

Specification of Microphone

RoHS Compliance & Halogen Free

LinkMems P/N: LOE6027LQB321EA-O8H04

Designed by	Checked by	Approved by
Kevin	Thomas	Hary

Customer Approval

Approved by:_____



Contents

1. Introduction	3
2. Electrical Characteristics	3
3. Frequency Response Curve	3
4. Test Setup	4
5. Measurement Circuit	4
6. Mechanical Characteristics	4
7. Special Condition	5
7.1. Environmental Condition	5
7.2. Storage Condition	5
8. Packaging Information	5
9. Reliability Test	6

Electret Condenser Microphone

1. Introduction

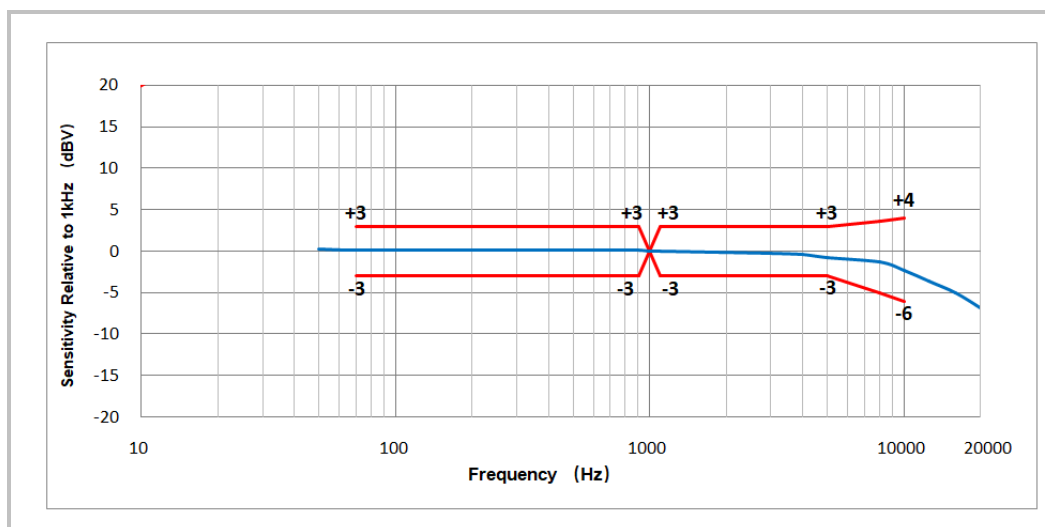
This document is the technical specification of electret condenser (ECM) Omni-Directional Microphone.

2. Electrical Characteristics

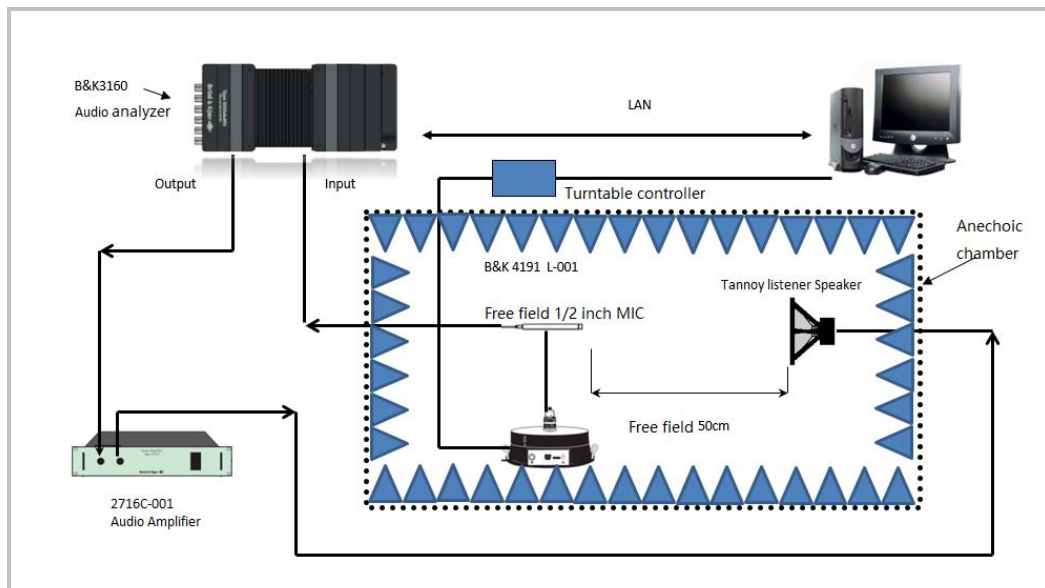
Test Condition: $V_{DD}=2.0V$, $R_L=2.2\text{ k}\Omega$, $23\pm 2^\circ\text{C}$, $55\pm 20\%\text{R.H.}$, unless otherwise specified.

Specification	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Directivity			Omni-directional			
Sensitivity Range	S	94dB SPL @1kHz	-33		-32	dB
			-32		-31	
Output Impedance	Z_{out}	94dB SPL @1kHz			2.2	$\text{k}\Omega$
Current Consumption	I	$V_S=2.0V$ $R_L=2.2\text{ k}\Omega$			450	μA
S/N Ratio	SNR	94dB SPL @1kHz A-Weighted		70		dB(A)
Operating Voltage	V_s		1.0	2.0	10.0	V
Sensitivity vs. Voltage	ΔS	94dB SPL @1kHz $V_S=2.0V$ to $1.5V$			-3	dB
Total Harmonic Distortion	THD	115dB SPL @1kHz		3		%

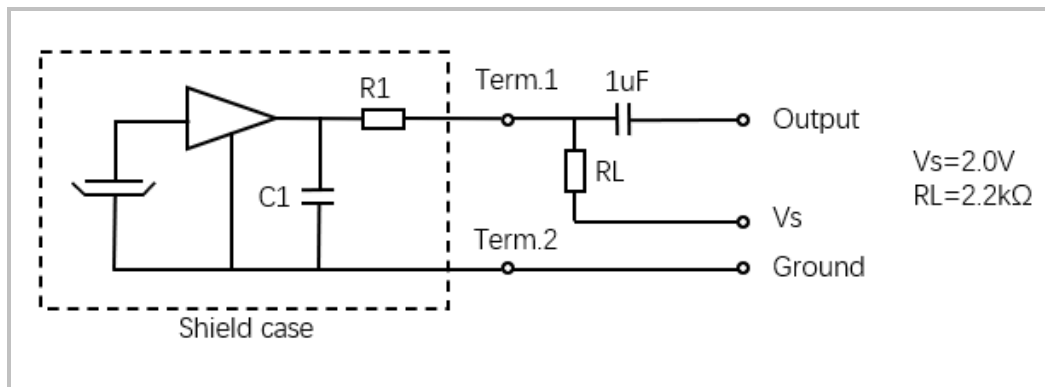
3. Frequency Response Curve



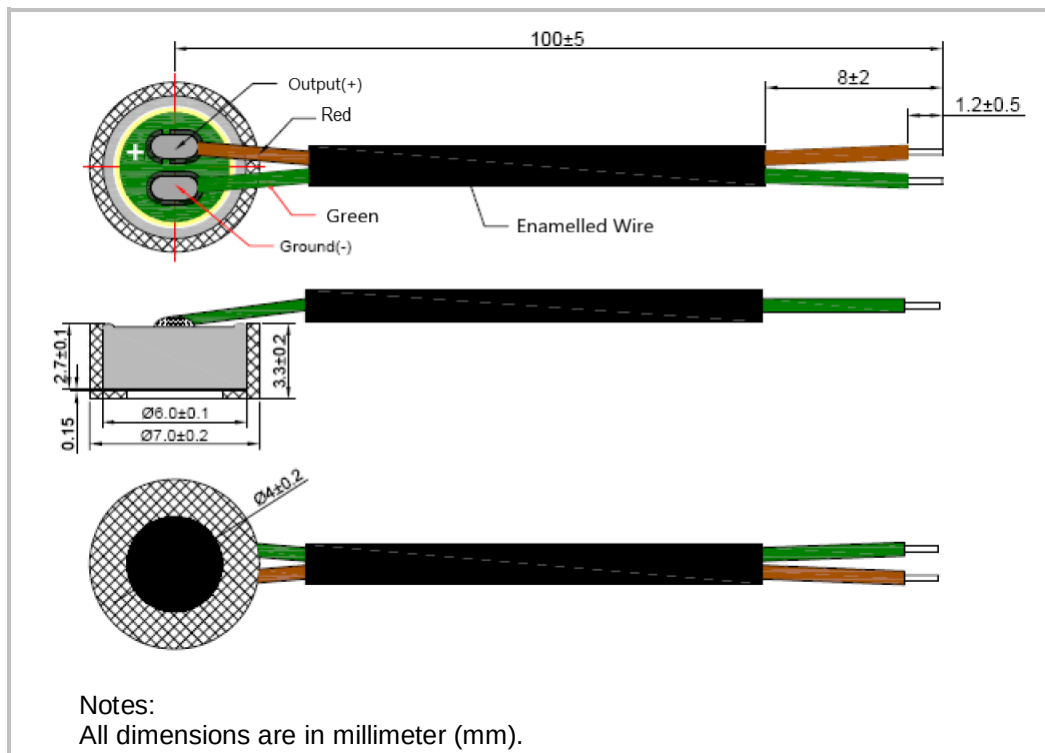
4. Test Setup (Sensitivity Test in Anechoic Room)



5. Measurement Circuit



6. Mechanical Characteristics



7. Special Cautions

7.1 Environmental Condition

- 7.1.1 Storage Condition: $-40^{\circ}\text{C} \sim +80^{\circ}\text{C}$.
- 7.1.2 Operating Condition: $-30^{\circ}\text{C} \sim +70^{\circ}\text{C}$.
- 7.1.3 Arbitration Condition: $20 \pm 1^{\circ}\text{C}$, R.H.63~67%, Air pressure:86~106Kpa.

7.2 Storage Condition

- 7.2.1 Keep ECM in warehouse with humidity less than 75%R.H. and without sudden temperature change, acid air, any other harmful air or strong magnetic field.
- 7.2.2 Please protect products against moist, shock, sunburn and pressure.
- 7.2.3 MSL Please take proper measures against ESD in the process. Please use the shipment package for long-term storage.

8. Packaging Information

TBD

9. Reliability Test

The samples should be placed in the room with $20 \pm 2^{\circ}\text{C}$, $65 \pm 5\%\text{R.H.}$ for 3 hours at least before final measurement, unless otherwise specified.

Item	Detail	Standard
High temperature Test	After exposure at $+80^{\circ}\text{C}$ for 200 hours.	$\pm 3 \text{ dB}$
Low temperature Test	After exposure at -30°C for 200 hours.	$\pm 3 \text{ dB}$
Humidity & Heat Test	After exposure at $+40^{\circ}\text{C}$ and 93% relative humidity for 200 hours.	$\pm 3 \text{ dB}$
Thermal Shock	After exposure at -25°C for 30 minutes, at 20°C for 10 minutes, at $+70^{\circ}\text{C}$ for 30 minutes, at 20°C for 10 minutes, 32 cycles.	$\pm 3 \text{ dB}$
Vibration Test	To be no interference in operation after vibrations, 10-55Hz for 2 hours at three axes with 2mm-high amplitude	$\pm 3 \text{ dB}$
Drop Test	The microphone without packaged must be subjected to each 3 drops from the height of 100cm to 1cm thick ceramic tile.	$\pm 3 \text{ dB}$
Soldering Heat Shock	After soldering heat shock temperature $300 \pm 5^{\circ}\text{C}$ for 3 ± 1 seconds.	$\pm 3 \text{ dB}$

Specification Revisions

Revision	Description	Approved	Date
1.1	New Version Released	Hary	24/07/2024