# SPECIFICATION

Customer : AUX

Applied To :

Product Name : Two mode speaker

Model Name : KP1810M1-822

Drawing No. : KFC3239

Signature of Approval

| |
|---|
| |

Signature of KEPO

| Approved by | Checked by | Issued by | Date |
|---|---|---|---|
| | | | |

ISO9001 Certificate

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# 1. Scope

This specification is applied to the two mode dynamic speaker which is used all of the electrical acoustic product.

-- compact, rich sound

-- applications: mobile phone, PDA, notebook computer, etc. ..

# 2. General

2.1 Out-Diameter : 1810 mm

2.2 Height : 4.0 mm

2.3 Weight : 1.1 gr.

2.4 Operating Temperature range:

-20~+70℃ without loss of function

2.5 Store Temperature range:

-40~+85℃ without loss of function

# 3. Electrical and Acoustic Characteristics.

Test condition : 15 ~ 35 ℃, 25% ~ 85% RH, 860~1060 mbar

## 3.1 Speaker

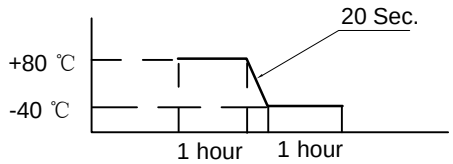
| | Items | Specification |
|---|---|---|
| 1 | Impedance | 8Ω ± 15%(at 1Vrms,1.5kHz) |
| 2 | Sound Pressure Level | 85dB ± 3dB( 1kHz/0.1W/0.1M ) |
| 3 | Resonance Frequency | 1000 Hz ± 20% |
| 4 | Frequency Range | $F_0$ ~ 10.0kHz |
| 5 | Input Power | Rated 0.5W / Max. 1.1W |
| 6 | Distortion | <10% Max. at 2kHz/2Vrms |
| 7 | Buzz and Rattle | Should not be audible buzzes,rattles when the 2.0V sine wave signal swept at frequency range. |
| 8 | Polarity | When supplied plus D.C. voltage to (+) terminal, the cone diaphragm must move to forward. |

## 3.2 Receiver

| | Items | Specification |
|---|---|---|
| 1 | Impedance | 8Ω ± 15%(at 1Vrms,1.5kHz) |
| 2 | Sound Pressure Level | 112 dB ± 3dB( 1kHz/100mV ) |
| 3 | Frequency Range | 300~3400Hz |
| 4 | Input Power | Rated 10mW / Max. 30mW |
| 5 | Distortion | <3% Max. at 1kHz/1Vrms |
| 6 | Buzz and Rattle | Should not be audible buzzes,rattles when the 0.28V sine wave signal swept at frequency range. |

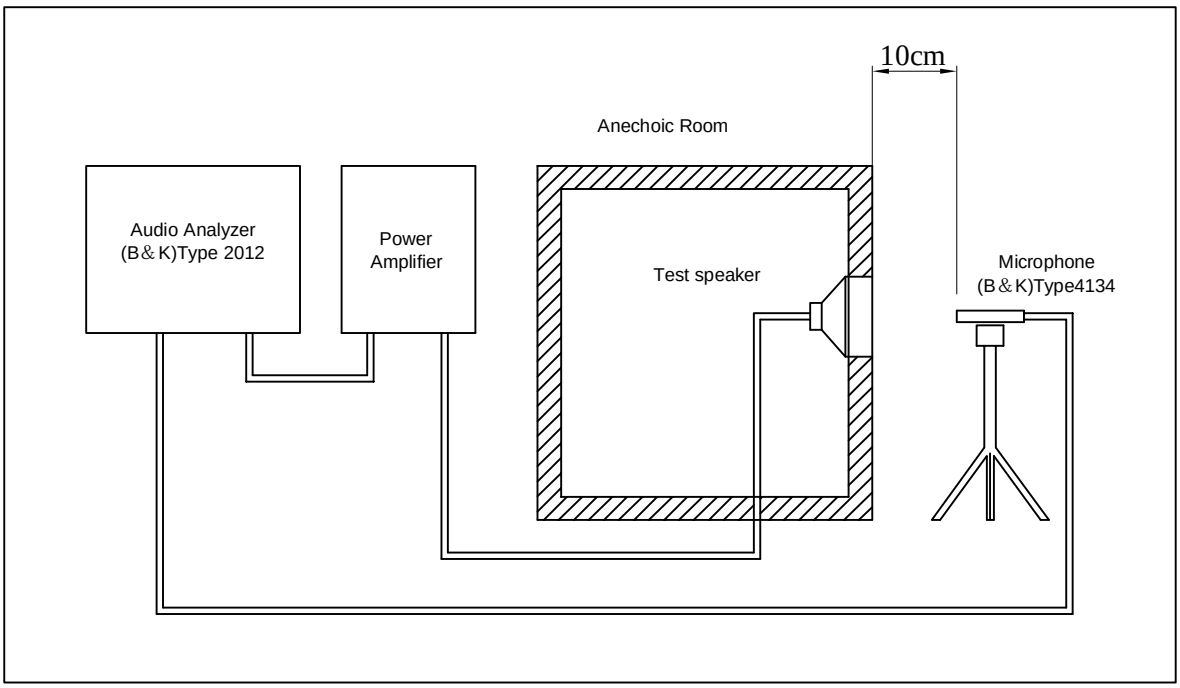
# 4. Reliability Test

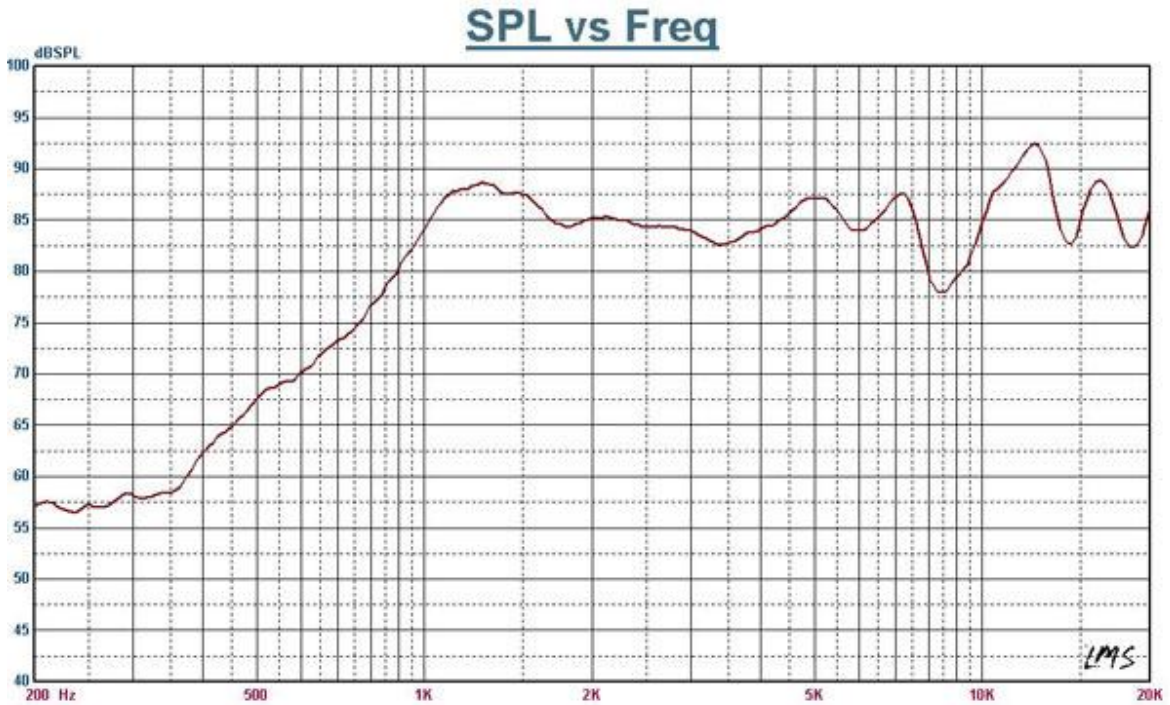
After test(1~7item), the speaker S.P.L . difference shall be within ± 3dB, and the appearance not exist any change to be harmful to normal operation(e.g. cracks,rusts,damages and especially distortion).

| | Item | Specification |
|---|---|---|
| 1 | High Temperature Test | After being placed in a chamber with +85± 3 ℃ for 96 hours and then being placed in natural condition for 1 hour, speaker shall be measured. |
| 2 | Low Temperature Test | After being placed in a chamber with -40± 3 ℃ for 96 hours and then being placed in natural condition for 1 hour, speaker shall be measured. |
| 3 | Humidity Test | After being placed in a chamber with 85 to 90%R.H. at +40± 2 ℃ for 96 hours and then being placed in natural condition for 1 hour, speaker shall be measured. |
| 4 | Thermal Shock Test | After being placed in a chamber at +80 ℃ for 1 hour, then speaker shall be placed in a chamber at -40 ℃ for 1 hour(1 cycle is the below diagram).<br>After 6 above cycles, speaker shall be measured after being placed in natural condition for 1 hour.<br>  |
| 5 | Vibration Test | After being applied vibration of amplitude of 1.5mm with 10 to55Hz band of vibration frequency to each of 3 perpendicular directions for 1 hour, then placed in natural condition for 1 hour, speaker shall be measured. |
| 6 | Drop Test | The speaker when mounted in the jig which weight 85g~100g, shall with stand 15 times random drops from a height of 1.5 meter to a concrete floor faced with 5mm thick hard wood board.and be nothing mechanical damage. |
| 7 | Load test | The speaker after being applied loading white noise with input power 0.5W(2.0Vrms.) for 96 hours, then placed in natural condition for 1 hour, speaker shall be measured. |
| | | The receiver after being applied loading white noise with input power 10mW(0.28Vrms.) for 96 hours, then placed in natural condition for 1 hour, speaker shall be measured. |
| 8 | Insulation test | When they are measured with DC 100V the insulation resistance between v.c. terminal and frame must be more than 1 MΩ |

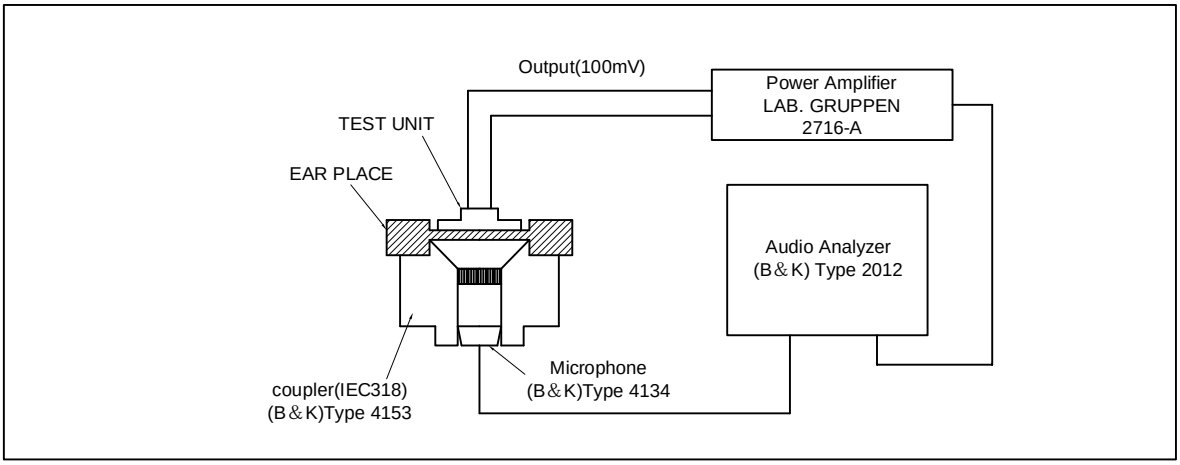
# 5. Measurement Block Diagram & Response curve

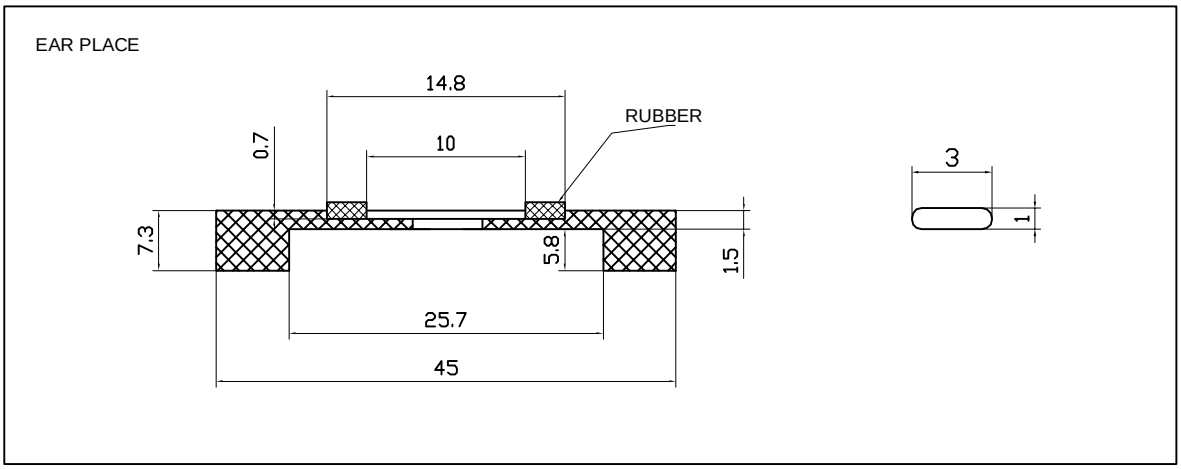
## 5.1 Speaker

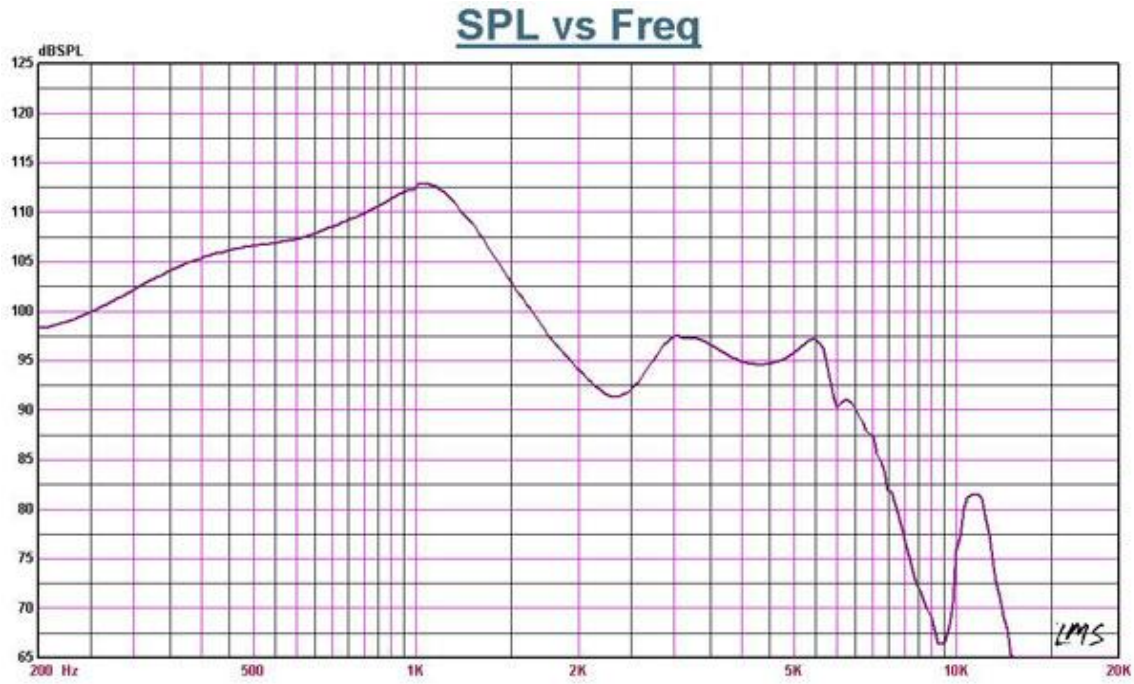


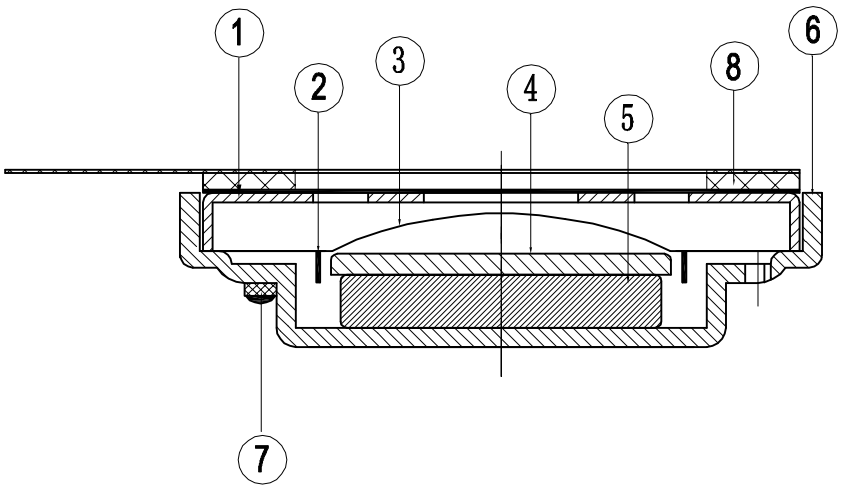
## 5.2 Receiver


Output(100mV)
Power Amplifier
LAB. GRUPPEN
2716-A
TEST UNIT
EAR PLACE
Audio Analyzer
(B&K) Type 2012
Microphone
(B&K)Type 4134
coupler(IEC318)
(B&K)Type 4153


EAR PLACE
14.8
10
0.7
RUBBER
3
1
7.3
5.8
1.5
25.7
45

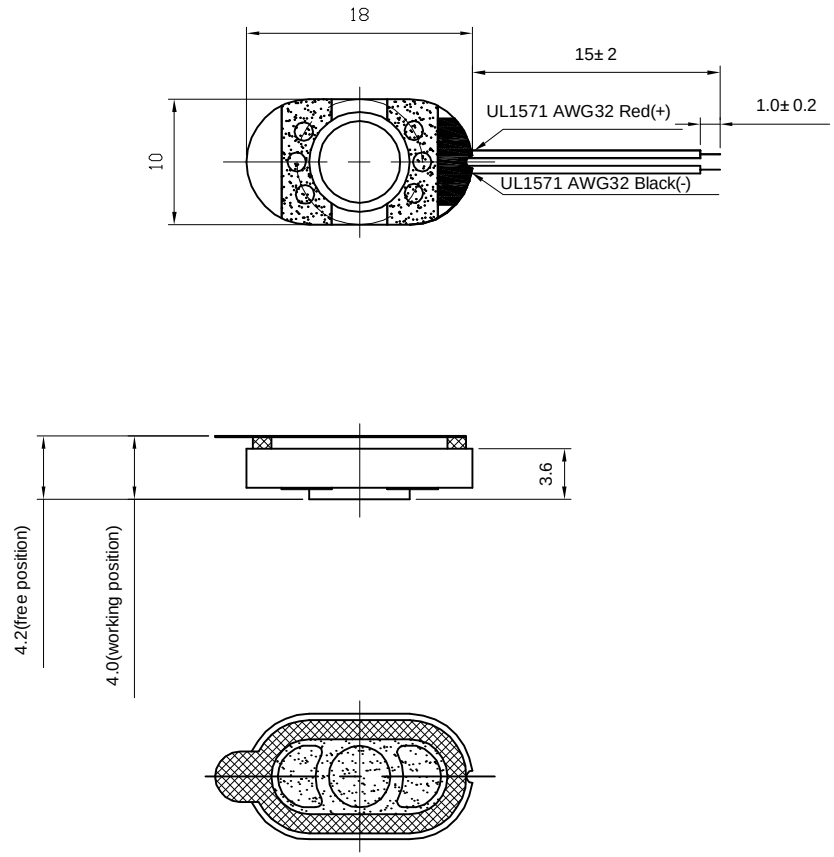

SPL vs Freq
dBSPL
125
120
115
110
105
100
95
90
85
80
75
70
65
200 Hz
500
1K
2K
5K
10K
20K

# 6. Structure




| No. | Part Name | Q'TY | Material | Remarks |
|---|---|---|---|---|
| 8 | Gasket | 1 | unwoven fabric | 800+2B+800+PSR0.3+800 |
| 7 | Terminal | 1 | Epoxy PCB | |
| 6 | Frame | 1 | SPC | |
| 5 | Magnet | 1 | Nd-Fe-B | |
| 4 | Plate | 1 | SPC | |
| 3 | Diaphragm | 1 | PEI | |
| 2 | Coil | 1 | Copper | |
| 1 | Cap | 1 | SUS304 | |

# 7. Dimensions

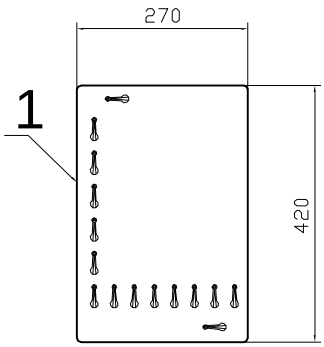



FIRST ANGLE PROJECTION

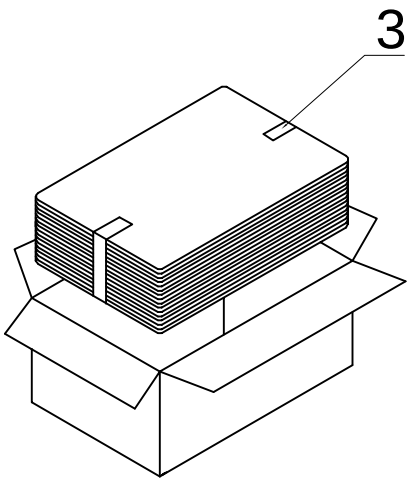
UNIT : mm

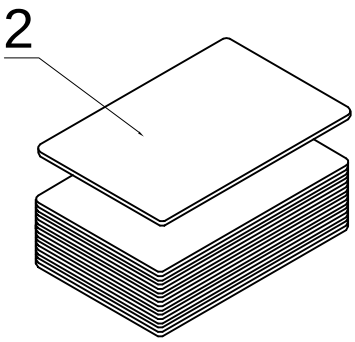
Tolerance : ± 0.2

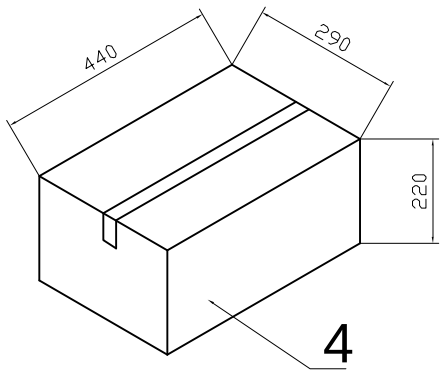
# 8. Packing




100Pcs




QTY: 2000Pcs

440 x290 x220

# 9. Revision

| Rev. No. | DATE | PAGE | DESCRIPTION | SIGN |
|---|---|---|---|---|
| 1.0 | 2007.12.15 | | Primary | |
| 1.1 | 2008.01.25 | | Wire change | |
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