

APPLEDORE

v1.1a

Appledore is a device that allows you to use a keyboard from a Commodore 64 or a Commodore 16 with your Apple-1, Apple II/II+ and any other computer with an ASCII/TTL keyboard interface. When used with Apple-1/II/II+ the adapter is powered directly from the computer.

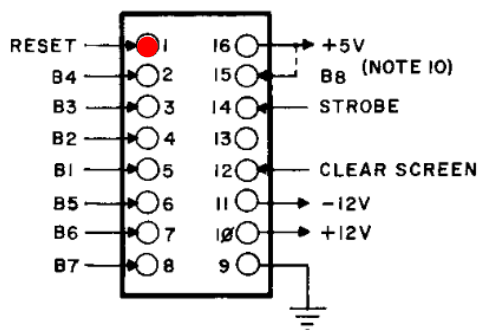
You can use any terminal connected to the microcontroller's USB port to send commands/programs to the Apple-1 computer as if you were typing on the actual keyboard. In this way, even small programs can be transferred.

To operate in this way, the terminal will need to be set up for 9600 baud, 8 data bits, 1 stop bit, no parity.

After assembling/constructing the circuit, program the Arduino Nano microcontroller with the available source code suitable for the keyboard you are using.

WARNINGS:

- NEVER leave the USB cable connected with the Apple-1/II/II+ computer switched off.
- Take extreme care to the construction and orientation of the flat cable connectors. Incorrect construction or incorrect insertion will result in **damage to the computer** and the adapter. The pin layout of the adapter matches exactly that on the computer:



The red dot marks pin number 1. On the computer's motherboard and on the adapter the pin 1 is marked with a white dot.

Once the PCB and flat cable have been assembled, you should check that no mistakes have been made in the construction by following these steps:

- With the computer switched off: connect the flat cable to the "KEYBOARD" socket,
- Remove the microcontroller and 74HCT374 if present,
- Connect the other end of the flat cable to the adapter,
- Switch on the computer,
- Check for the presence of +5V between pin 20 (VCC) and pin 10 (GND) of the 74HCT374.

If this voltage is present, turn off the computer and proceed with assembly, otherwise check the wiring and soldering.

The device is sensitive to static electricity, just like your Apple computer, and may be damaged by it. Before any operation on your devices, you must discharge the static electricity accumulated by your body and prevent it from building up again.

We do not accept any responsibility for damage, even serious or fatal, caused to people / things / intellectual property during the installation or use of this device.

With Apple-1, the Commodore 64/16 keyboard will behave exactly like any other dedicated keyboard. Some keys have a special function, as described below:

APPLE-1 FUNCTION/KEY	C64 KEYBOARD	C16 KEYBOARD
ESCAPE	←	CTRL
CLRSCR	CLR/HOME	CLR/HOME
RESET	RESTORE	NOT AVAILABLE
_ (underscore)	INST/DEL	INST/DEL

Underscore key is also used as DELETE KEY in Apple-1 and mapped with SHIFT –

In addition:

- RESET function is not available with C16 keyboard,
- RESET and/or CLRSCR pushbuttons can be placed on PCB, external momentary switches can also be used,
- Only capital letters will be available,
- The bit8 (MSB) of the output connector to the computer will always be 1, as per Apple-1 specifications. Because of this, if using this adapter with other computers with ASCII/TTL keyboards, it may be necessary to eliminate this manipulation by modifying the source code of the microcontroller.

- A 'SERIAL' connector is available for computers with a TTL serial interface (e.g. RC2014). If such a connector is used, it may be necessary to adapt the baud rate within the microcontroller script, changing the following parameter before loading it:

```
Serial.begin(9600);
```

The function of each pin is indicated by the marking. The pin with no indication is not connected to anything and is available.

We hope you enjoy using *Appledore!*

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