

# Test Report

Client Name **E-POWER LIMITER** 

7th Floor, NO.B Building, Anlibang Technology Park,

Xitian First Industrial District, Gongming, Guangming Address

District, Shenzhen

Speaker **Product Name** 

Date 2019.04.26

# **Shenzhen Anbotek Compliance Laboratory Limited**



# Marking

- 1. The test report is invalid without the official stamp of Shenzhen Anbotek Compliance Laboratory Limited.
- 2. Nobody is allowed to photocopy or partly photocopy this test report without written permission of Shenzhen Anbotek Compliance Laboratory Limited.
- 3. The test report is invalid without the signatures of testing engineer, reviewer and approver.
- 4. The test report is invalid if altered.
- 5. Objections to the test report must be submitted to Shenzhen Anbotek Compliance Laboratory Limited within 15 days.
- 6. The test report is valid for the tested samples only.
- 7. As for test verdict, "—"means "no need for judgment" "N/A" means "not applicable".

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# **TEST REPORT**

**Client Name** E-POWER LIMITER

7th Floor, NO.B Building, Anlibang Technology Park,

**Address** 

Xitian First Industrial District, Gongming, Guangming District, Shenzhen

Report on the submitted sample(s) said to be:

**Product Name** Speaker

Model BT502

**Trademark** 

Description

Manufacturer

**Factory** Other information

Sample(s)

received Date

2019.04.25

2019.04.25 **Testing period** 

**Report Date** 2019.04.26

IPX6 Test item

Test standard IEC 60529:2013

**Evaluation** Pass

Prepared by:

Checked by:

Approved by:

Jarvan Zheng

Name: Jarvan Zheng Title: Test Engineer

Name: Jimmy Zhou Title: Lab Manager

Compliance Laton

Anbotek

Name: Leo Li

Title: Authorized signatory

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Hotline

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#### 1. Test standards

### IEC 60529:2013 Degrees of protection provided by enclosures(IP Code)

#### 2. Conformity verification-Summary of inspection

* ek	Spotek Wupotek Wupotek Wupotek Wupote Wup	Test result		thupo.
Clause	Summary of inspection	N/A.	Pass	Fail
12	TESTS FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL	Ø	rek ∀u □Vupo,	ootel A
13 hotel	TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL.	Ø	Aupotek Potek	Aupoten Prek
14	TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL.	nbotek 		orek □ ru

#### Test case verdicts:

N/A.: Test case does not apply to the test object

P: Test item does meet the requirement

F: Test item does not meet the requirement

#### 2.1 Environmental Conditions:

Environmental Temperature: 15°C~35°C

Relative Humidity: 25%~75% Pressure: 86kpa~106kpa

#### 2.2 Test equipment:

Equipment Name	Equipment No.	Model	Validity Period
Water proof test system	SE-264	IPX5-6	2019.08.24

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#### 3. Test information and results

Aupore	IEC 60529:2013	Vupp.	otek Aug
Clause	Requirement-Test	Vupo, VIII	Verdict
SK VU	Pose, Vina Vipose, Vip	Anbo	pojek
11.4	Combination of test conditions for the first characteristic numeral	By Wipon	Polek
Anbotek	Designation with a first characteristic numeral implies that all test	otek Anbotel	Anbotel

Vupor	First	Test for protection against		
Table 5	characteristic number	Access to hazardous parts	Solid foreign objects	Wupotek
rek	Lupote 0 Mg	No test required	No test required	N/A
Anbotek	Aupotek l	16 VP.	not fully penetrate and adequate shall be kept	N/A
Aupo	2 Anbotek	The jointed test finger may penetrate up to its 80 mm length, but adequate clearance shall be kept	The sphere of 12.5mm φ shall not fully penetrate	N/A
inposek	Was 3	100	nall not penetrate and adequate shall be kept	N/A
Anbotek	4 Anbotek	10 N	hall not penetrate and adequate shall be kept	N/A
k And	Anbotek Anbotek	The test wire of 1.0 mm φ shall not penetrate and adequate clearance shall be kept	Dust-protected as specified in table 2	N/A
Anbotek Anbotek	6 Anborek	The test wire of 1.0 mm φ shall not penetrate and adequate clearance shall be kept	Dust-tight as specified in table 2	N/A
ootek A	. V.	the first characteristic numerals 1 ll diameter of the sphere shall not enclosure.	and 2, "not fully penetrate" means pass through an opening of the	Anbotek Anbotek

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Andrew	IEC 60529:2013	k hotek Aupote	Anb
Clause	Requirement-Test	Result-Remark	Verdict

13	TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL			Anbotek hotek
13.1	Test means	Pose Yup	otek Aupote	P.U.
up	Test means and the main test conditions	botek Anbote	FUR	
Anbote	Tab.VII-7 Test means for the tests for prof Foreign objects	tection against solid	Aupotek Yupo	otek - A
Table 7	First characteristic numeral	Test means	Test force	10 to 1
ek .	Upotek Pupo 0 Potek Ploote	No test required	r Aupor	N/A
ootek Anbotek	ha had a had	igid sphere without andle or guard 50mm ameter	50 N ± 10 %	N/A
V Vupose	ha habote 2 habote has	igid sphere without andle or guard 12.5mm ameter	30 N ± 10 %	N/A
otek Ar	dia dia	igid steel rod 2.5mm ameter with edges free om burrs	3 N ± 10 %	N/A
Anbotek Anbot	4 dia	igid steel rod 1mm ameter with edges free om burrs	1 N ± 10 %	N/A
tek bu	5	ust chamber Fig.2,with or ithout underpressure	k Vigotek	N/A
100tek	6.00	ust chamber Fig.2,with nderpressure	otek Anbotek	N/A
13.2	Test conditions for first characteristic num	nerals 1, 2, 3, 4	"u_ otek Vupon	- b,
Anboro	The object probe is pushed against any o with the force specified in table 7.	Aupolek Aug	N/A	
13.3	Acceptance conditions for first characterist	stic numerals 1, 2, 3, 4	K Anboro	Yu.
otek .	The protection is satisfactory if the full dia specified in table 7 does not pass through	10.	rek Aupoten	N/A

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IEC 60529:2013				
lause	Requirement-Test	Result-Remark	Verdic	
Vu.	Trak Vipotek Vupo. W. Batek Vupoter V	Joseph Posek	Aupor	
13.4	Dust test for first characteristic numerals 5 and 6		Anbote.	
rek	The test is made using a dust chamber incorporating the	poick Aupor	N V	
	basic principles shown in figure 2 whereby the power		e, Vup	
	circulation pump may be replace by other means suitable		orek	
	to maintain the talcum powder in suspension in a closed		voiek .	
	test chamber. The talcum powder used shall be able to		N/A	
	pass through a square-meshed sieve the nominal wire		MO IN/A	
	diameter of which is 50 and the nominal width of a gap		Aupo	
	between wires 75µm . The amount of talcum powder to be		KUPC	
	used is 2Kg per cubic metre of the test chamber volume. It		otok Ar	
abotel	shall not have been used for more than 20 tests.	otek Aupote Aur	Yor.	
	Enclosures are of necessity in one of two categories:		nbo	
	Category1: Enclosures where the normal working cycle of		Vupore K	
	the equipment causes reductions in air pressure within the		Aupole	
	enclosure below that of the surrounding air, for example,		· noor	
	due to thermal cycling effects.		e k	
	Category 2:Enclosures where no pressure difference		V. VIII	
VUD	relative to surrounding air is present.	K POLOK VI	100 to.	
	Category 1 enclosures:		V Potek	
	The enclosure under test is supported inside the test		potek	
	chamber and the pressure inside the enclosure is		br.	
	maintained below the surrounding atmospheric pressure		VUL	
	by a vacuum pump.The suction connection shall be made		YUP.	
	to a hole specially provided for this test.		N/A	
	A volume of air 80 times the volume of the sample		ootek	
	enclosure tested without exceeding the extraction rate of		Yu.	
	60 volumes per hour. In no event shall the depression		And	
	exceed 2 kPa(20 mbar) on the manometer shown in figure		Vupo	
	2. Anbotek Anbotek Anbotek Anbotek		k Aupo	
boter	Category 2 enclosures:	Bupo. W.	PER AL	
	The enclosure under test is supported in its normal		otek	
	operating position inside the test chamber, but is not		ue sek	
	connected to a vacuum pump. Any drain-hole normally		NI/A	
	open shall be left open for the duration of the test. The test		N/A	
	shall be continued for a period of 8h.		Anbot	
	Pupos Villa Pik Poses Villa Vi		. de	

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	IEC 60529:2013		
Clause	Requirement-Test	Result-Remark	Verdict
Vupo,	Vick Pubotek Vupo, Visa Volek	Works, WWO. Utek	nbotek
13.5	Special conditions for first characteristic numeral 5	Aupoter Aupo	"postek
13.5.1	Test conditions for first characteristic numeral 5	First characteristic numeral is 5	Vupofe,
Anbotek Anbotek	The enclosure shall be deemed category 1 unless the relevant product standard for the equipment specifies that the enclosure is category 2.	tek Anbotek Anbote	N/A
13.5.2	Acceptance conditions for first characteristic numeral 5	First characteristic numeral is 5	Anbotek
ootek Anbotek Anbotek Anbo	The protection is satisfactory if, on inspection, talcum powder has not accumulated in a quantity or location such that, as with any other kind of dust, it could interfere with the correct operation of the equipment or impair safety. Except for special cases to be clearly specified in the relevant product standard, no dust shall deposit where it could lead to tracking along the creepage distances.	Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek Anbotek	N/A
13.6	Special conditions for first characteristic numeral is 6	k Anbotek Anbotek	ADDOF
13.6.1	Test conditions for first characteristic numeral is 6	First characteristic numeral is 6	upotek b
ipotek Vu	The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not	Anbotek Anbotek Anbotek Anbotek	N/A
13.6.2	Acceptance conditions for first characteristic Numeral 6	First characteristic numeral is 6	posek -
osek ek	The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.	Vupotek Vupotek	N/A



And	IEC 60529:2013	Aupo, Au	ote. Vup
Clause	Requirement-Test	Result-Remark	Verdict

14	TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL				Auposek	
14.1	"Otek Ant	Test means	botek Ar	por bu	AUP	
Auporek	The test mear	ns and the main test of given in the table 8	conditions are	Vupoter Vu	Anbotek Anbotek	Who was
k Vupot	10%	Table 8 I main test conditions rotection against wate		Yupofek	Aupotek Aupo	posek - b
obotek l	Second Characteristic numeral	Test means	Water flow rate	Duration of test	Test conditions	Vup Tup Otek
	Nupo o	No test required	Aupore Potek	Yupotek	'upotek - Vupo,	N/A
rek Vup.	tek 1nbotek	Drip box Fig.3 Enclosure on turntable	1 mm/min	10 min	14.2.1	N/A
Pupotek Pupotek	Anbotek Anbotek	Drip box Fig.3 Enclosure in 4 fixed positions of 15°tilt	3 mm/min	2.5 min for each position of tilt	14.2.2	N/A
nbotek	3	Oscillating tube Fig.a Spray ±60°from vertical, distance max.200mm or Spray nozzle	0.07L/min ±5% per hole, multiplied by Number of holes	10min  1 min/m <sup>2</sup> at least 5	14.2.3a)	N/A
	k Aupotek	Fig.5 Spray ±60°from vertical	10L/min ±5%	min	14.2.3b)	-otek Vun
r Aug	nbotek 4 Anbotel	As for numeral 3 Spray ±180° from vertical	As for numeral 3	As for numeral 3	14.2.4	N/A
Anbotek Anbotek	Anborek Anborek Anborek	Water jet hose Nozzle Fig.6 Nozzle 6.3mm diameter,distance 2.5m to 3m	12.5L/min ±5%	1 min/m² at least 3 min	14.2.5	N/A
Dotek Vesk Viesk	6	Water jet hose Nozzle Fig.6 Nozzle 12.5mm diameter,distance 2.5m to 3m	100L/min ±5%	1 min/m² at least 3 min	14.2.6	K Potek

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report i	10 OZALN 19042	.5001-01	Ans	* O.K	7,00 K	V
Anbotek	Auporek	Immersion tank Water-level on	Aupotek	Vupo, posek	Anbotek Anbote	Fek Yup
, boy	ek 7.bote	Enclosure:0.15m	ek Tupor	30min	14.2.7	N/A
VUR		above top 1m	otek vupote	VUD.	hotek P	
Y AU		above bottom	bo k	ick Wupose	Yun Fek	
otek	Aupore, Aug	Immersion tank	Vupos Vu	otek by Anbo	ISK WUPP	" " otek
Yo.	had 8 had	Water-level:by	abotek A	agreement	14.2.8	N/A
upoto	Vu.	agreement	p	agreement	borok horok	Aupor
"potek		Fan jet nozzle	And	botek	Anbor An	iek upe
W		Figure 7	K Aupore	VUL	"poter Vupo	
AUDO		Test of small	tek spotek	Vupo.	A. Otek	pote, V.
Anb		enclosure on	o, bu	sk vupoter	Ando	
. e.k		turntable	abotek Anbo	30s per	ek Aupolo	
B		Figure12	otek vy	position	14.2.9(a)	
potek		Turntable speed	Anbo	position	ou Yun	
rek		(5±1)r/min	Aupole	YUR FOR	Posek Vupos	
Aupo		Spray at 0°,	k botok	Aupor	ru, clek upog	
Vupots,	9	30°, 60°, 90°	(15±1)L/min	potek	Aupo K	N/A
V		Or	ster Pupo,	V. Stok	Vupoter Vul	
AUR		Test of large	stek subote	4	r rotek	
SK DI		enclosures as per	1/00 K	1min/m <sup>2</sup> at	14.2.9(b)	
Yer		intended use	Anbores And	least 3 min	Jek Anbox	
, o .		Spray from all	botek	Upor Yur	tek Spotek	
nboter		practical	V.U.	Polek V	Upo, Vie	k nbote
hotek		directions	Aupo	V. Stek	Anboten Anbo	
VUP		Distance	ek "poier	AUPO	Potek Pup.	Yun Vun
Vupo,		(175±25)mm	hotel	Anbore	VUD SEK	
14.2.6	Test for se	econd characteristic r	numeral 6	iek Wuposek	Anbo. Stek	nbotek
otek	Noz	zle diameter : 12.5 m	nm ;	hotek Anbo	Yup.	botek
rek		stance : 2.5 m to 3 m		, ek		An-
upo.				Aupor Au		Aupo,
Nupotek		st time : at least 3 mi		"potek		iek anbo
14.2.6	Noz Di Water fl	Spray from all practical directions Distance (175±25)mm econd characteristic restance: 2.5 m to 3 m ow rate: (100±5%)	nm ; n ; L/min ;	least 3 min	14.2.9(b)	Anbotek  Anbotek  Anbotek  Anbotek  Anbotek

#### 4.Test result:

No N	Sample No.	Test Item	Test requirements	Test result	Evaluation
	SZAEK190 425001-S1	IPX6	There is no water enter the sample inside or the water inside does not affect the electrical properties of the sample.	There is no water enter the sample inside. The function is normal after test.	Pass

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#### 5. Photos



**IPX6-Before test** 



**IPX6-Before test** 

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IPX6-Test set-up

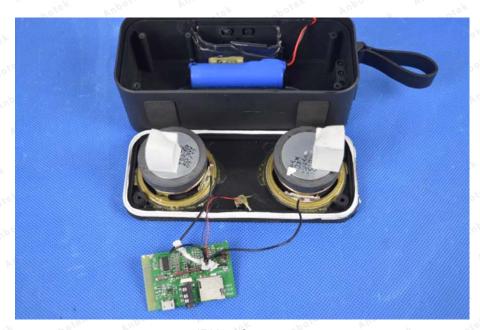


IPX6-After test





**IPX6-After test** 



**IPX6-After test** 

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**IPX6-After test** 

\*\*\*End of Report\*\*\*