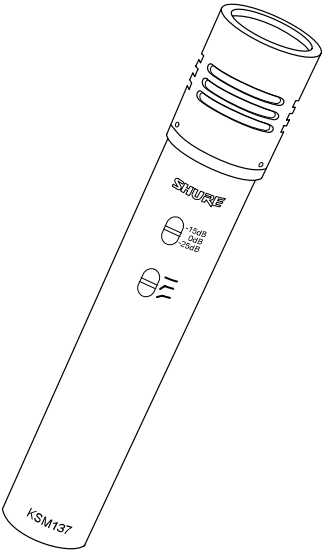
SHURE

KSM137

User Guide



SHURE INCORPORATED

KSM137 CARDIOID CONDENSER MICROPHONE



Thank you for selecting the KSM137

Over 75 years of audio experience has contributed to making the KSM137 one of the finest microphones available.

If you have any questions not answered in this booklet, please contact Shure Applications Engineering at 847-866-2525, Monday through Friday, from 8:00 am to 4:30 pm, CST. In Europe, call 49-7131-72140. Our web address is www.shure.com.

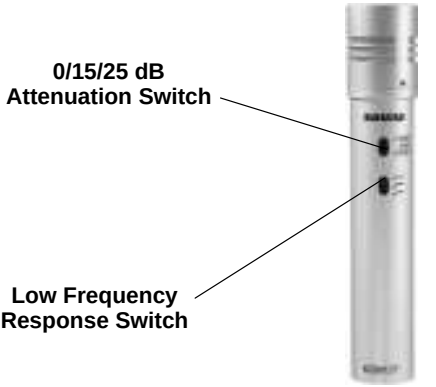


FIGURE 1. KSM137

GENERAL DESCRIPTION

The Shure® KSM137 is an end-address condenser microphone with a cardioid polar pattern. Designed for studio use, yet rugged enough for live applications, the KSM137 can withstand extremely high sound pressure levels (SPL). Its low self-noise and extended frequency response make it ideal for recording musical instruments.

FEATURES

- *A highly consistent cardioid polar pattern*
- *Ultra-thin, 2.5 µm, 24 karat gold-layered, low mass Mylar® diaphragm for superior transient response*
- *Class A, discrete, transformerless preamplifier for transparency, extremely fast transient response, no crossover distortion, and minimal harmonic and intermodulation distortion*
- *Premium electronic components, including gold-plated internal and external connectors*
- *Subsonic filter eliminates low frequency rumble (less than 17 Hz) caused by mechanical vibration*
- *Three-position switchable pad (0 dB, 15 dB, and 25 dB) for handling extremely high sound pressure levels (SPLs)*
- *Three-position switchable low-frequency filter reduces background noise and counteracts proximity effect*

PERFORMANCE CHARACTERISTICS

- *Extended frequency response*
- *Low self-noise*
- *Exceptional reproduction of low-frequency sounds*
- *Can withstand high sound pressure levels (SPL)*
- *High output level*
- *No crossover distortion*
- *Uniform polar response*
- *Superior common mode rejection and suppression of RFI (radio frequency interference)*

MODEL VARIATIONS

KSM137/SL	KSM137/SL ST PAIR
One KSM137 Condenser Microphone	*Two KSM137 Condenser Microphones*
One A137C Carrying Case	*One A137SPC Carrying Case*
One A100WS Windscreen	*Two A100WS Windscreens*
One A57F Stand Mount	*Two A57F Stand Mounts*
One European-threaded adapter that mates the A57F to European–threaded microphone stands	*Two European-threaded adapters that mate the A57F to European-threaded microphone stands*

APPLICATIONS

The KSM137 will produce superior results in any application requiring a high quality microphone. Typical applications include:

- *Close miking of acoustic instruments such as piano, guitar, violins, drums, and percussion*
- *Overhead miking of drums and percussion instruments*
- *Electric guitar amplifiers*
- *Brass and woodwind instruments*
- *Room ambience pick-up (guitar amplifier or drums)*
- *Orchestras, choirs, wind ensembles*
- *Low-frequency instruments such as double bass and kick drum*

NOTE: Sound quality is strongly affected by microphone location and room acoustics. To achieve the best overall sound for a particular application, it may be necessary to experiment with microphone placement and various room treatments.

English

USING THE KSM137

Mounting the Microphone

To secure the KSM137 to a floor stand or boom, thread the mount onto the microphone stand and insert the microphone into the microphone clip.

Power Requirements

The KSM137 requires phantom power and performs best with a 48 Vdc supply (IEC-268-15/DIN 45 596). It can operate on voltages as low as 11 Vdc, but headroom and sensitivity will be decreased slightly.

NOTE: Most modern mixers provide phantom power.

Cable Connections

Use a cable with XLR connectors at each end.

Load Impedance

Shure recommends a load impedance of at least 1000 Ω. When used with modern microphone preamplifiers rated at about 2500 Ω, the KSM137 provides higher maximum SPL capability and output clipping level. When the attenuation switch is set to the –25 dB position, the KSM137 can handle up to 164 dB SPL, and can output +15 dBV into a load of 5000 Ω or greater.

Setting Low-Frequency Response

A three-position switch on the KSM137 lets you adjust the low frequency response of the microphone. The low frequency filters can be used to reduce wind noise, room noise, or proximity effect. Refer to Figure 2.

Flat response. This setting provides the most natural sound reproduction in most applicatons.

Low-frequency cutoff. This setting provides an 18 dB-per-octave cutoff at 80 Hz. It helps eliminate floor rumble and low-frequency noise produced by heating and air conditioning systems. This setting may also be used to compensate for proximity effect or to reduce low frequencies that make an instrument sound dull or muddy.

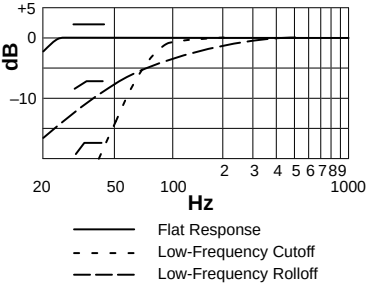


FIGURE 2. LOW FREQUENCY RESPONSES

Low-frequency rolloff. This setting provides a 6 dB-per-octave rolloff at 115 Hz. Use this setting to compensate for proximity effect or to reduce low frequencies that could make an instrument sound dull or muddy.

Setting Attenuation

The attenuation switch on the KSM137 lets you reduce the signal level by up to 25 dB without altering frequency response. This can prevent extremely loud sounds from overloading the microphone. Set the switch to the desired attenuation levels as follows:

0 dB – Move the switch to this position for “quiet” to “normal” sound levels.

-**15 dB** – Move the switch to this position when the microphone is approximately 0.75 meters (2 feet) from sound sources such as a kick drum, snare drum, or electric guitar cabinet.

-**25 dB** – Move the switch to this position when the microphone is 4 inches (10 cm) or less from extremely loud sound sources such as kick drum, snare drum, or guitar cabinets.

English

SPECIFICATIONS

Cartridge Type	Permanently Biased Condenser
Frequency Response	20–20,000 Hz (see Figure 3)
Directional Polar Pattern	Cardioid (see Figure 4)
Output Impedance	150 Ω (actual)
Attenuation Switch	0 dB,15 dB, or 25 dB attenuation
Low Frequency Response Switch	Flat; –6 db/octave below 115 Hz; –18 dB/octave below 80 Hz
Phantom Power	48 Vdc± 4 Vdc (IEC–268–15/DIN 45 596), positive pins 2 and 3
Current Drain	4.65 mA typical at 48 Vdc
Common Mode Rejection	≥ 50 dB, 20 Hz to 20 kHz
Polarity	Positive pressure on diaphragm produces positive voltage on output pin 2 relative to pin 3
Dimensions and Weight	20 mm (0.8 in.) diameter, 122 mm (4.8 in.) long; 100 grams (3.5 oz.) (see Figure 5)
Sensitivity (typical, at 1000 Hz; 1 Pa = 94 dB SPL)	–37 dBV/Pa
Self–noise (typical, equivalent SPL; A-weighted, IEC 651)	14 dB
Maximum SPL at 1 kHz **5000 Ω load (Attenuator on)** **2500 Ω load (Attenuator on)** **1000 Ω load (Attenuator on)**	 145 (160, 170) dB 139 (154, 164) dB 134 (149, 159) dB
Output Clipping Level* **5000 Ω load** **2500 Ω load** **1000 Ω load**	 15 dBV 9 dBV 3 dBV
Dynamic Range **5000 Ω load** **2500 Ω load** **1000 Ω load**	 131 dB 125 dB 120 dB
Signal to Noise Ratio**	80 dB

*20 Hz to 20 kHz; THD < 1%. THD of the microphone preamplifier when applied input signal is equivalent to the cartridge output at specified SPL

**S/N ratio is difference between 94 dB SPL and equivalent SPL of self-noise A-weighted.

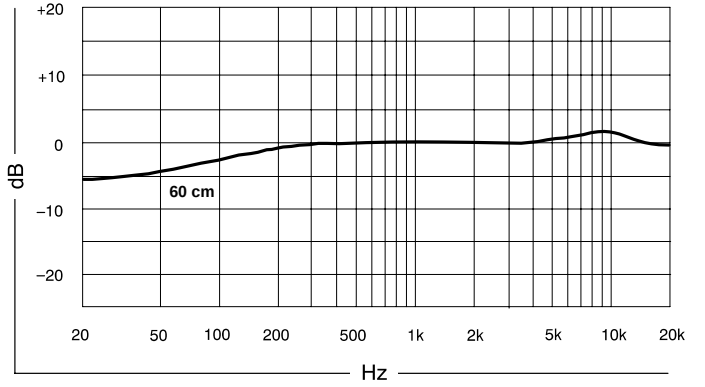


FIGURE 3. TYPICAL FREQUENCY RESPONSE

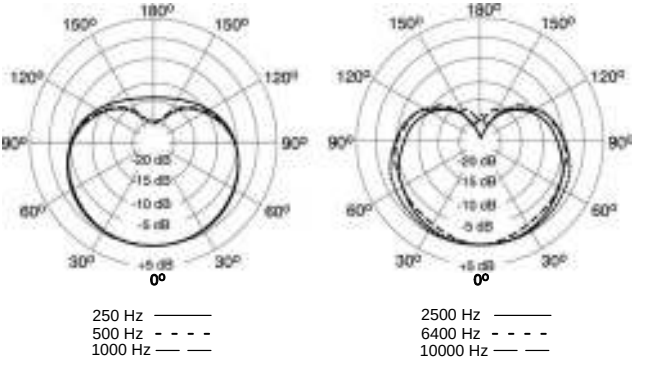


FIGURE 4. TYPICAL POLAR PATTERNS

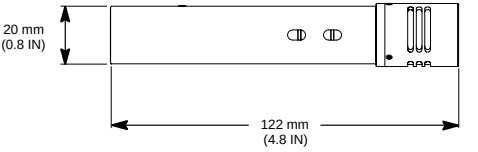


FIGURE 5. DIMENSIONS

CERTIFICATION

Eligible to bear CE Marking; conforms to European EMC directive 89/336/EEC. Meets applicable tests and performance criteria found in European Professional Audio Products EMC Standard EN 55103 (1996); Part 1 (Emissions) and Part 2 (Immunity). The KSM137 is intended for use in environments E1 (residential) and E2 (Light Industrial) as defined in European standard EN 55103. EMC conformance is based on the use of shielded interconnecting cable.

FURNISHED ACCESSORIES

Case A137C
Case (Stereo Pair) A137SPC
Windscreen A100WS
Microphone Clip A57F

OPTIONAL ACCESSORIES

SHOCKSTOPPER™ Shock Mount A53M

SERVICE

For additional microphone service or parts information, please contact the Shure Service Department at 1-800-516-2525. Outside the United States, please contact your Authorized Shure Service Center.

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Patent Des. 479,837

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