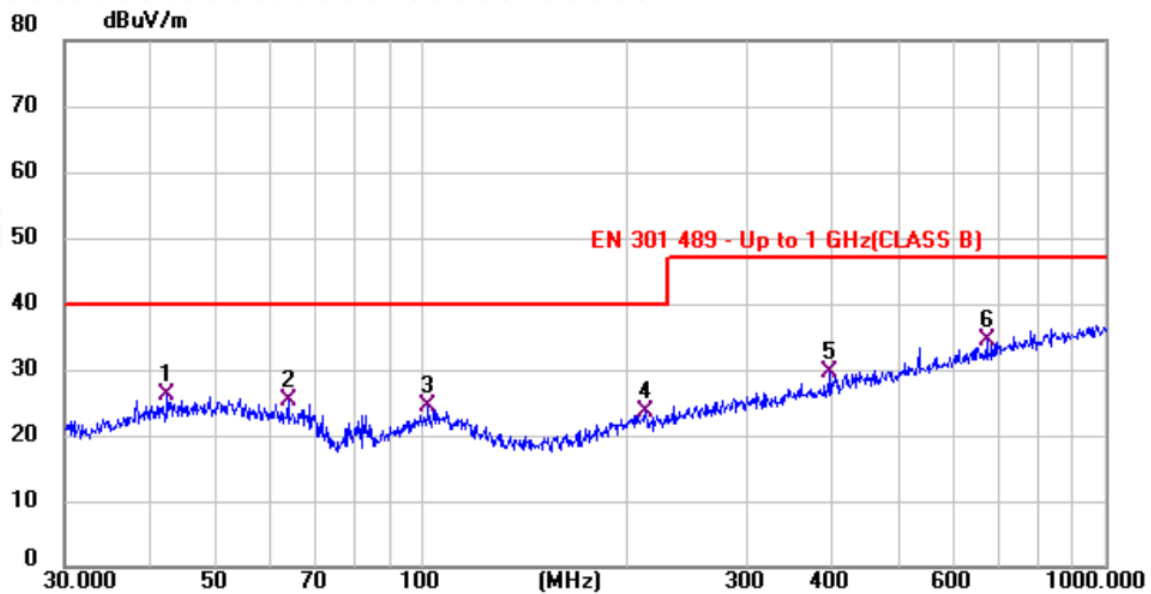
A.3 Radiated Disturbance

Test Model	Neo 1a	Test Mode	TM1
Environmental Conditions	23.9°C, 53% RH	Test Engineer	Peng Dong
Pol.	Horizontal	Detector Function	Quasi-peak
Distance	3m	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	46.6458	5.30	20.51	25.81	40.00	-14.19	QP
2	51.0538	5.32	20.50	25.82	40.00	-14.18	QP
3	96.7325	5.81	18.02	23.83	40.00	-16.17	QP
4	229.5948	5.13	19.18	24.31	40.00	-15.69	QP
5	410.5624	5.34	23.55	28.89	47.00	-18.11	QP
6 *	660.5711	5.97	27.66	33.63	47.00	-13.37	QP

Test Model	Neo 1a	Test Mode	TM1
Environmental Conditions	23.9℃, 53% RH	Test Engineer	Peng Dong
Pol.	Vertical	Detector Function	Quasi-peak
Distance	3m	Test Voltage	AC 230V/50Hz

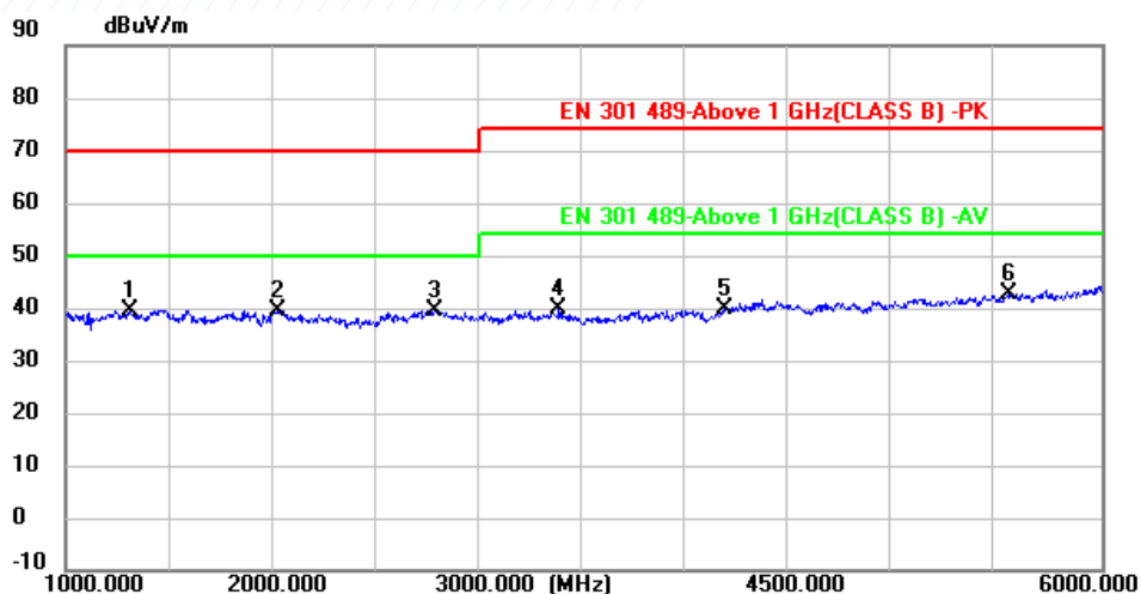


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	42.4136	6.05	20.22	26.27	40.00	-13.73	QP
2	63.5913	6.80	18.52	25.32	40.00	-14.68	QP
3	102.1356	5.75	18.65	24.40	40.00	-15.60	QP
4	212.4557	5.23	18.25	23.48	40.00	-16.52	QP
5	395.3740	6.45	23.21	29.66	47.00	-17.34	QP
6 *	672.5496	6.66	27.81	34.47	47.00	-12.53	QP

Note: Margin= Reading Level + Correct Factor – Limit

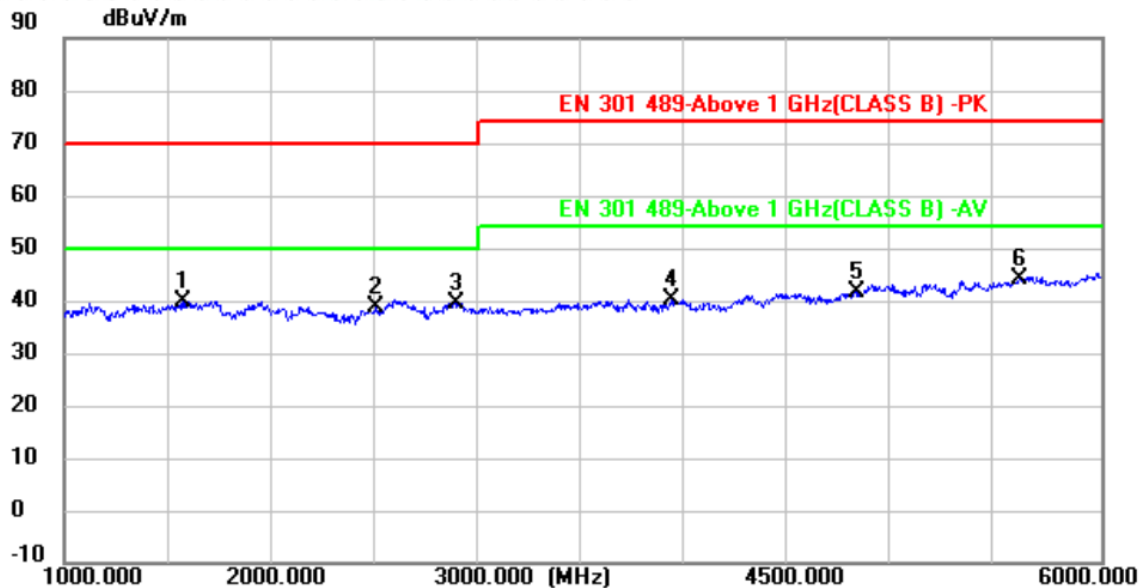
Correct Factor=Antenna Factor+Cable Factor – Pre-Amplifier Factor

Test Model	Neo 1a	Test Mode	TM1 (Above 1GHz)
Environmental Conditions	23.9°C, 53% RH	Test Engineer	Peng Dong
Pol.	Horizontal	Detector Function	Peak+Average
Distance	3m	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1310.0000	54.84	-15.24	39.60	70.00	-30.40	peak
2 *	2020.0000	52.65	-13.03	39.62	70.00	-30.38	peak
3	2780.0000	49.98	-10.36	39.62	70.00	-30.38	peak
4	3380.0000	49.43	-9.45	39.98	74.00	-34.02	peak
5	4180.0000	47.77	-7.83	39.94	74.00	-34.06	peak
6	5550.0000	46.06	-3.25	42.81	74.00	-31.19	peak

Test Model	Neo 1a	Test Mode	TM1 (Above 1GHz)
Environmental Conditions	23.9°C, 53% RH	Test Engineer	Peng Dong
Pol.	Vertical	Detector Function	Peak+Average
Distance	3m	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1570.0000	54.63	-14.70	39.93	70.00	-30.07	peak
2	2505.0000	50.14	-11.33	38.81	70.00	-31.19	peak
3	2890.0000	49.59	-9.98	39.61	70.00	-30.39	peak
4	3930.0000	48.75	-8.66	40.09	74.00	-33.91	peak
5	4820.0000	46.76	-5.01	41.75	74.00	-32.25	peak
6 *	5610.0000	47.51	-3.31	44.20	74.00	-29.80	peak

Note:

1. Field strength limits for frequency above 1000MHz are based on average limits. However, Peak mode field strength shall not exceed the average limits specified plus 20dB.
2. Measurements above show only up to 6 maximum emissions noted.
3. Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. Factor = Antenna Factor + Cable Loss + Amplifier Factor
 Emission Level = Reading level + Factor
 Margin = Emission Level - Limit

A.4 Harmonic Current Emissions

Because power of EUT less than 75W, According standard EN 61000-3-2, Harmonic current unnecessary to test.

A.5 Voltage Fluctuation and Flicker

Test Model	Neo 1a	Test Engineer	Peng Dong
Test Voltage	AC 230V/50Hz	Test Mode	TM1
Environmental Conditions	24.5°C, 55.7% RH		

Test Result: **Pass**

Status: Test Completed

Load Power: 1.88

Power Factor: 0.34

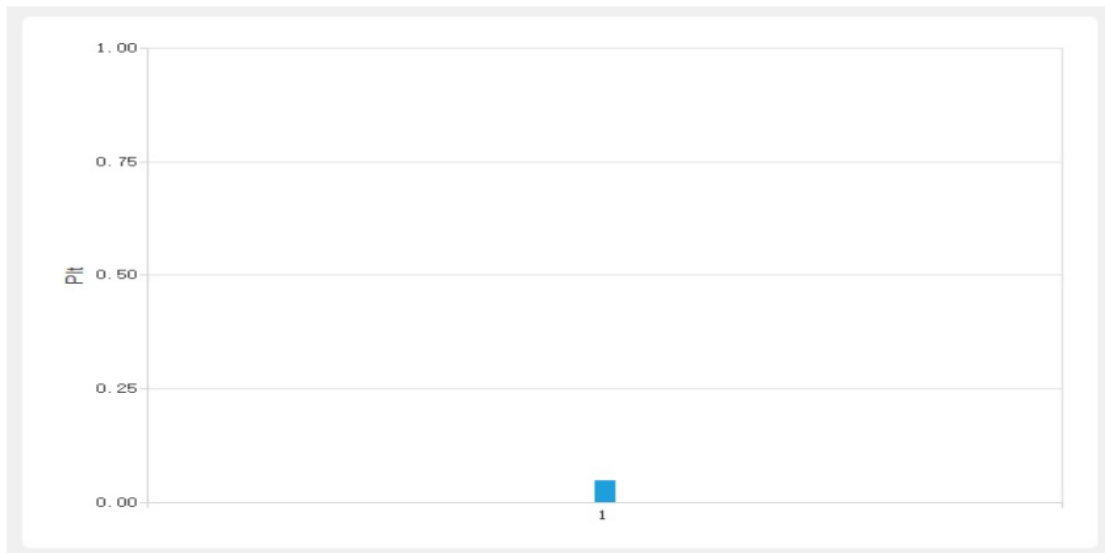
Load Current: 23.82

Crest Factor: 6.43

Nominal Voltage: 230.78

Pst and limit line

European Limits



Result:

T-max(ms): 0.00ms Test limit(ms): 500ms pass

Highest dc(%): 0.00% Test limit(%): 3.3% pass

Highest dmax(%): 0.00% Test limit(%): 4% pass

Highest Pst (10 min. period): 0.05 Test limit: 1 pass

A.6 RF Electromagnetic Field (80 MHz - 6000 MHz)

Test Model	Neo 1a	Test Engineer	Peng Dong
Environmental Conditions	23.2°C, 52.2% RH	Test Voltage	AC 230V/50Hz

TM1 Test Result:

EUT Working Mode	Antenna Polarity	Frequency (MHz)	Fielded Strength (V/m)	Observation	Position	Conclusion
Operating Mode	Vertical	80-6000	3	CT, CR	Front, Right, Left, Back, Top, Bottom	Pass
	Horizontal	80-6000	3	CT, CR	Front, Right, Left, Back, Top, Bottom	Pass

TM2 Test Result:

EUT Working Mode	Antenna Polarity	Frequency (MHz)	Fielded Strength (V/m)	Observation	Position	Conclusion
Idle	Vertical	80-6000	3	See Note	Front, Right, Left, Back, Top, Bottom	Pass
	Horizontal	80-6000	3	See Note	Front, Right, Left, Back, Top, Bottom	Pass

Note: The EUT performance complied with performance criteria for CT&CR to Function and there is no any degradation of performance and function.

For equipment that supports a PER, the minimum performance level shall be PER less than or equal to 10%.

A.7 Electrostatic Discharge

Electrostatic Discharge Test Results			
Standard	<input type="checkbox"/> IEC 61000-4-2 <input checked="" type="checkbox"/> EN 61000-4-2		
Applicant	Shenzhen Huafurui Technology Co., Ltd.		
EUT	Wireless Earphone	Temperature	22.3℃
M/N	Neo 1a	Humidity	52.4%
Criterion	B	Pressure	1021mbar
Test Mode	TM1-TM2	Test Engineer	Peng Dong
TEST RESULT OF TM1			
Test Voltage	Coupling	Observation	Result (Pass/Fail)
±2KV, ±4kV	Contact Discharge	TT, TR	Pass
±2KV, ±4kV, ±8kV	Air Discharge	TT, TR	Pass
±2KV, ±4kV	Indirect Discharge HCP	TT, TR	Pass
±2KV, ±4kV	Indirect Discharge VCP	TT, TR	Pass
TEST RESULT OF TM2			
Test Voltage	Coupling		Result (Pass/Fail)
±2KV, ±4kV	Contact Discharge		Pass
±2KV, ±4kV, ±8kV	Air Discharge		Pass
±2KV, ±4kV	Indirect Discharge HCP		Pass
±2KV, ±4kV	Indirect Discharge VCP		Pass
Note: The EUT performance complied with performance criteria for TT&TR Function and there is no any degradation of performance and function.			

A.8 Electrical Fast Transient Immunity

Electrical Fast Transient/Burst Test Results				
Standard	<input type="checkbox"/> IEC 61000-4-4 <input checked="" type="checkbox"/> EN 61000-4-4			
Applicant	Shenzhen Huafurui Technology Co., Ltd.			
EUT	Wireless Earphone	Temperature	22.5℃	
M/N	Neo 1a	Humidity	52.4%	
Test Mode	TM1-TM2	Criterion	B	
Test Engineer	Peng Dong			
TEST RESULT OF TM1				
Line	Test Voltage	Polarity	Observation	Result (Pass/Fail)
L	1KV	+/-	TT, TR	Pass
N	1KV	+/-	TT, TR	Pass
L-N	1KV	+/-	TT, TR	Pass
TEST RESULT OF TM2				
Line	Test Voltage	Polarity	Result (Pass/Fail)	
L	1KV	+/-	Pass	
N	1KV	+/-	Pass	
L-N	1KV	+/-	Pass	

A.9 RF Common Mode

Injected Currents Susceptibility Test Results			
Standard	<input type="checkbox"/> IEC 61000-4-6 <input checked="" type="checkbox"/> EN 61000-4-6		
Applicant	Shenzhen Huafului Technology Co., Ltd.		
EUT	Wireless Earphone	Temperature	21.7℃
M/N	Neo 1a	Humidity	53.6%
Test Mode	TM1-TM2	Criterion	A
Test Engineer	Peng Dong		

TEST RESULT OF TM1				
Frequency Range (MHz)	Strength (Unmodulated)	Injected Position	Observation	Result (Pass/Fail)
0.15 ~ 80	3V	AC Mains	CT, CR	Pass
TEST RESULT OF TM2				
Frequency Range (MHz)	Strength (Unmodulated)	Injected Position	Result (Pass/Fail)	
0.15 ~ 80	3V	AC Mains	Pass	
Remark: 1. Modulation Signal:1kHz 80% AM				

Note: The EUT performance complied with performance criteria for CT&CR Function and there is no any degradation of performance and function.

For equipment that supports a PER, the minimum performance level shall be PER less than or equal to 10%.

A.10 Surges, Line to Line and Line to Ground

Surge Immunity Test Result			
Standard	<input type="checkbox"/> IEC 61000-4-5 <input checked="" type="checkbox"/> EN 61000-4-5		
Applicant	Shenzhen Huafurui Technology Co., Ltd.		
EUT	Wireless Earphone	Temperature	23.8℃
M/N	Neo 1a	Humidity	52.7%
Test Mode	TM1-TM2	Criterion	B
Test Engineer	Peng Dong		

TEST RESULT OF TM1						
Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Observation	Result (Pass/Fail)
L-N	+	0°, 90°, 180°, 270°	5	1.0	TT, TR	Pass
	-	0°, 90°, 180°, 270°	5	1.0	TT, TR	Pass
TEST RESULT OF TM2						
Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)		Result (Pass/Fail)
L-N	+	0°, 90°, 180°, 270°	5	1.0		Pass
	-	0°, 90°, 180°, 270°	5	1.0		Pass
Note: Verification shall be performed on the generators and coupling/decoupling network prior to the test.						

A.11 Voltage Dips/Interruptions Immunity Test

Voltage Dips And Interruptions Test Results			
Standard	<input type="checkbox"/> IEC 61000-4-11 <input checked="" type="checkbox"/> EN 61000-4-11		
Applicant	Shenzhen Huaafurui Technology Co., Ltd.		
EUT	Wireless Earphone	Temperature	24.3°C
M/N	Neo 1a	Humidity	53.5%
Test Mode	TM1-TM2	Criterion	B&C
Test Engineer	Peng Dong		

TEST RESULT OF TM1				
Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in periods)	Observation	Result (Pass/Fail)
0	100	0.5P	TT, TR	Pass
0	100	1P	TT, TR	Pass
70	30	25P	TT, TR	Pass
0	100	250P	TT, TR	Pass
TEST RESULT OF TM2				
Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in periods)	Result (Pass/Fail)	
0	100	0.5P	Pass	
0	100	1P	Pass	
70	30	25P	Pass	
0	100	250P	Pass	