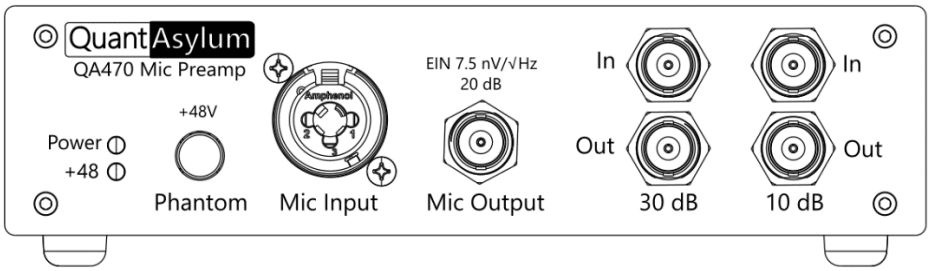
QA470

Mic Preamp



- ✓ Precise Mic Gain of 20 dB
- ✓ Isolated
- ✓ Low Noise
- ✓ +48V Phantom Power
- ✓ 0.1% Tolerance on Front-end Resistors

Introduction

The QA470 Mic Preamp is a low-noise pre-amp with a fixed +20 dB of gain. The mic pre-amp is built from an SSM2019 differential amplifier, delivering an equivalent input noise of 7.5 nV/√Hz.

The front-end is built from 0.1% thin film resistors, ensuring a solid CMRR approaching 90 dB.

When used with calibrated microphones, you can display dBSPL directly in the QA401 and make dBA measurements over a specified bandwidth.

Newer MEMS mics can have acoustic overload points (AOP) of 130 dB, meaning the output can approach -4 dBV at overload. The QA470 readily handles this with its internal 12V rails when driving +16 dBV.

The QA470's Phantom Power is also very low noise. The QA470 exhibits the same A-weighted measurement regardless of phantom power state.

And for those times you need a general purpose low-noise pre-amp, the QA470 offers both 10 dB and 30 dB amps based on the OPA1612. These amps can tolerate DC voltages up to +50V, making them an idea choice for measuring noise on DC supplies.

Are You Ready?

Are you testing your products thoroughly before they leave your factory? If not, you should be. Contact: sales@QuantAsylum.com

Specifications

Mechanical

Dimensions	177w 44h 97d mm, 116mm deep with BNC
Weight	410 grams
Case Material	Powder coated aluminum

Electrical

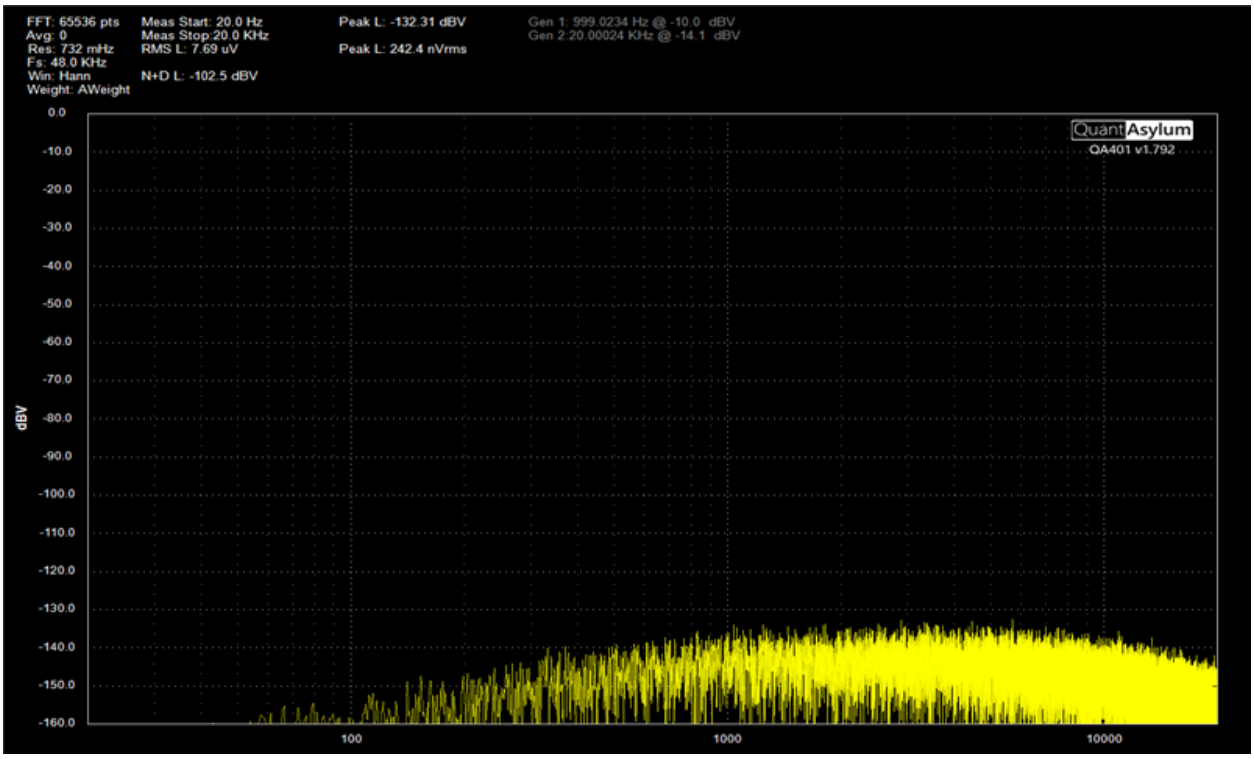
Inputs	XLR and ¼" differential input on mic preamp Single-ended BNC on 10 and 30 dB amplifiers
Input Z	3K on Mic preamp
Input Coupling	AC, F_C = 2 Hz
Input Gain	20 dB, ±0.2 dB on mic preamps 30 and 10 dB, ±0.2 dB on 10 and 30 dB amplifiers

Mic Preamp CMRR	>80 dB input referenced (>60 dB output referenced)
Max Output Swing	16 dBV = 6.3Vrms into impedance > 1 kOhm
Mic Preamp Output Noise Floor	8 uVrms A-weighted, input shorted, 20-20 kHz bandwidth
THD	Typ >-100 dB, 1 kHz, -20 dBV input on mic preamp Typ > 90 dB, 1 kHz, -30 dBV input on 30 dB preamp Typ > 100 dB, 1 kHz, -10 dBV input on 10 dB preamp
Output Impedance	50Ω on all outputs
Bandwidth (all amps)	> 500 kHz
Flatness (all amps)	10 Hz to 20 kHz, ±0.1 dB 10 Hz to 500 kHz, ±1 dB
Included Accessories	None

QA470 Measurements

Noise Floor (7.7 uVrms measured)

This measurement is made A-weighted with the inputs to the mic preamp short and phantom power ON



Common Mode Rejection Ratio

This measurement is made by applying the same 1 kHz 0 dBV signal to both + and – inputs of the QA70 mic preamp. The resultant spectrum is shown below. The -63 dB amplitude reflects the attenuation of the common-mode signal *plus* the 20 dB gain of the amplifier.