AT8022

audio-technica

X/Y Stereo Microphone

broadcast & production microphones

Features

- **Designed for video camera-mount use as well as for stereo field recording, interviews and home recording**
- **Compact, lightweight design is perfect for use with handheld digital recording devices**
- **Operates on battery or phantom power—for use with pro or consumer equipment**
- **Innovative coincident capsule configuration produces accurate stereo image in smaller housing**
- **Includes two cables: one balanced (two 3-pin XLRM-type connectors at output); one unbalanced (3.5 mm TRS at output)**
- **Switchable 80 Hz high-pass filter minimizes pickup of undesired low-frequency sounds**

Description

The AT8022 is a fixed-charge condenser microphone with an X/Y stereo polar pattern. It is designed for broadcast, recording and field use.

The microphone requires 11V to 52V phantom power or a 1.5V AA battery for operation. A battery need not be in place for phantom power operation.

The microphone offers an innovative coincident capsule configuration. This allows for a smaller housing while producing an X/Y stereo image with the spatial impact and realism of a live sound field.

The microphone includes two cables: a 2 m (6.5') balanced cable terminating in a 5-pin XLRF-type and two 3-pin XLRM-type connectors; a 0.6 m (2') unbalanced cable terminating in a 5-pin XLRF-type and a 3.5 mm TRS connectors. The output of the microphone is a 5-pin XLRM-type connector.

A switch permits choice of flat response or low-frequency roll-off (via integral 80 Hz high-pass filter) to help control undesired ambient noise.

The microphone is enclosed in a rugged housing. The included AT8405a stand clamp permits mounting on any microphone stand with $^{5}/_{8}$"-27 threads. A windscreen, a battery and a soft protective pouch are also included.

Operation and Maintenance

The AT8022 requires 11V to 52V phantom power or a 1.5V AA battery for operation. A battery need not be in place for phantom power operation.

To install the battery, unscrew the lower section of the microphone body to reveal the battery compartment. Insert a fresh 1.5V AA battery in the handle compartment ("+" end up), then reassemble the microphone. Alkaline batteries are recommended for longest life. Remove the battery during long-term storage. Battery switch must be on for battery operation. Turn off when not in use to preserve battery life. Battery switch has no effect on phantom power operation.

Note: Use battery power only when connecting the AT8022 to an unbalanced input.

Output for each stereo channel is low impedance (Lo-Z) balanced. The balanced signals appear across Pins 2 and 3 for the left channel, Pins 4 and 5 for the right channel. Pin 1 is ground (shield) for both channels. Output is "Pins 2 and 4 hot"—positive acoustic pressure produces positive voltage at Pins 2 and 4.

The end of the grille should be aimed at the sound source with the top of the microphone facing up (the top of the microphone is indicated by the left-right stereo image printed on the housing), so the stereo image matches the sound source.

Locating the microphone nearer the sound source enhances the width of the stereo image, while decreasing room ambience. Conversely, as the mic position moves away from the sound source, a narrower left/right stereo image results and more of the "room sound" is noted.

An integral 80 Hz high-pass filter provides easy switching from a flat frequency response to a low-end roll-off. The roll-off position reduces the pickup of low-frequency ambient noise (such as traffic, air-handling systems, etc.), room reverberation and mechanically coupled vibrations. To engage the high-pass filter, slide the switch toward to "bent" line.

Avoid leaving the microphone in the open sun or in areas where temperatures exceed 110° F (43° C) for extended periods. Extremely high humidity should also be avoided.

Architect's and Engineer's Specifications

The microphone shall be a fixed-charge stereo condenser. It shall have an X/Y stereo polar pattern and a frequency response of 20 Hz to 15,000 Hz. The microphone shall operate from an external 11V to 52V DC phantom power source, or alternatively, from a 1.5V AA/UM3 battery. It shall be capable of handling sound input levels up to 128 dB (phantom) or 120 dB (battery) with a dynamic range of 109 dB (phantom) or 101 dB (battery). Nominal open-circuit output voltage shall be 12.5 mV at 1V, 1 Pascal. Output shall be low impedance balanced (250 ohms – phantom, 300 ohms – battery).

The output of the microphone shall be a 5-pin XLRM-type connector. The microphone shall include two cables: a 2 m (6.5') balanced cable with a 5-pin XLRF-type and two 3-pin XLRM-type connectors; a 0.6 m (2') unbalanced cable with a 5-pin XLRF-type and a 3.5 mm TRS connectors. The microphone shall include a switch that permits choice of flat response or 80 Hz low-frequency roll-off.

The microphone shall be 186.0 mm (7.32") long and have a maximum head diameter of 47.6 mm (1.87"). Weight shall be 247 grams (8.7 oz). The microphone shall include a stand clamp, a windscreen, a battery and a soft protective pouch.

The Audio-Technica AT8022 is specified.

Specifications

Element	Fixed-charge back plate, permanently polarized condenser
Polar pattern	X/Y Stereo
Frequency response	20-15,000 Hz
Low frequency roll-off	80 Hz, 18 dB/octave
Open circuit sensitivity (Phantom / Battery)	–38 dB (12.5 mV) / –38 dB (12.5 mV) re 1V at 1 Pa*
Channel balance	<2.5 dB
Impedance (Phantom / Battery)	250 ohms / 300 ohms
Maximum input sound level (Phantom / Battery)	128 dB / 120 dB SPL, 1 kHz at 1% T.H.D.
Dynamic range (typical) (Phantom / Battery)	109 dB / 101 dB, 1 kHz at Max SPL
Signal-to-noise ratio[1]	75 dB, 1 kHz at 1 Pa
Phantom power requirements	11-52V DC, 2 mA typical (each channel)
Battery type	1.5V AA/UM3
Battery current / life	0.7 mA / 700 hours typical (alkaline)
Switches	Battery On/Off; Flat, roll-off
Weight (less cable and accessories)	247 g (8.7 oz)
Dimensions	186.0 mm (7.32") long, 47.6 mm (1.87") maximum head diameter, 21.0 mm (0.83") body diameter
Output connector	Integral 5-pin XLRM-type
Cables	Balanced: 2.0 m (6.5') long, 8 conductor, shielded, vinyl-jacketed stereo cable with 5-pin XLRF-type connector at microphone end and two 3-pin XLRM-type connectors at output end; Unbalanced: 0.6 m (2.0') long stereo cable with 5-pin XLRF-type connector at microphone end and 3.5 mm TRS connector at output end
Audio-Technica case style	S12
Accessories furnished	AT8405a stand clamp for 5/8"-27 threaded stands; windscreen; battery; soft protective pouch

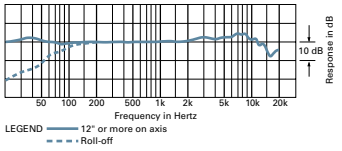
In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

1 Pascal = 10 dynes/cm^2 = 10 microbars = 94 dB SPL

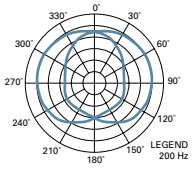
[1] Typical, A-weighted, using Audio Precision System One.

Specifications are subject to change without notice.

frequency response: 20–15,000 Hz

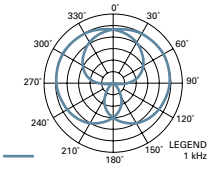


polar pattern (200 Hz)



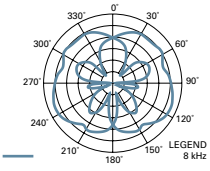
SCALE IS 5 DECIBELS PER DIVISION

polar pattern (1 kHz)



SCALE IS 5 DECIBELS PER DIVISION

polar pattern (8 kHz)



SCALE IS 5 DECIBELS PER DIVISION

audio-technica

Audio-Technica Corporation
audio-technica.com