

MESSRS.**SPECIFICATION FOR APPROVAL****承 認 書**

Product	DYNAMIC SPEAKER BOX
Part No.	HDK-171208ZA-BOX30
Customer Approval	

Approved By	Checked By	Made By
<i>Eric</i> Jun-08-2021	<i>Emily</i> Jun-08-2021	<i>Lily</i> Jun-08-2021

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EDITION:1.1

1. Specification

HDK-171208ZA-BOX 30(Rohs)

ITEM		SPECIFICATIONS
01	Type	Dynamic Speaker BOX
02	Rated Input Power	1.0W/2.83Vrms (in 1.0cc Box)
03	Max. Input Power	1.5W/3.46Vrms for 1 minute (in 1.0cc box)
04	Impedance	8Ω±15%
05	Resonance Frequency	750Hz ± 20% (in 1.0cc box)
06	Sensitivity (S.P.L)	94±3dB (1.0W / 0.1m) at 0.8-2.0KHz in 1.0cc box
07	Frequency Range	F0 – 20KHz
08	Total Harmonics Distortion	Max 10% (at 1.0KHz)
09	Weight	5.0g ± 5%
10	Appearance	Should not exist any obstacle to be harmful to normal operation; damages, cracks, rusts and distortions, etc.
11	Operation Test	Must be normal at program source – 1.0W
12	Buzz & Rattle	Must be normal at 2.83Vrms(in 1.0cc box) sine-wave from 300 -5KHz sweep 2-3 cycles,1 sec for each cycle
13	Polarity	When positive voltage is applied to the terminal marked (+), diaphragm should move to the front.
14	Terminal Strength	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
15	Temperature	Operating temperature: -20℃ to +60℃ Storing temperature: -25℃ to +70℃

2. Measuring Method

2.1. Test Condition Standard

Temperature : 15 ~ 35°C

Relative humidity : 25% ~ 85%,

Atmospheric pressure : 860mbar to 1060mbar.

Basic

Temperature : 20±3°C

Relative humidity : 60% ~ 70%,

Atmospheric pressure : 860mbar to 1060mbar

2.2. Standard Test Fixture

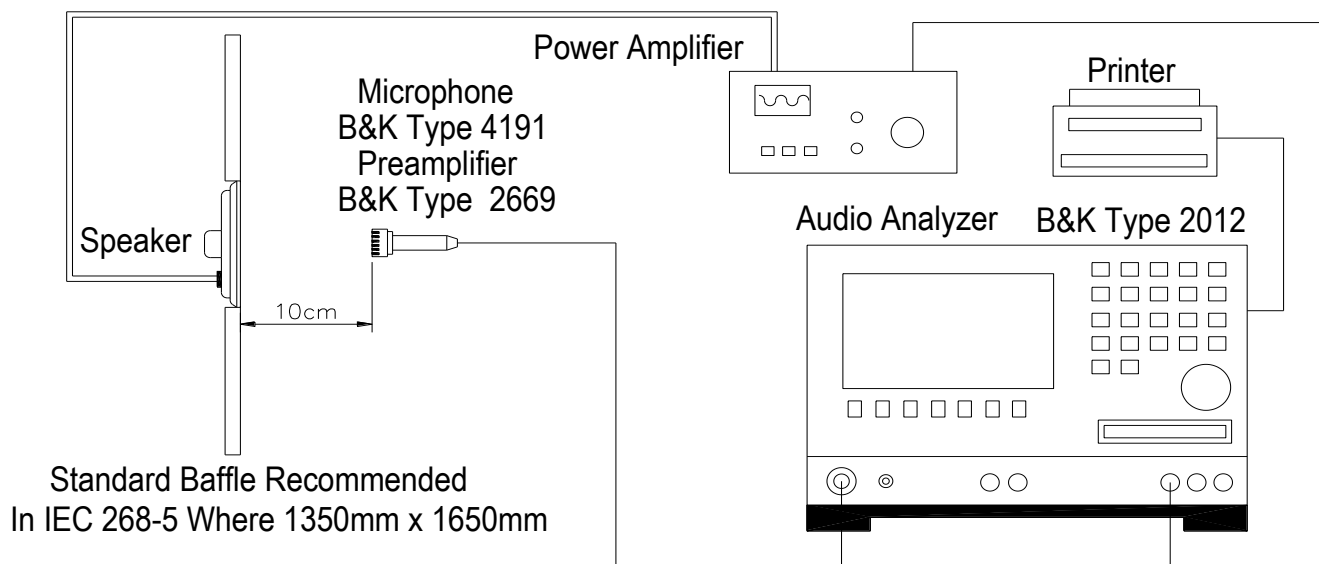
1. Input Power : 1.0W (2.83V)

2. Zero Level : -dB

3. Mode : SPEAKER

4. Potentiometer Range : 50dB

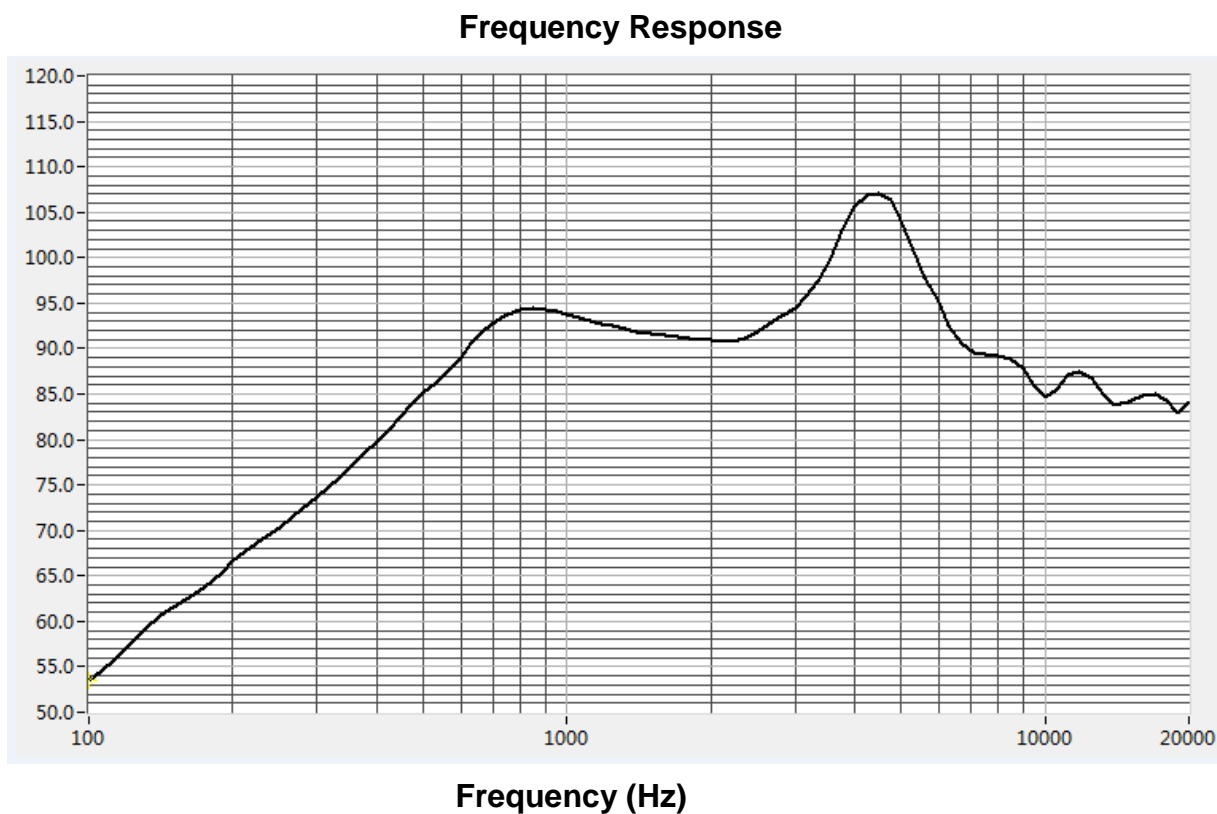
5. Sweep Time : 0.5sec



2.3 Frequency Response Curve

BOX SPL Curve (0.1m/1.0W)

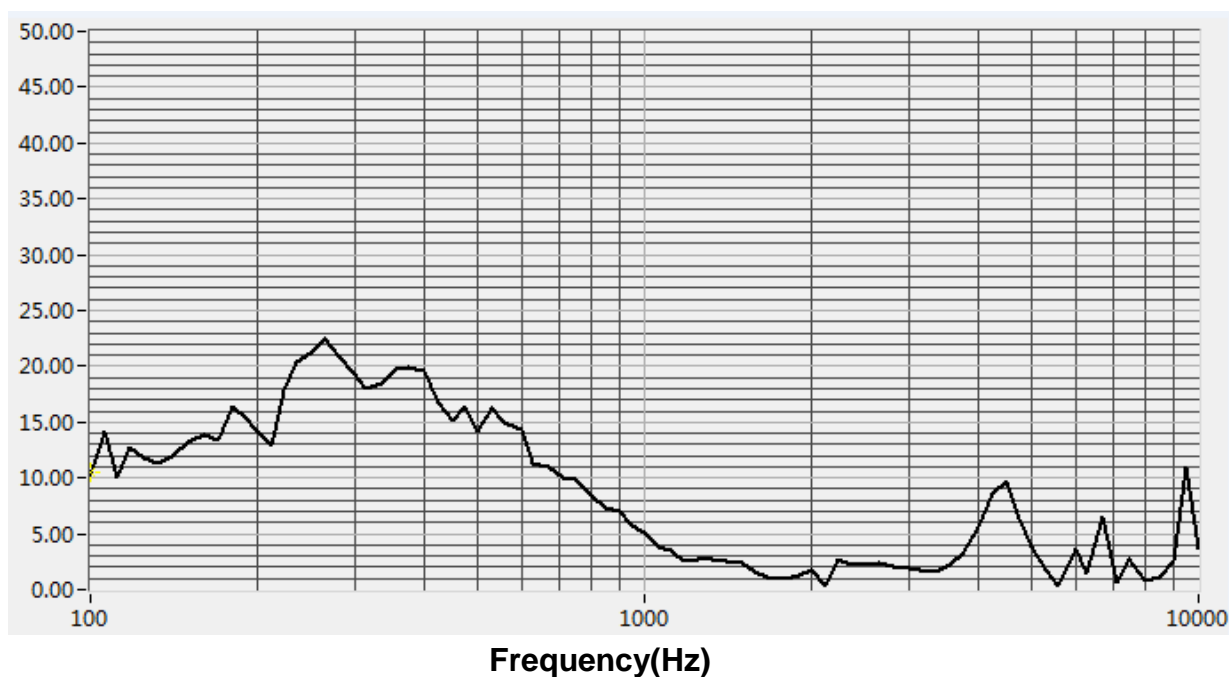
Figure 1: Typical Frequency Response Curve



BOX THD Curve (0.1m/1.0W)

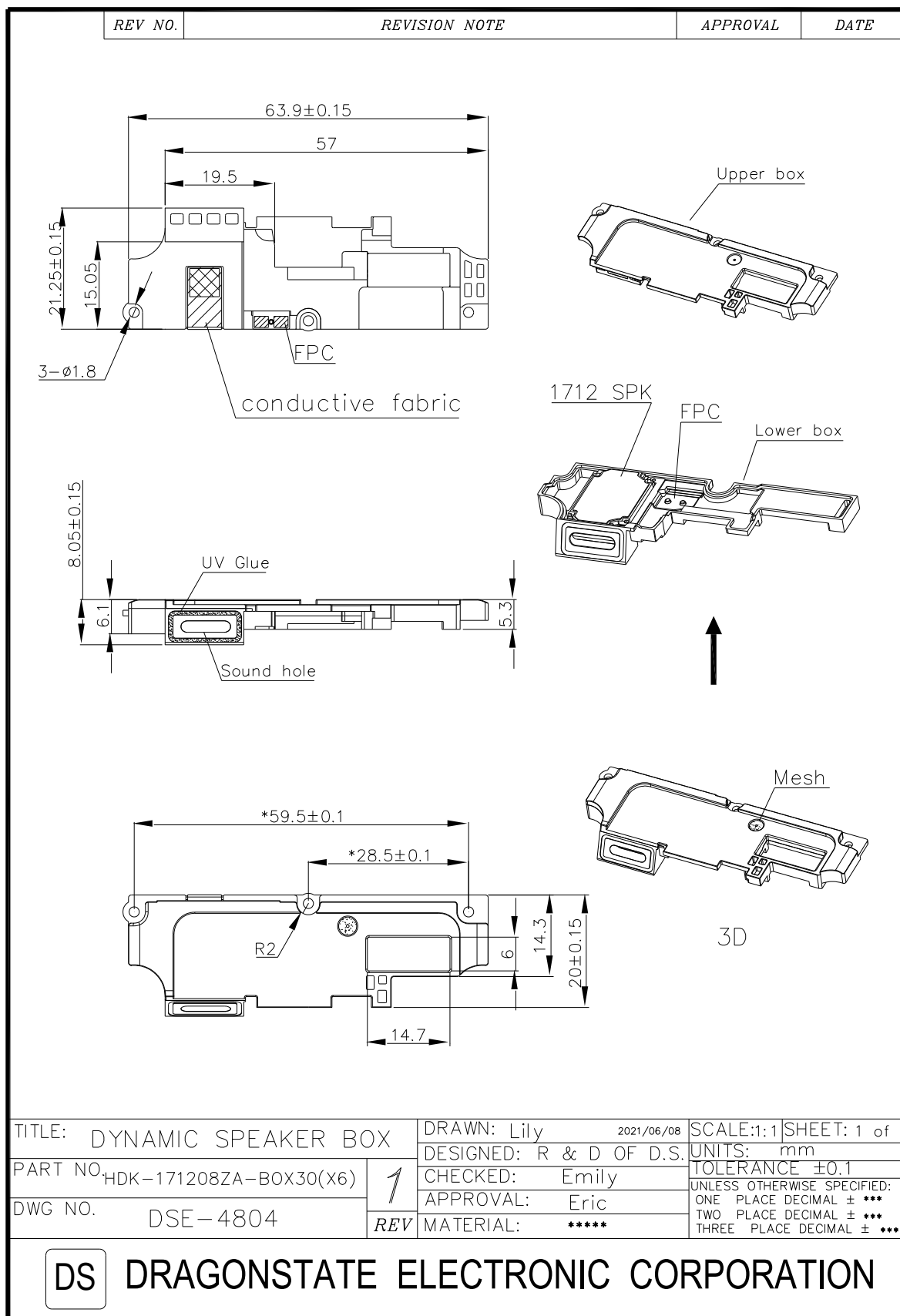
Figure 2: Typical THD Curve

Total Harmonic Distortion

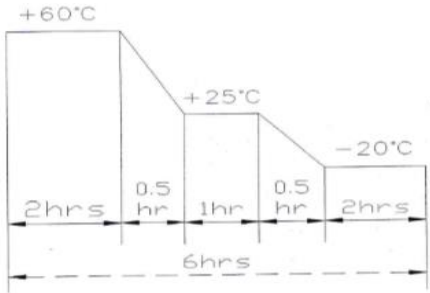


3.Dimension


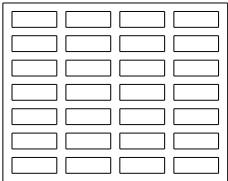
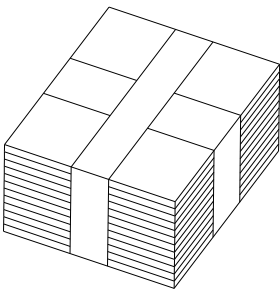
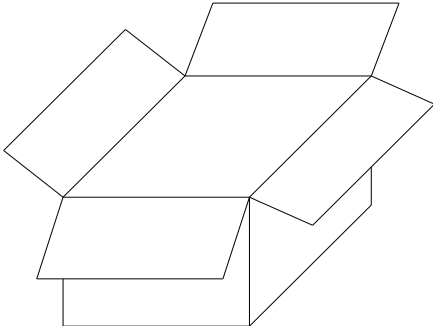
BOX Dimension



4. Reliability Tests

Items.		Specifications
01	High temp. Test	Keep 96 hours at $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
02	Low temp. Test	Keep 96 hours at $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and leave 3 hours in normal temperature and then check
03	High temp/Humidity test	Keep 48 hours at $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ relative humidity 95% and leave 3 hours in normal temperature and then checked.
04	Temp./Humidity cycle	<p>The part shall be subjected 4 cycles. One cycle shall be 6 hours and consist of;</p> 
05	Thermal cycle test.	Low temperature: $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$, High temperature: $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$, cycle: 1 hour/ each cycle, and then keep 5 cycles in a room.
06	Vibration	10~200~10Hz sin-wave sweep 15min. 5G (constant) x,y, z 3 direction. 2 hours each, total 6 hours.
07	Fix drop test	Fix on jig. Then drop from 100cm height to the concrete floor x, y, z 6 direction. 5 times each, total 30 times.
08	Free drop test	Free drop from 75cm height to the concrete floor x, y, z 6 direction. 1 times each, total 6 times.
09	Rated Power test	Rated power pink noise is applied for 96 hours
10	Max Power test	Max power 1 min on – 2 min off for 10 cycles.
11	Terminal strength test	Capable of withstand 1kg load for 30 seconds without resulting in any damage or rejection.
Criterion: After these test, the change of SPL shall be within ± 3 dB.		

5 .Packing

REV NO.	REVISION NOTE	APPROVAL	DATE
	<div style="text-align: center;">  </div> <div style="text-align: right; padding-top: 10px;"> Cover(350x285x5mm) Material: Paper </div>		
	<div style="text-align: center;">  </div> <div style="text-align: right; padding-top: 10px;"> Box(350x285x15mm) 28pcs Material: Paper+Epe </div>		
	<div style="text-align: center;">  </div> <div style="text-align: right; padding-top: 10px;"> Middle(350x285x180mm) 28x12=336(pcs) Material: Paper+Epe </div>		
	<div style="text-align: center;">  </div> <div style="text-align: right; padding-top: 10px;"> Outer Box (590x390x405mm) 672pcs(336pcsx2) Material: Paper </div>		
TITLE: Packing		DRAWN: Lily DESIGNED: R & D OF D.S. CHECKED: Emily APPROVAL: Eric MATERIAL: *****	SCALE:1:1 SHEET: 1 of 1 UNITS: mm TOLERANCE ±0.5 UNLESS OTHERWISE SPECIFIED: ONE PLACE DECIMAL ± *** TWO PLACE DECIMAL ± *** THREE PLACE DECIMAL ± ***
PART NO.	<div style="border: 1px solid black; padding: 5px; width: 30px; margin: 0 auto;">1</div> REV		
DWG NO.			
<div style="display: inline-block; border: 1px solid black; padding: 2px 5px; margin-right: 10px;">DS</div> DRAGONSTATE ELECTRONIC CORPORATION			