

Apple 1 Daughter Board with Audio

For those of us that like to use the Apple 1 Cassette Interface board (much for authenticity) it is useful to provide some audio support that plays the ACI in and out on the AV speakers so there is an audible output. When configured this way there have been programs written to use the Record audio to provide an audio output to programs.

Figure 1 is a block diagram of the Audio circuit added to the Keyboard Daughter Board. J11 and J12 are mono connected 3.5mm jacks that connect to the ACI. J13 is a TRRS4 3.5mm connector compatible with the iPad and iPhone to allow read and write to the iPhone or iPad. The audio from the tape player or iPhone simply passes directly through to the AV Out to the Display. The Audio from the ACI can be routed directly to the tape player but needs to be amplified to provide Audio to the Display and this is done with an LM393 Comparator. An adjustable output is also provided for the iPhone input level so it can be changed if needed.

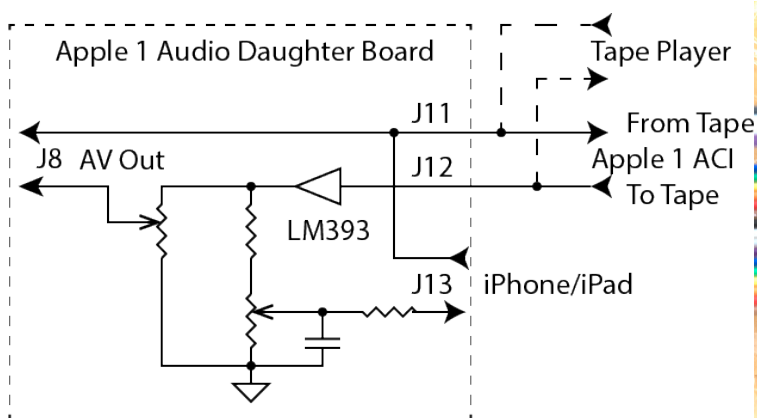


Figure 1 ACI Audio Circuit

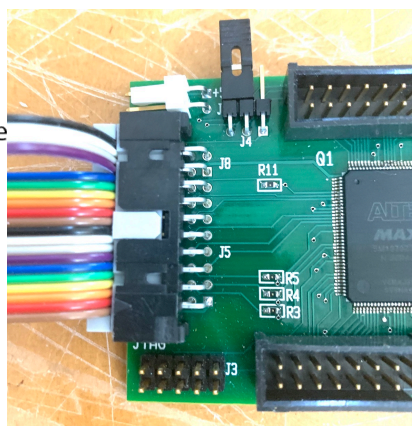


Figure 2 A1 Daughter Bd Connector

The AV Output connection is J8 and if we look at Figure 2 we see that the 20 pin IDC connector is labeled with both J8 and J5. J5 is the Keyboard connector so that 4 pins of the connector form J8 and 16 pins form J5. The cables are easily split as can be seen in Figure 2 either at the Daughter board or at a different point in the cabling system.

Figure 3 is a photograph of the top and bottom of the Keyboard Encoder board with audio circuitry added.

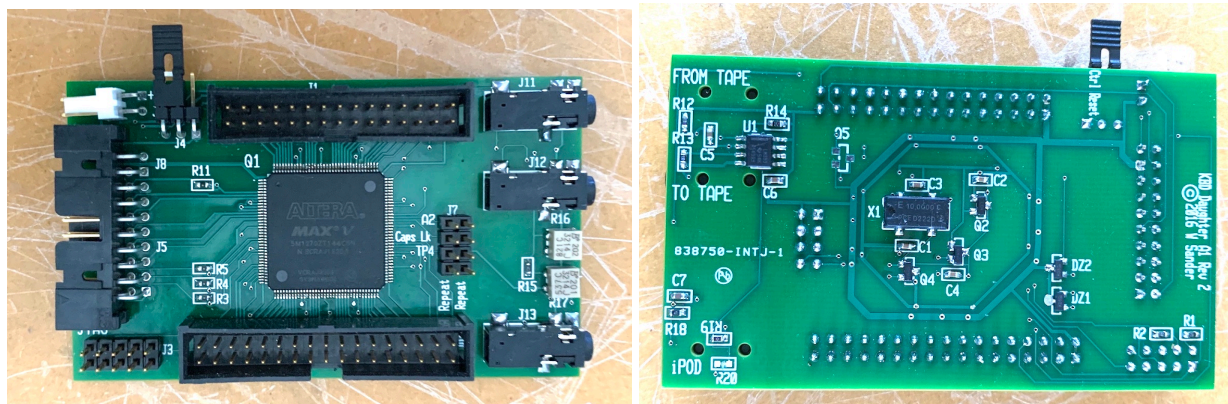


Figure 3 Apple 1 Audio Board Top and Bottom

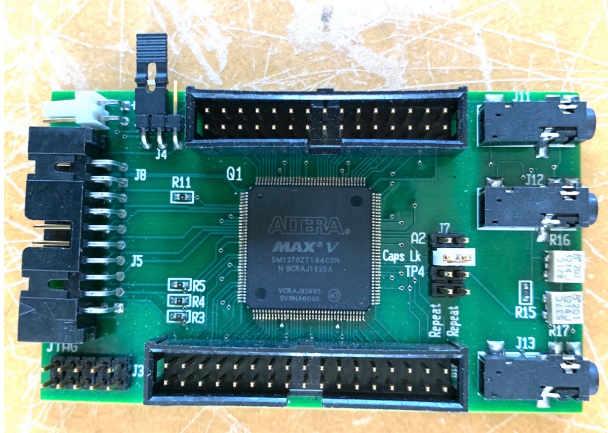


Figure 4 A1 Daughter Capslock off on Pwr Up

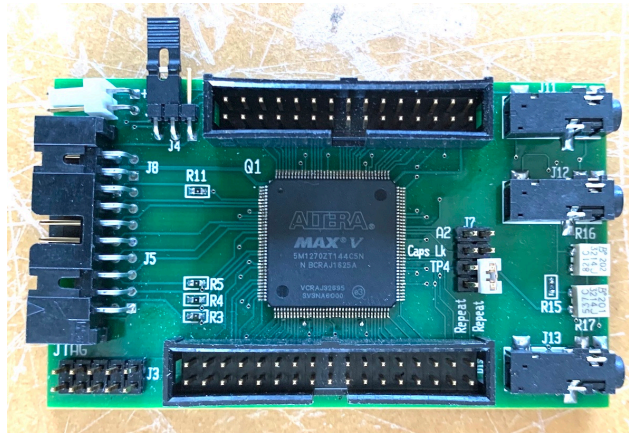


Figure 5 A1 Daughter Disable AutoRepeat

As in the regular Daughter boards there is an option to have power up Caps Lock be off and an option to disable auto repeat. The positioning of these options are a little different so they are shown in Figure 4 and 5.

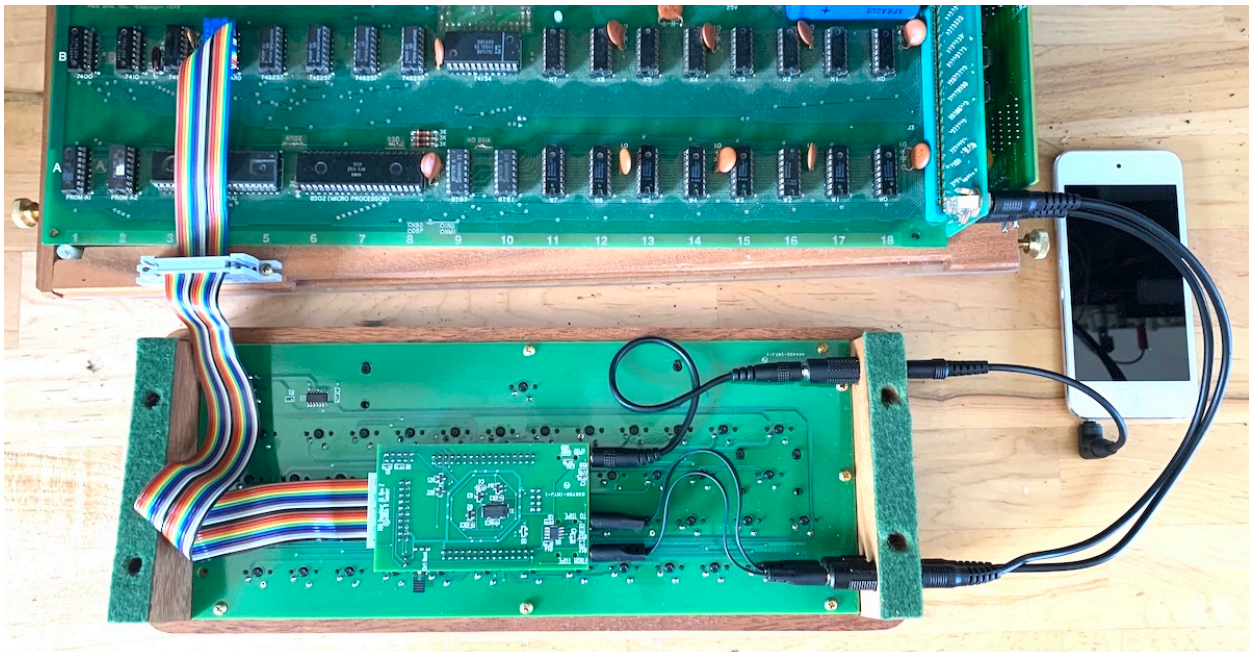


Figure 6 Keyboard Connection Bottom View

Figure 6 shows a typical connection from the Audio Daughter board. 3.5mm feedthrough couplers have been provided to provide connection to the ACI and recording devices. The 20 pin IDC cable provides a connection to the main Logic board chassis where the split of J5 and J8 take place.

Figure 7 shows a connection for the traditional tape player. Figure 8 shows a connection to an iPod which is the most reliable way use the ACI.



Figure 7 Keyboard Tape Player Connection

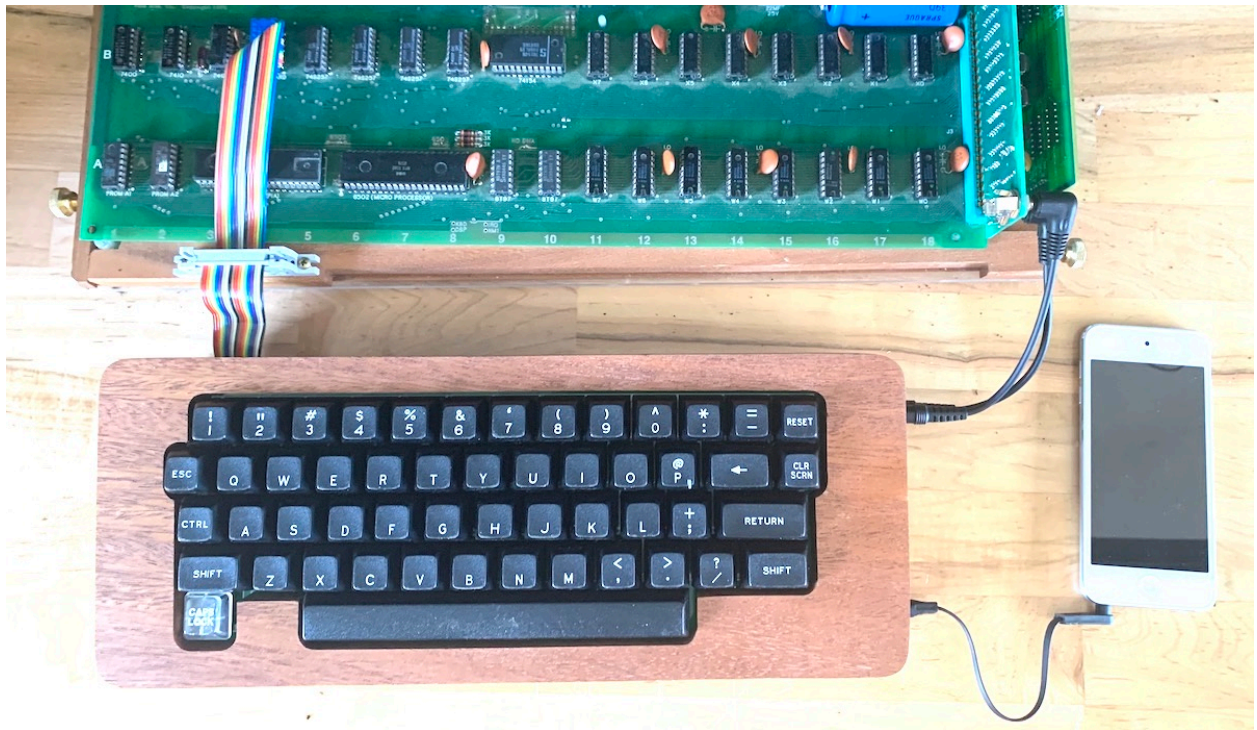


Figure 8 Keyboard iPod Connection