Using the Ag1171 with a Crosspoint Switch



When connecting the Ag1171 to a Crosspoint switch, care must be taken to prevent the ringing signal (generated by the Ag1171) from causing noise on the calling phone.

When the Ag1171 is ringing a phone, $V_{\rm IN}$ reflects a portion of the ringing signal back to the Crosspoint switch. Even with that switch input disabled, the amplitude of this signal can overdrive the internal gates and generate noise on the calling parties phone.

So to prevent the ringing signal from driving the Crosspoint input outside its +5V or 0V rail, a schottky diode clamp, (BAT54S), needs to be added after the 100nF coupling capacitor.

 V_{OUT} is not such a problem and this can be addressed by adding a resistive divider (4K7 / 10K) to centre the DC bias on the Crosspoint switch to $\sim +2.5V$ (mid rail).

Also this gives 3dB loss to the audio signal which provides better loop stability. A straight through connection gives 0dB audio loss, which can cause "howl round" instability with some telephone sets.

