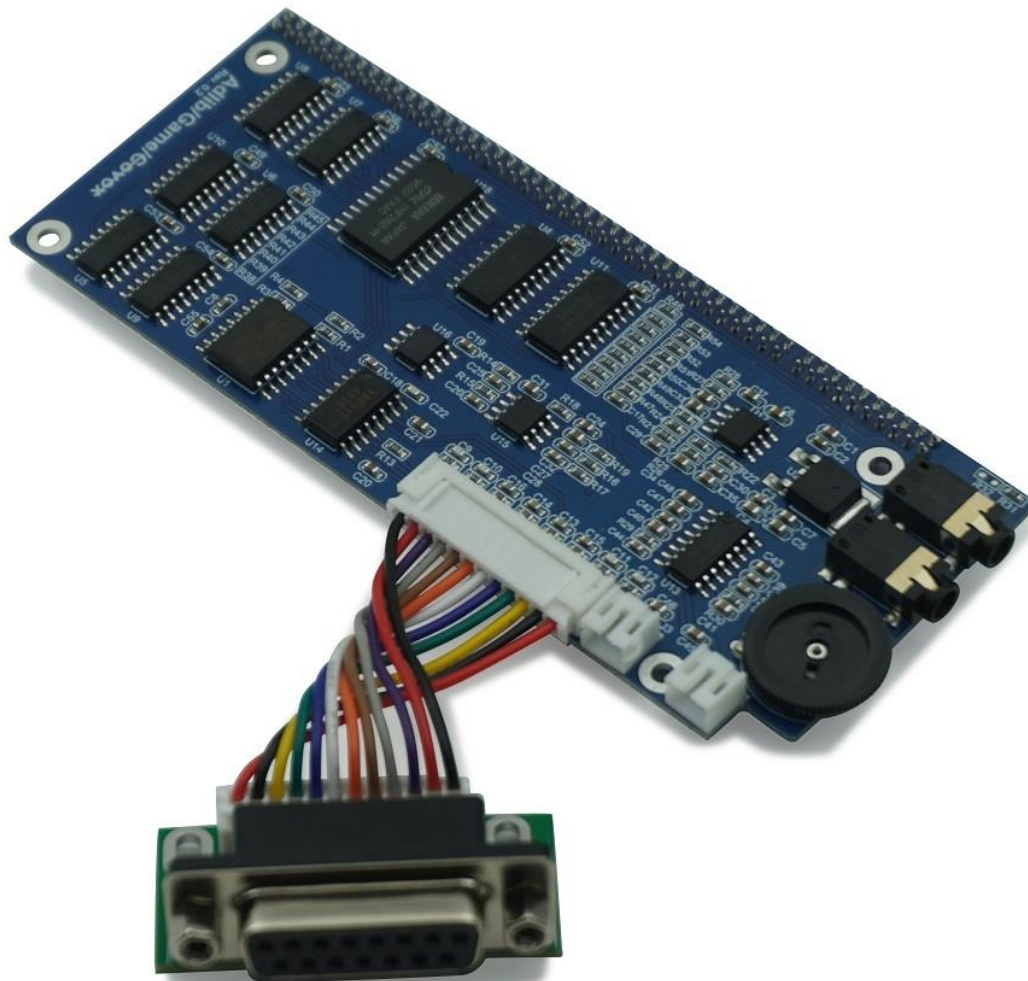




BK-Adlib0.2

Document Revision 0.1

The BK-Audio-Adlib0.2 is a sound card designed for the retro laptop computers. It consists of three parts: IBM Compatible Game Control adapter, Adlib OPL3 compatible sound card, and Covox sound card.

1. System bus

The system bus consists of two sets of pin headers with a 2.0 mm pitch. The motherboard usually provides as complete a set of ISA bus signals as possible, but the AdLib uses only a small portion of them. When the sound card is replaced with another model, the other signals may be used.

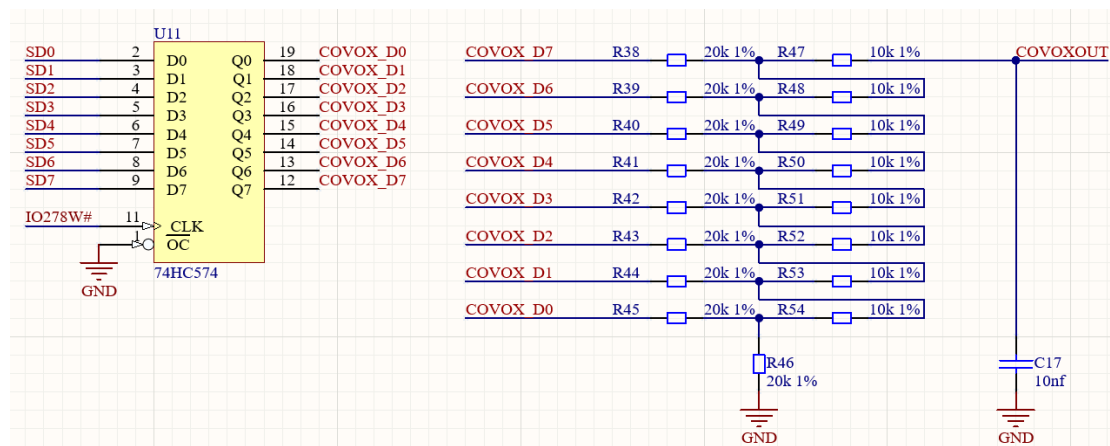
2. Adlib OPL3 compatible sound card:

FM Chip: Yamaha YMF262-M (OPL3)

IO: 388H

3. Covox:

The Covox sound card essentially consists of a parallel port data register at address 0x278 and a resistor ladder network. Because the parallel port lacks input registers, the operating system cannot detect its presence; consequently, software that requires verifying the existence of a parallel port before outputting audio typically cannot use it. However, the clever trick is that if the motherboard has a fully functional standard parallel port and its address is set to 0x278, then both an onboard Covox circuit and a Covox device plugged into the standard parallel port will function identically.



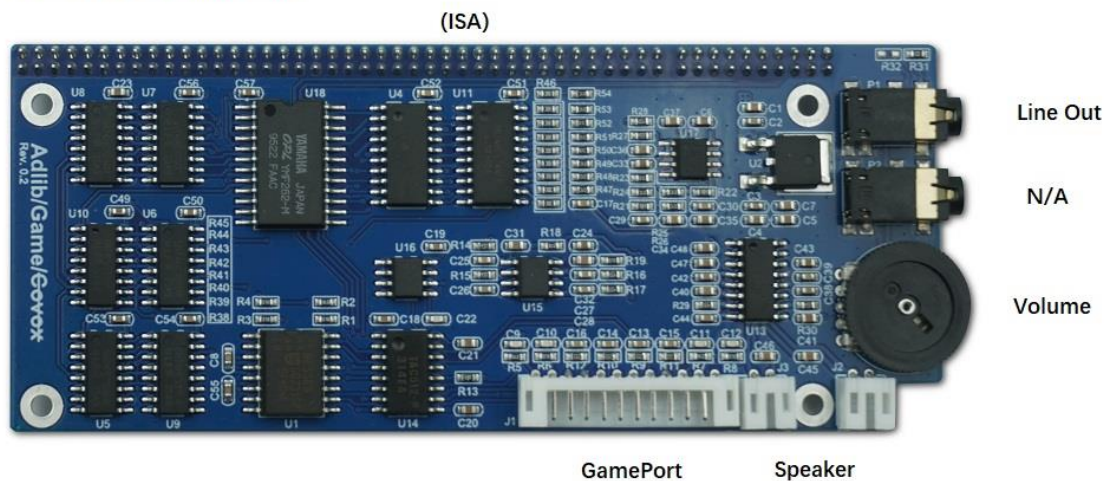
4. IBM-PC Compatible Game Control adapter

The IBM-PC compatible Game Control Adapter operates on exactly the same principle as the original IBM-PC Game Control Adapter. It has no direct relationship with the sound card. However, in later integrated sound card designs, the game port and sound card functions are often combined into a single chip. This makes it much easier for users to upgrade or replace the sound card without having to deal with separate game port hardware.

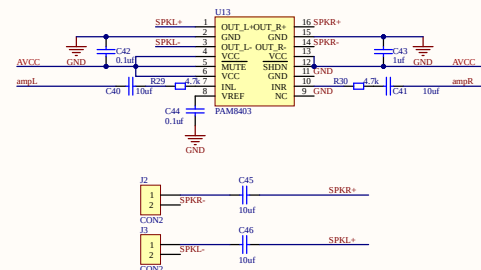
5. Audio Power Amplifier

The audio signals from Adlib and Covox are each processed by their respective preamplifier stages, then mixed together into a single combined signal. This signal passes through a volume potentiometer and a 3.5mm audio jack before being sent to the audio power amplifier chip, which amplifies it and drives the speaker. When a 3.5mm plug is inserted into the jack, the signal path to the power amplifier is automatically disconnected, muting the built-in speaker.

BK - Adlib/GamePort/Covox



6. Circuit schematic diagram:



Adlib/Game/Covox
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