



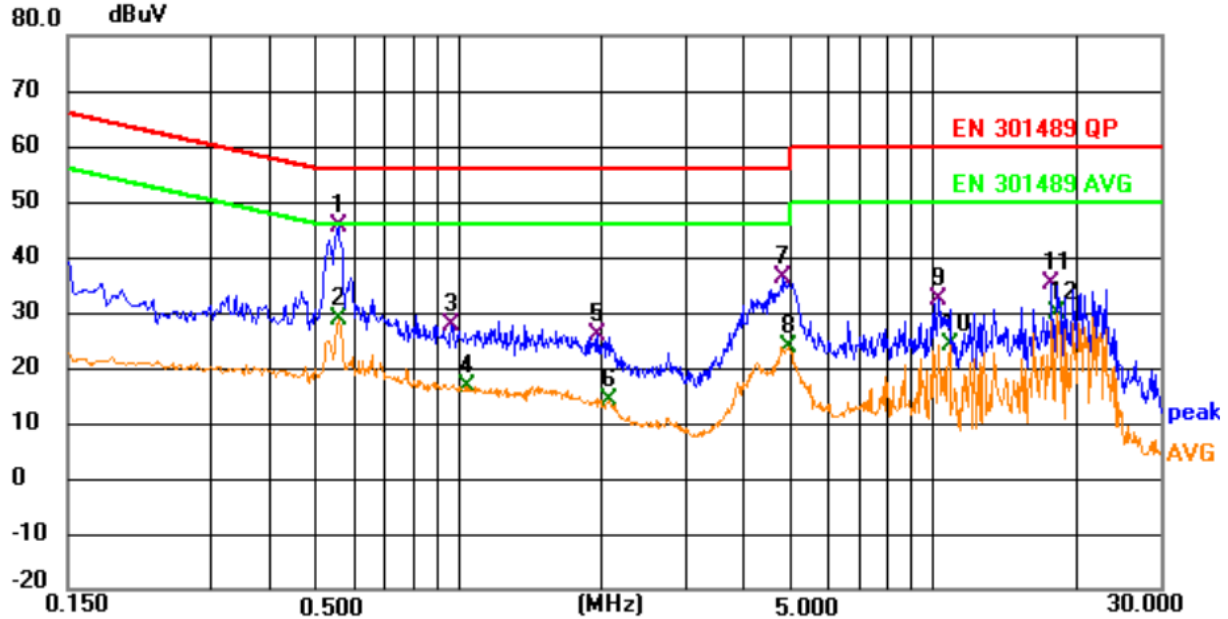
Appendix A for Emission and Immunity test results

Product Name: Bone conductive headphones

Test Model: S18

A.1 Line Conducted Emission

Test Model	S18	Test Mode	TM1
Environmental Conditions	22.5°C, 53.7% RH	Test Engineer	Jerry Chu
Pol.	Line	Test Voltage	AC 230V/50Hz

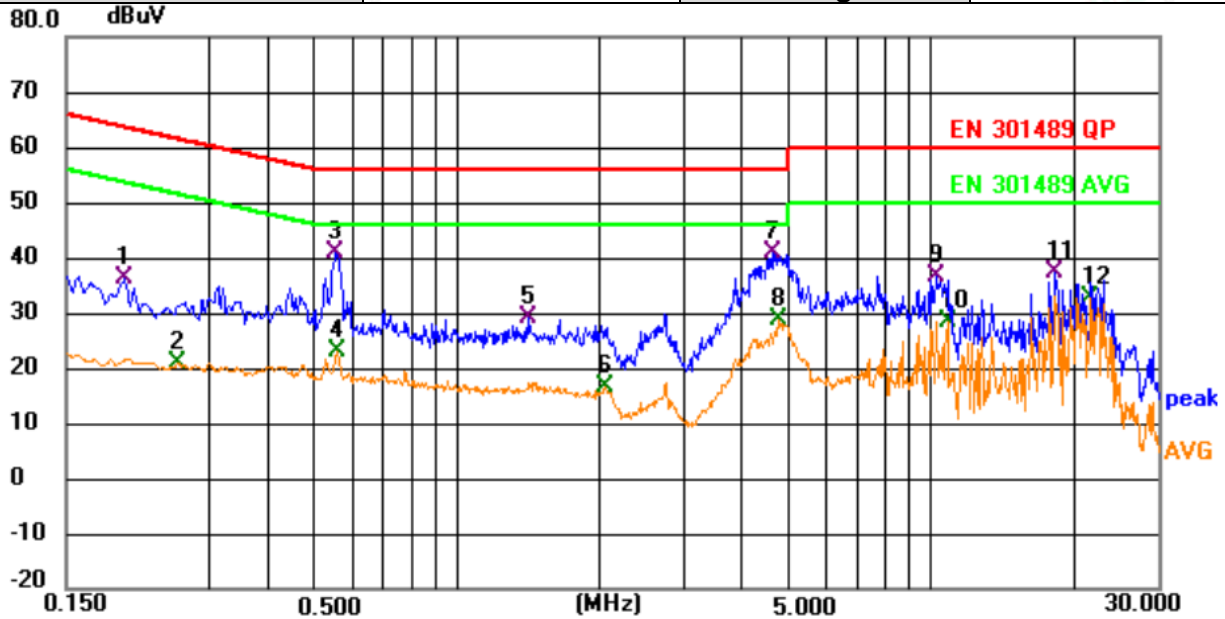


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.559	25.98	19.42	45.40	56.00	-10.60	QP	
2		0.559	9.49	19.42	28.91	46.00	-17.09	AVG	
3		0.965	8.87	18.84	27.71	56.00	-28.29	QP	
4		1.046	-2.11	18.80	16.69	46.00	-29.31	AVG	
5		1.954	6.89	19.14	26.03	56.00	-29.97	QP	
6		2.080	-5.13	19.13	14.00	46.00	-32.00	AVG	
7		4.848	17.48	18.86	36.34	56.00	-19.66	QP	
8		4.929	5.01	18.84	23.85	46.00	-22.15	AVG	
9		10.243	12.85	19.54	32.39	60.00	-27.61	QP	
10		10.793	4.47	19.56	24.03	50.00	-25.97	AVG	
11		17.695	15.79	19.37	35.16	60.00	-24.84	QP	
12		18.244	10.52	19.29	29.81	50.00	-20.19	AVG	





Test Model	S18	Test Mode	TM1
Environmental Conditions	22.5°C, 53.7% RH	Test Engineer	Jerry Chu
Pol.	Neutral	Test Voltage	AC 230V/50Hz



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.200	16.32	19.78	36.10	63.61	-27.51	QP	
2		0.258	1.04	19.78	20.82	51.50	-30.68	AVG	
3		0.555	21.38	19.42	40.80	56.00	-15.20	QP	
4		0.559	3.63	19.42	23.05	46.00	-22.95	AVG	
5		1.419	10.22	18.94	29.16	56.00	-26.84	QP	
6		2.049	-2.55	19.14	16.59	46.00	-29.41	AVG	
7	*	4.628	22.01	18.89	40.90	56.00	-15.10	QP	
8		4.794	9.92	18.86	28.78	46.00	-17.22	AVG	
9		10.243	17.07	19.54	36.61	60.00	-23.39	QP	
10		10.793	8.98	19.56	28.54	50.00	-21.46	AVG	
11		18.244	18.04	19.29	37.33	60.00	-22.67	QP	
12		21.665	13.46	19.15	32.61	50.00	-17.39	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

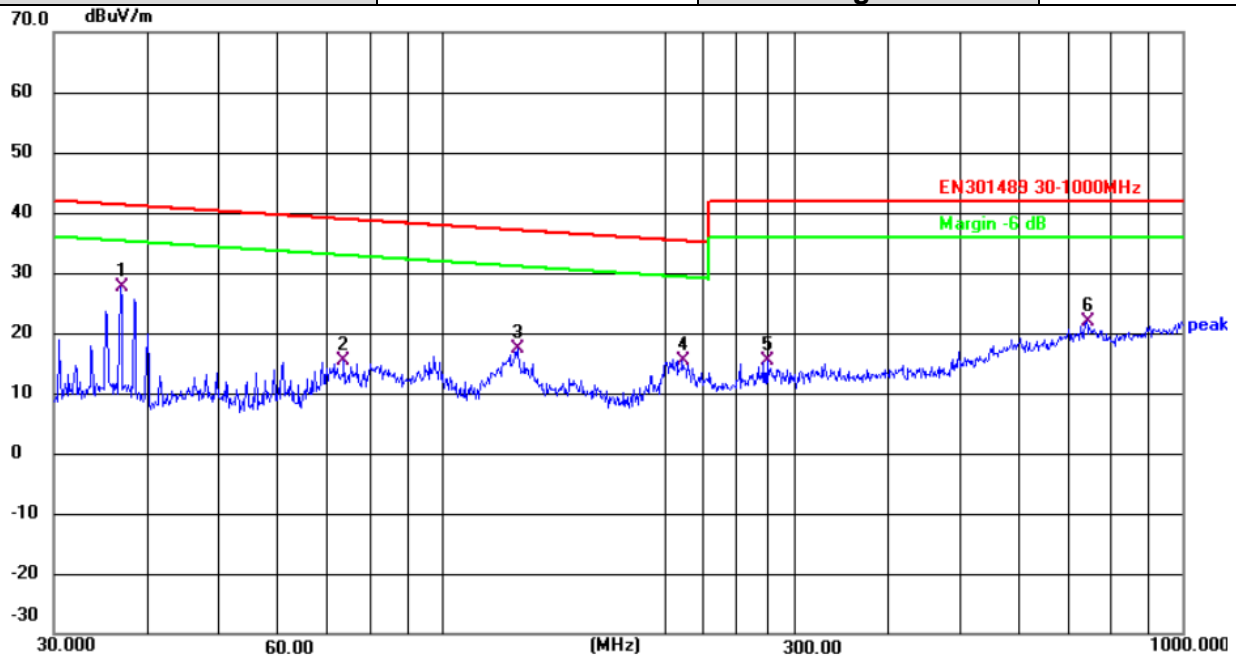
Correct Factor=Lisn Factor+Cable Factor+Insertion loss of Pulse Limiter





A.3 Radiated Disturbance

Test Model	S18	Test Mode	TM1
Environmental Conditions	23.8°C, 52.1% RH	Test Engineer	Jerry Chu
Pol.	Vertical	Detector Function	Quasi-peak
Distance	3m	Test Voltage	AC 230V/50Hz

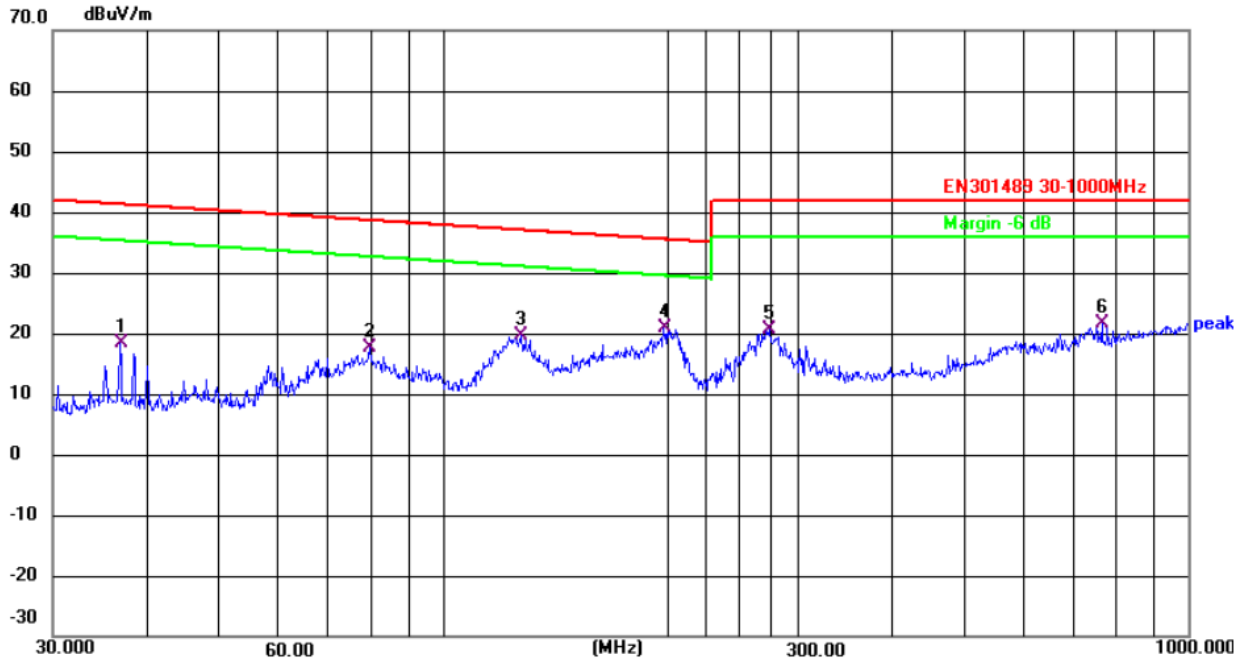


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	36.8953	45.37	-17.69	27.68	41.29	-13.61	QP
2	73.8756	34.91	-19.63	15.28	38.90	-23.62	QP
3	126.7723	37.76	-20.37	17.39	37.05	-19.66	QP
4	211.5264	32.55	-17.09	15.46	35.29	-19.83	QP
5	275.1570	30.70	-15.36	15.34	42.00	-26.66	QP
6	742.2587	32.13	-10.26	21.87	42.00	-20.13	QP





Test Model	S18	Test Mode	TM1
Environmental Conditions	23.8°C, 52.1% RH	Test Engineer	Jerry Chu
Pol.	Horizontal	Detector Function	Quasi-peak
Distance	3m	Test Voltage	AC 230V/50Hz



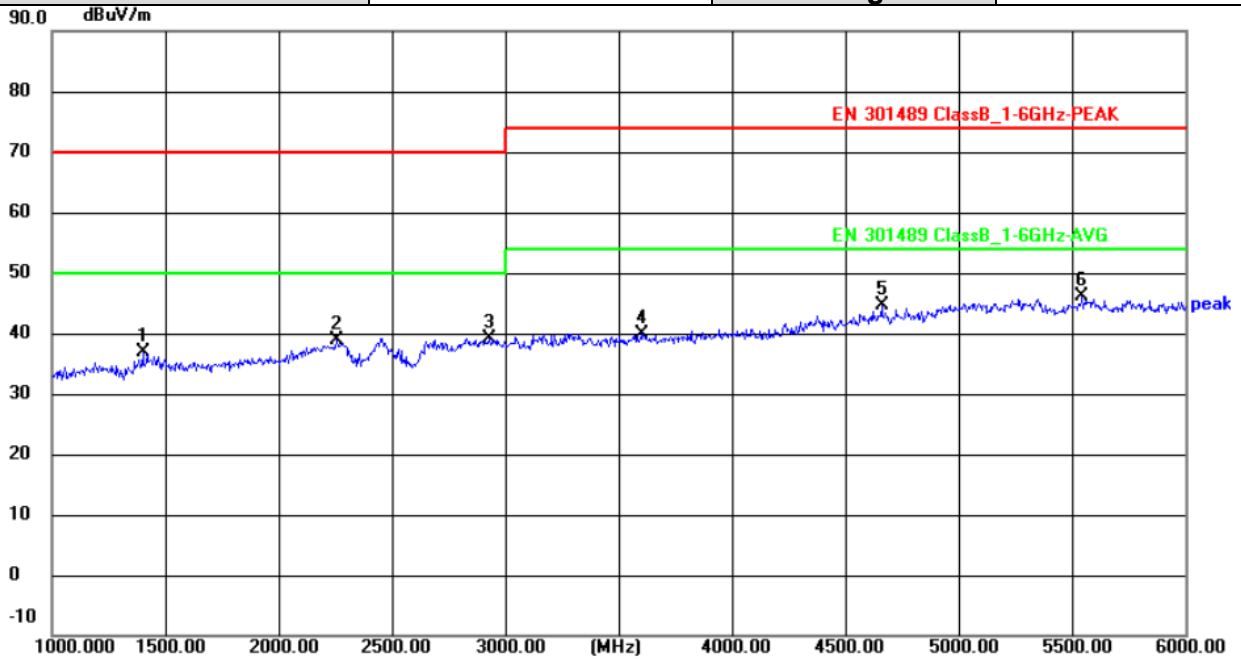
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	36.8953	35.70	-17.43	18.27	41.29	-23.02	QP
2	79.8002	37.48	-19.96	17.52	38.64	-21.12	QP
3	127.6645	38.97	-19.31	19.66	37.02	-17.36	QP
4	197.8928	39.71	-18.75	20.96	35.52	-14.56	QP
5	274.1938	37.12	-16.38	20.74	42.00	-21.26	QP
6	766.0571	31.10	-9.37	21.73	42.00	-20.27	QP

Note: Margin= Reading Level + Correct Factor – Limit
 Correct Factor=Antenna Factor+Cable Factor – Pre-Amplifier Factor





Test Model	S18	Test Mode	TM1 (Above 1GHz)
Environmental Conditions	23.5°C, 52.1% RH	Test Engineer	Jerry Chu
Pol.	Horizontal	Detector Function	Peak+Average
Distance	3m	Test Voltage	AC 230V/50Hz

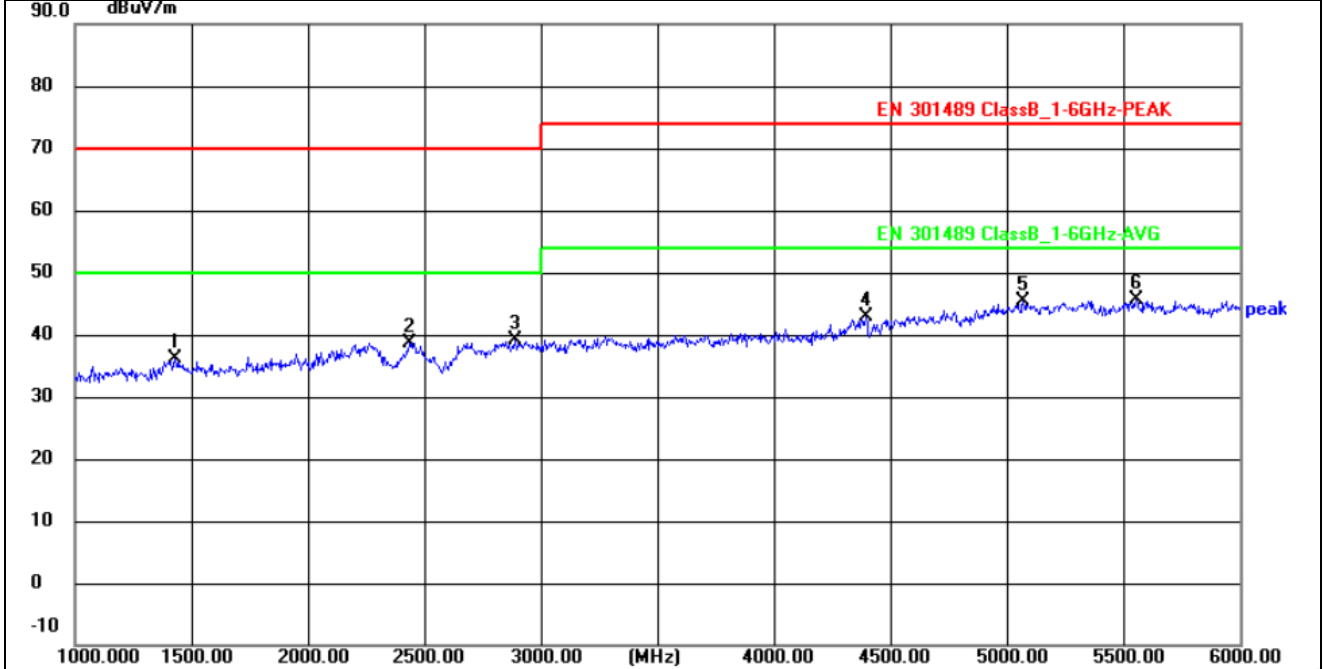


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	1400.000	51.01	-14.05	36.96	70.00	-33.04	peak
2	2255.000	49.68	-10.78	38.90	70.00	-31.10	peak
3	2930.000	48.99	-9.93	39.06	70.00	-30.94	peak
4	3600.000	48.45	-8.50	39.95	74.00	-34.05	peak
5	4660.000	49.28	-4.73	44.55	74.00	-29.45	peak
6	5545.000	48.08	-2.05	46.03	74.00	-27.97	peak





Test Model	S18	Test Mode	TM1 (Above 1GHz)
Environmental Conditions	23.5°C, 52.1% RH	Test Engineer	Jerry Chu
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	1430.000	51.21	-15.16	36.05	70.00	-33.95	peak
2	2435.000	50.22	-11.58	38.64	70.00	-31.36	peak
3	2890.000	49.03	-9.98	39.05	70.00	-30.95	peak
4	4395.000	49.75	-6.99	42.76	74.00	-31.24	peak
5	5070.000	49.29	-3.99	45.30	74.00	-28.70	peak
6	5555.000	48.79	-3.26	45.53	74.00	-28.47	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





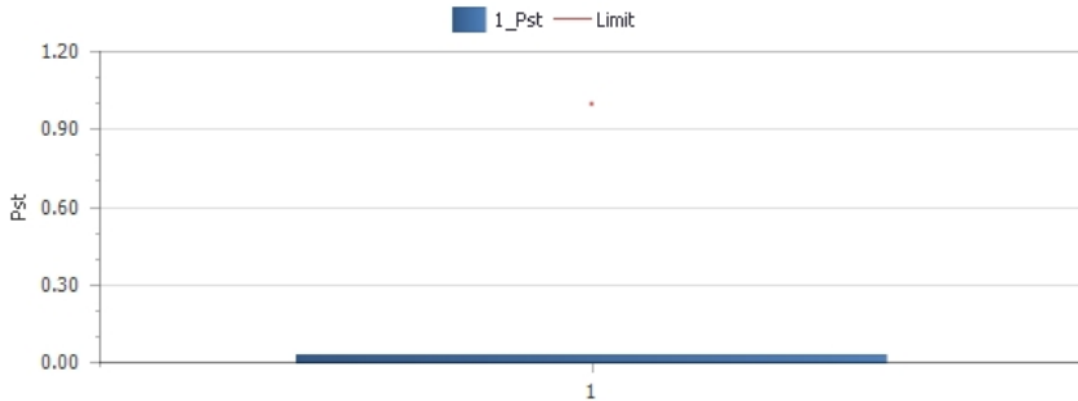
A.4 Harmonic Current Emissions

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

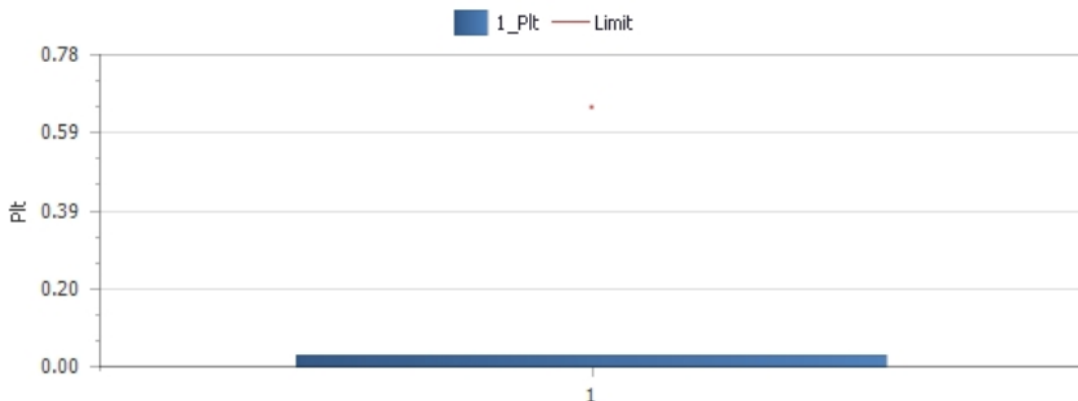
A.5 Voltage Fluctuation and Flicker

Test Model	S18	Test Engineer	Jerry Chu
Test Voltage	AC 230V/50Hz	Test Mode	TM1
Environmental Conditions	25.3°C, 55.4% RH		

Pst and Limit



Plt and Limit



Relevant Parameter and Judgement During Test Period

Vrms at the end of test(V)	230.01			
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	0.027	Test Limit	1.000	Pass
Plt	0.027	Test Limit	0.650	Pass



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

Test Model	S18	Test Engineer	Jerry Chu
Environmental Conditions	23.4°C, 52.3% 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.

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



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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	DongGuan Kemi Electronics Technology Co., Ltd		
EUT	Bone conductive headphones	Temperature	22.4°C
M/N	S18	Humidity	52.6%
Criterion	B	Pressure	1021mbar
Test Mode	TM1-TM3	Test Engineer	Jerry Chu
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	DongGuan Kemi Electronics Technology Co., Ltd		
EUT	Bone conductive headphones	Temperature	22.6°C
M/N	S18	Humidity	52.5%
Test Mode	TM1-TM3	Criterion	B
Test Engineer	Jerry Chu		

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	DongGuan Kemi Electronics Technology Co., Ltd		
EUT	Bone conductive headphones	Temperature	21.9°C
M/N	S18	Humidity	53.6%
Test Mode	TM1-TM5	Criterion	A
Test Engineer	Jerry Chu		

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.

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



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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	DongGuan Kemi Electronics Technology Co., Ltd		
EUT	Bone conductive headphones	Temperature	23.8°C
M/N	S18	Humidity	52.7%
Test Mode	TM1-TM5	Criterion	B
Test Engineer	Jerry Chu		

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	

Note: Verification shall be performed on the generators and coupling/decoupling network prior to the test.

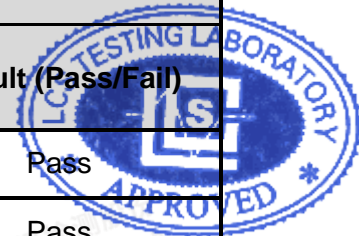




A.11 Voltage Dips/Interruptions Immunity Test

Voltage Dips And Interruptions Test Results			
Standard	<input type="checkbox"/> IEC 61000-4-11 <input checked="" type="checkbox"/> EN 61000-4-11		
Applicant	DongGuan Kemi Electronics Technology Co., Ltd		
EUT	Bone conductive headphones	Temperature	24.3°C
M/N	S18	Humidity	53.5%
Test Mode	TM1-TM5	Criterion	B&C
Test Engineer	Jerry Chu		

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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