



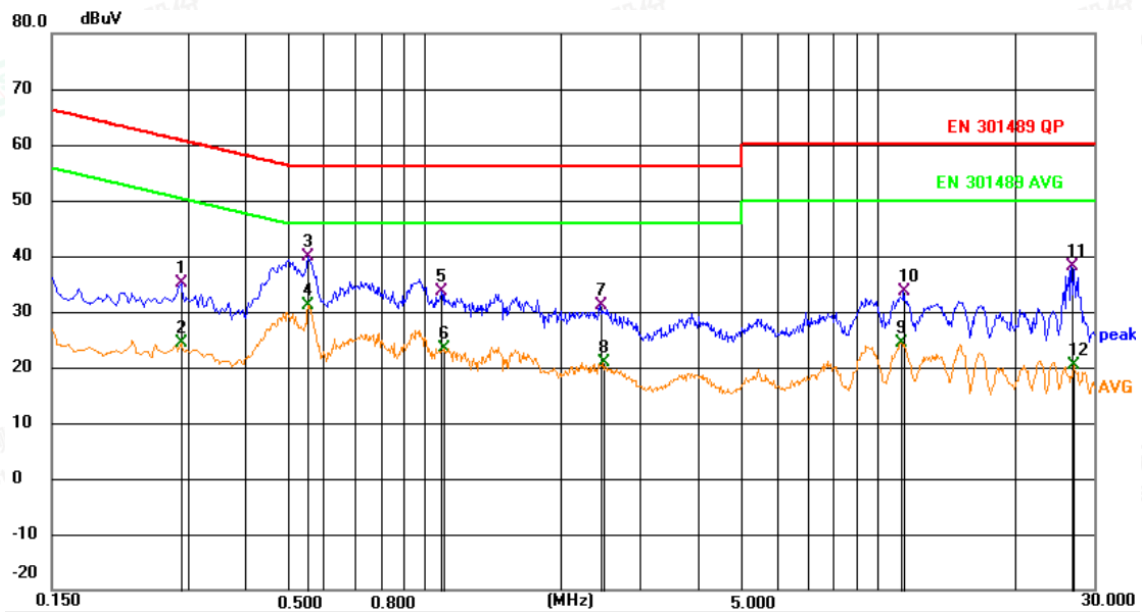
Appendix A for Emission and Immunity test results

Product Name: True wireless earbuds

Test Model: T36

A.1 Line Conducted Emission

Test Model	T36	Test Mode	TM1
Environmental Conditions	24.4°C, 53.0% RH	Test Engineer	Eason Zhou
Pol.	Line	Test Voltage	AC 230V/50Hz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2896	15.01	20.15	35.16	60.54	-25.38	QP	
2		0.2896	4.15	20.15	24.30	50.54	-26.24	AVG	
3		0.5550	19.60	20.17	39.77	56.00	-16.23	QP	
4	*	0.5550	10.86	20.17	31.03	46.00	-14.97	AVG	
5		1.0905	13.49	20.14	33.63	56.00	-22.37	QP	
6		1.1085	3.24	20.14	23.38	46.00	-22.62	AVG	
7		2.4360	10.79	20.25	31.04	56.00	-24.96	QP	
8		2.4856	0.55	20.26	20.81	46.00	-25.19	AVG	
9		11.2741	3.91	20.39	24.30	50.00	-25.70	AVG	
10		11.4316	13.17	20.39	33.56	60.00	-26.44	QP	
11		26.7856	17.87	20.20	38.07	60.00	-21.93	QP	
12		27.1096	0.27	20.17	20.44	50.00	-29.56	AVG	



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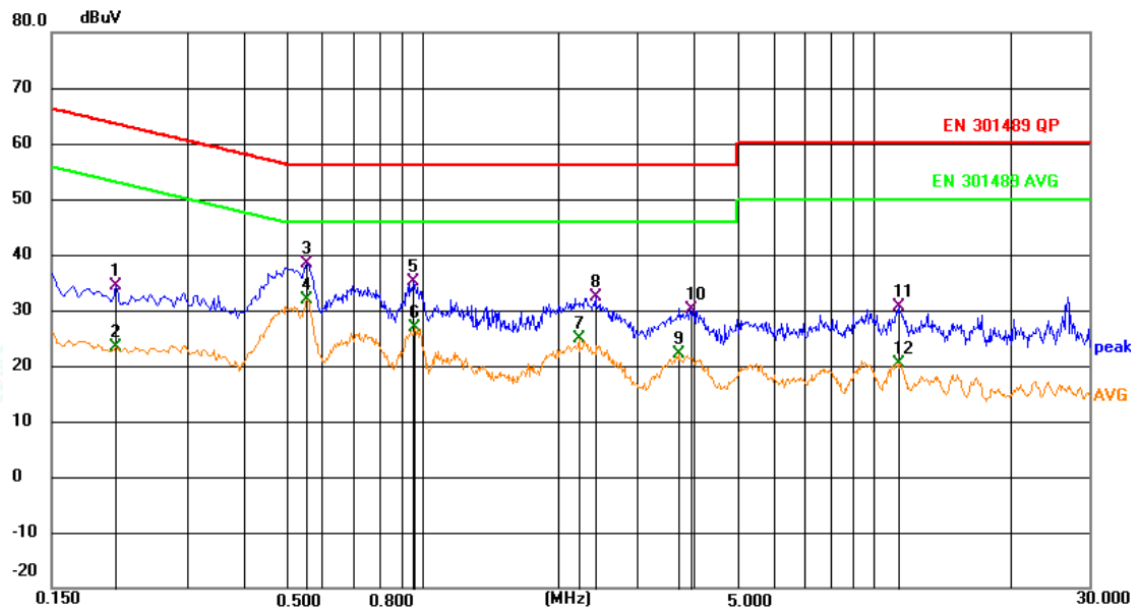
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Test Model	T36	Test Mode	TM1
Environmental Conditions	24.4°C, 53.0% RH	Test Engineer	Eason Zhou
Pol.	Neutral	Test Voltage	AC 230V/50Hz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2086	14.28	20.06	34.34	63.26	-28.92	QP	
2		0.2086	3.31	20.06	23.37	53.26	-29.89	AVG	
3		0.5550	18.40	19.92	38.32	56.00	-17.68	QP	
4	*	0.5550	12.00	19.92	31.92	46.00	-14.08	AVG	
5		0.9555	15.07	20.13	35.20	56.00	-20.80	QP	
6		0.9600	6.70	20.12	26.82	46.00	-19.18	AVG	
7		2.2200	4.55	20.24	24.79	46.00	-21.21	AVG	
8		2.4135	12.05	20.22	32.27	56.00	-23.73	QP	
9		3.6961	2.02	20.08	22.10	46.00	-23.90	AVG	
10		3.9031	9.96	20.05	30.01	56.00	-25.99	QP	
11		11.3416	10.42	20.21	30.63	60.00	-29.37	QP	
12		11.4001	0.29	20.21	20.50	50.00	-29.50	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= Liss Factor+Cable Factor



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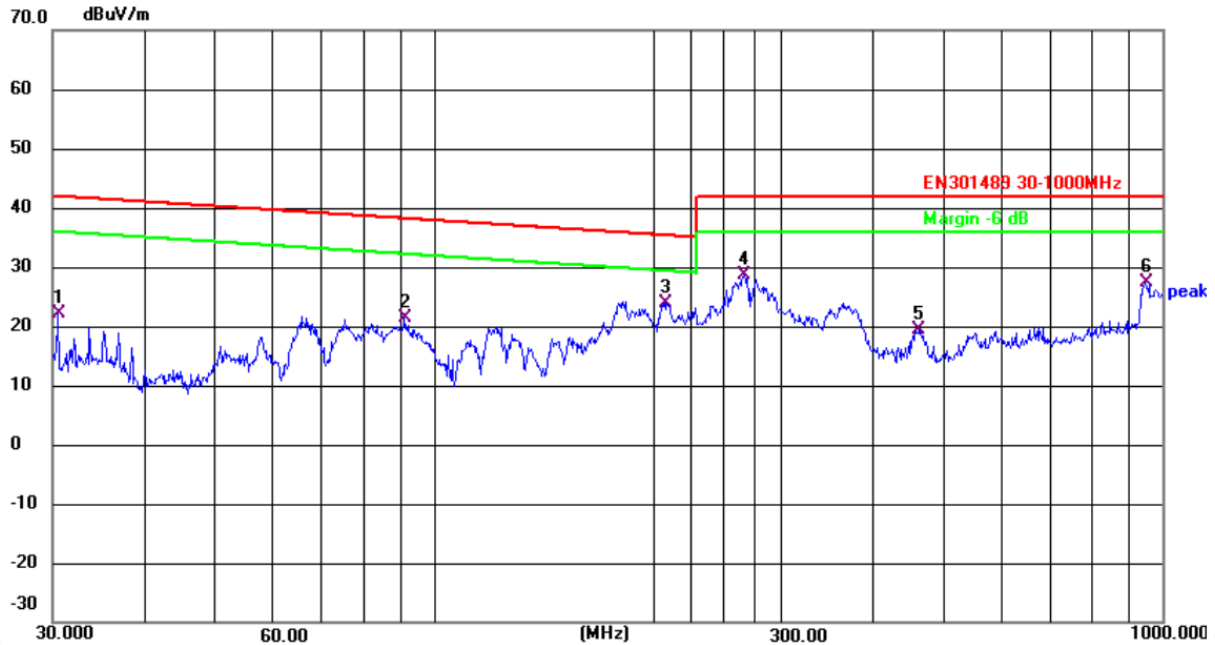
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A.3 Radiated Disturbance

Test Model	T36	Test Mode	TM1
Environmental Conditions	23.8°C, 52.1% RH	Test Engineer	Eason Zhou
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	30.5306	40.48	-18.39	22.09	41.94	-19.85	QP
2	91.1745	40.14	-18.80	21.34	38.18	-16.84	QP
3	208.5801	41.09	-17.16	23.93	35.34	-11.41	QP
4	266.6089	44.11	-15.45	28.66	42.00	-13.34	QP
5	463.9696	33.77	-14.35	19.42	42.00	-22.58	QP
6	948.7609	35.21	-7.86	27.35	42.00	-14.65	QP



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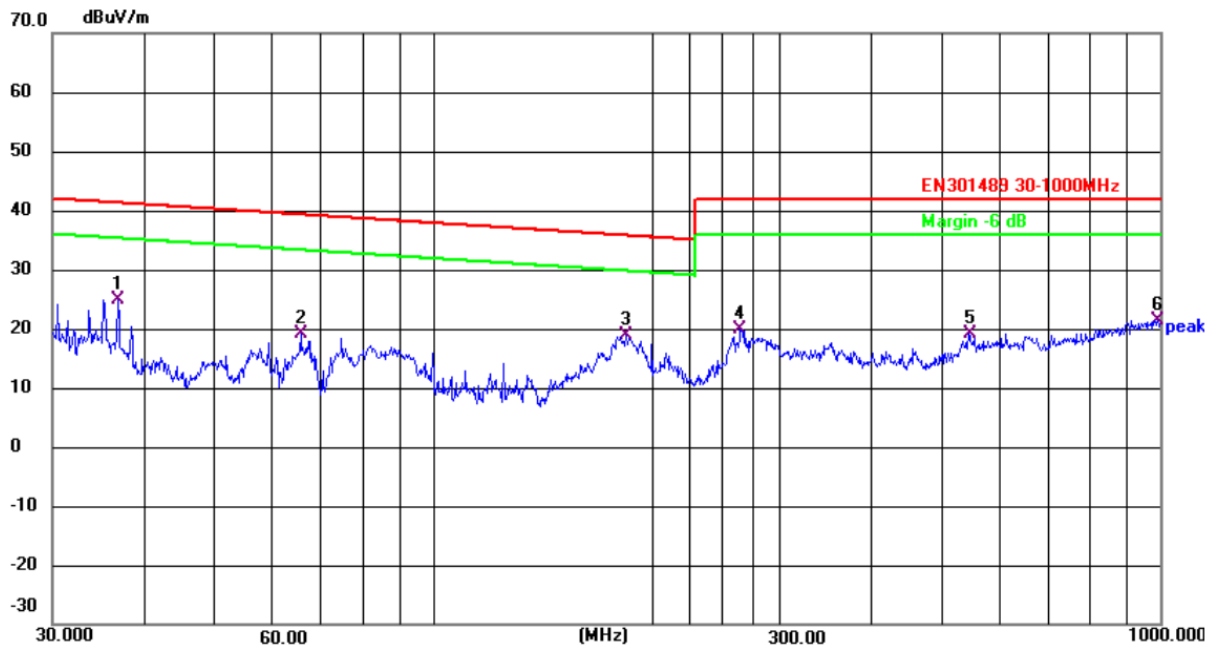
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Test Model	T36	Test Mode	TM1
Environmental Conditions	23.8°C, 52.1% RH	Test Engineer	Eason Zhou
Pol.	Vertical	Detector Function	Quasi-peak
Distance	3m	Test Voltage	AC 230V/50Hz



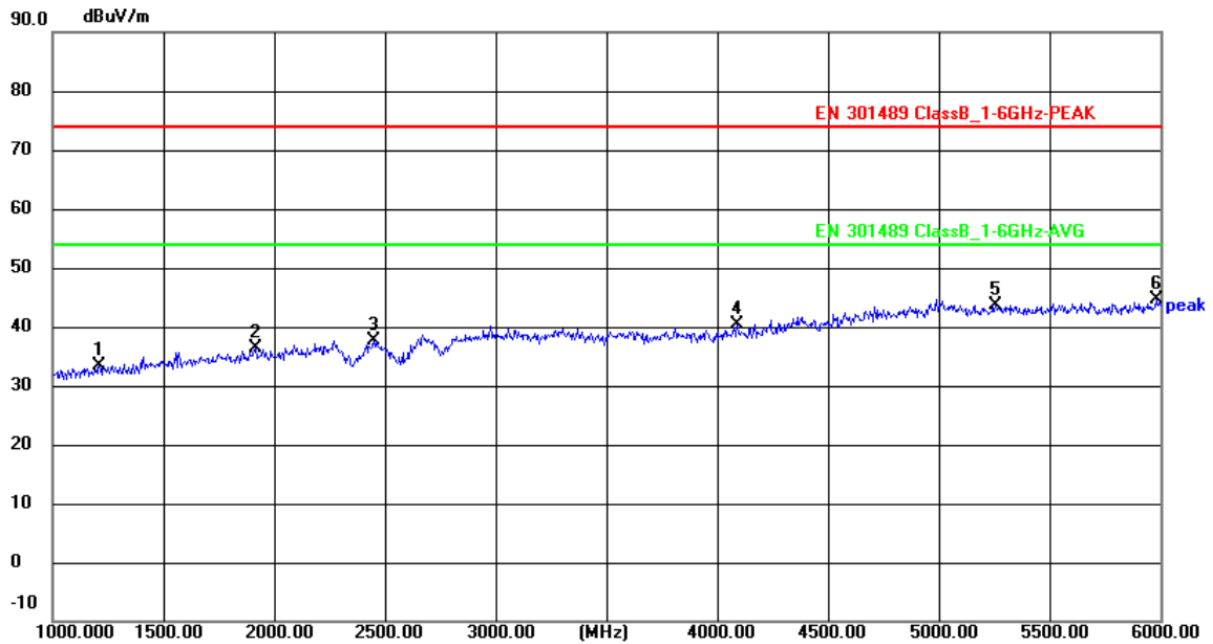
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	36.8953	42.54	-17.69	24.85	41.29	-16.44	QP
2	65.8031	38.31	-19.21	19.10	39.30	-20.20	QP
3	184.4898	37.31	-18.54	18.77	35.76	-16.99	QP
4	264.7457	35.40	-15.46	19.94	42.00	-22.06	QP
5	545.1826	31.05	-11.98	19.07	42.00	-22.93	QP
6	993.0114	28.84	-7.38	21.46	42.00	-20.54	QP

Note: Margin= Reading level + Correct factor – Limit
Correct Factor=Antenna Factor+Cable Factor- Pre-amplifier Factor





Test Model	T36	Test Mode	TM1 (Above 1GHz)
Environmental Conditions	23.9℃, 52.1% RH	Test Engineer	Eason Zhou
Pol.	Horizontal	Detector Function	Peak + AV
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	1210.000	48.70	-15.21	33.49	74.00	-40.51	peak
2	1915.000	49.82	-13.55	36.27	74.00	-37.73	peak
3	2450.000	49.13	-11.53	37.60	74.00	-36.40	peak
4	4090.000	48.50	-8.18	40.32	74.00	-33.68	peak
5	5255.000	47.38	-3.66	43.72	74.00	-30.28	peak
6	5980.000	48.25	-3.67	44.58	74.00	-29.42	peak



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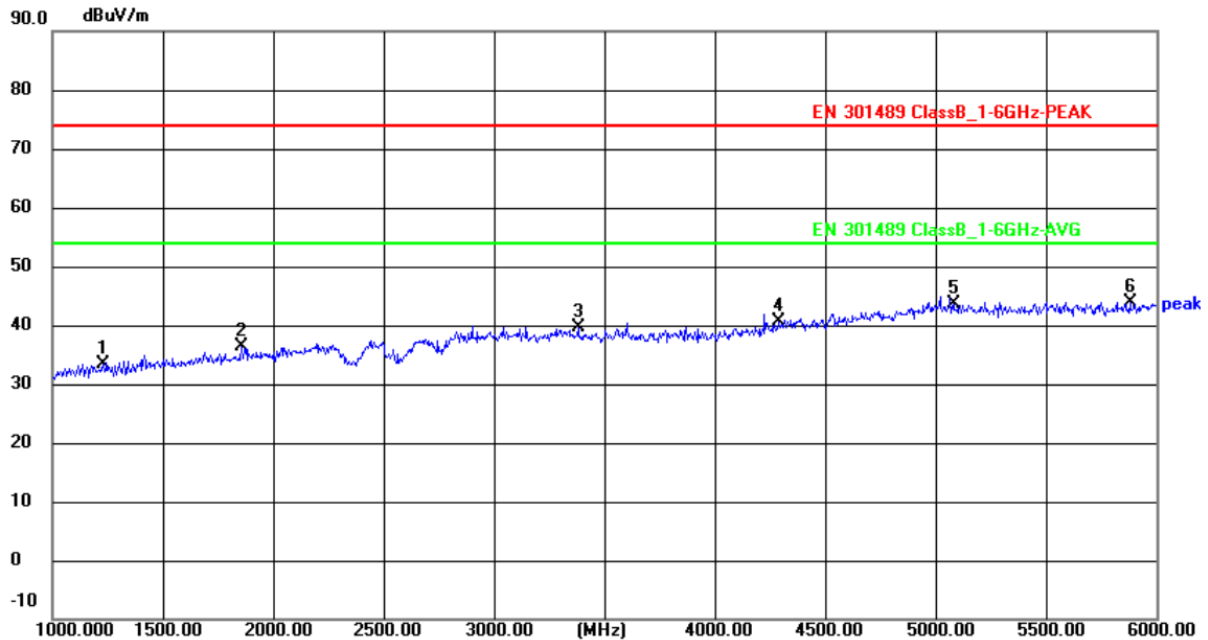
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Test Model	T36	Test Mode	TM1 (Above 1GHz)
Environmental Conditions	23.9°C, 52.1% RH	Test Engineer	Eason Zhou
Pol.	Vertical	Detector Function	Peak + AV
Distance	3m	Test Voltage	AC 230V/50Hz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1230.000	48.62	-15.22	33.40	74.00	-40.60	peak
2	1855.000	50.24	-13.87	36.37	74.00	-37.63	peak
3	3380.000	49.10	-9.45	39.65	74.00	-34.35	peak
4	4290.000	47.96	-7.40	40.56	74.00	-33.44	peak
5	5080.000	47.53	-3.97	43.56	74.00	-30.44	peak
6	5880.000	47.42	-3.57	43.85	74.00	-30.15	peak

Note:

- 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.
- Measurements above show only up to 6 maximum emissions noted.
- 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.
- Factor = Antenna Factor + Cable Loss - Amplifier Factor
Emission Level = Reading level + Factor
Margin = Emission Level - Limit



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A.4 Harmonic Current Emissions

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

A.5 Voltage Fluctuation and Flicker

Test Model	T36	Test Engineer	Eason Zhou
Environmental Conditions	25.2℃, 55.5% RH	Test Voltage	AC 230V/50Hz

Customer : xxx

Result : Pass

Pst and Limit

1_Pst

Limit

1.20

0.90

0.60

0.30

0.00

Pst

1

Plt and Limit

1_Plt

Limit

0.78

0.59

0.39

0.20

0.00

Plt

1

Relevant Parameter and Judgement During Test Period

Vrms at the end of test(V)

230.11

Error Max(%)

Test Limit(%)

T-max(ms)

0.00

Test Limit(ms)

500

Pass

dc (%)

0.00

Test Limit (%)

3.30

Pass

dmax (%)

0.00

Test Limit (%)

4.00

Pass

Pst

0.022

Test Limit

1.000

Pass

Plt

0.022

Test Limit

0.650

Pass

Elem1 Test Parameters

Num	dc (%)	dmax (%)	Tmax (ms)	Pst	Plt
1	0.00	0.00	0.00	0.022	0.022



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

Test Model	T36	Test Engineer	Eason Zhou
Environmental Conditions	23.2°C, 53.5% 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- TM3 Test Result:

EUT Working Mode	Antenna Polarity	Frequency (MHz)	Fielded Strength (V/m)	Observation	Position	Conclusion
Operating Mode	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
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.



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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 Yale Electronics Co., Ltd		
EUT	True wireless earbuds	Temperature	22.6℃
M/N	T36	Humidity	52.2%
Criterion	B	Pressure	1021mbar
Test Mode	TM1-TM3	Test Engineer	Eason Zhou

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-TM3

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 Yale Electronics Co., Ltd		
EUT	True wireless earbuds	Temperature	22.7℃
M/N	T36	Humidity	52.4%
Test Mode	TM1-TM3	Criterion	B
Test Engineer	Eason Zhou		

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-TM3

Line	Test Voltage	Polarity	Result (Pass/Fail)
L	1KV	+/-	Pass
N	1KV	+/-	Pass
L-N	1KV	+/-	Pass



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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 Yale Electronics Co., Ltd		
EUT	True wireless earbuds	Temperature	21.2℃
M/N	T36	Humidity	53.5%
Test Mode	TM1-TM3	Criterion	A
Test Engineer	Eason Zhou		

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-TM3				
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.



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**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 Yale Electronics Co., Ltd		
EUT	True wireless earbuds	Temperature	23.2℃
M/N	T36	Humidity	52.5%
Test Mode	TM1-TM3	Criterion	B
Test Engineer	Eason Zhou		

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-TM3						
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





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 Yale Electronics Co., Ltd		
EUT	True wireless earbuds	Temperature	23.3℃
M/N	T36	Humidity	54.0%
Test Mode	TM1-TM3	Criterion	B&C
Test Engineer	Eason Zhou		

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-TM3			
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



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