

## **Accusound C# notch filter.**

This document has been created especially for this website; a full copy is available in PDF format from the link above.

This document is particularly aimed at the use of a microphone on a fiddle when positioned over or close to the f hole.

When a microphone is used on a violin close to the f hole it may be affected by the inherent resonance of the f hole-body resonance. This resonance is around C# or 277Hz. If the microphone is placed too close to the f hole then this resonance can cause a dramatic feedback (see the workshop on feedback to understand the causes and effects of feedback), very quickly at a relatively low amplification level.

The Accusound C# notch filter gives the user some control over this resonance. The filter is adjustable to allow the minimum filtering possible that will solve your problem. The filter is centred on C#, 277Hz. but may be widened/narrowed and deepened or made more shallow by use of two rotating knobs. By widening the filter more frequencies may be removed. This is useful if the resonance is not very sharp as it may be on different instruments or if the microphone is not too close to the f hole. By deepening the filter more level of the selected frequencies is removed. Increased depth is required as you increase the volume of your PA system.

If either of these knobs are used too severely, then the amplified quality will be reduced. A reduction in quality by this means is often acceptable as it allows an overall increase in level and so a better overall balance of the sound. It is however better to use a minimum adjustment of these controls increasing them only to achieve sufficient level from your PA system.