Peripherals for the Vampire 1200 V2

IDE

- Also known as PATA.
- This is a 44-pin IDE Interface.
    - 44-pin IDE devices, such as 2.5-inch IDE hard disks, can be connected directly using a cable.
    - 50-pin (JAE) IDE devices, such as laptop ATAPI CD/DVD drives, can be connected using an appropriate cable adapter.
    - CompactFlash (CF) cards can be connected using a CF-to-IDE adapter. Please see [Vampire-compatible CF adapters and cards](#).
    - SATA devices can be connected using a SATA-to-IDE adapter. There are adapters for various SATA connector types.
        - For devices with a standard SATA connector, [this adapter](#) and [this adapter](#) are known to work well.
        - For devices with an M.2 SATA connector, [this adapter](#) is known to work well.
    - SD cards can be connected using an SD-to-IDE adapter.
        - For a MicroSD card, [this adapter](#) is known to work well.
        - For an SD card, [this adapter](#) and [this adapter](#) are known to work well.
- The board supplies a voltage of 5V through this interface.
    - The supplied voltage is **not** sufficient for devices that require more than 5V. Those would typically be 3.5-inch hard disks and desktop CD/DVD drives (either SATA or 40-pin IDE), which require 12V. If you need to use such a device with the Vampire, then, not only do you need to find an appropriate adapter, but you also need to feed extra power into the device from an outside power source. In such a situation, setting up the necessary connections can be dangerous if done incorrectly, so we do **not** recommend attempting it. If you really must, then we recommend the help of a professional.
    - Even though most laptop CD/DVD drives require only 5V and don't need an outside power source to supply any extra voltage, they still consume a lot of power. It's common to see these drives draw 4A of current. If you want to connect such a drive to the Vampire, then, in order to avoid a power deficiency, you would want to make sure that your computer's power adapter is able to output more than 4A. However, there is still a risk of electrical problems, because Vampire boards are not designed to handle such high levels of current (like 4A) going through them. Therefore, we do **not** recommend connecting CD/DVD drives to the Vampire. If you really must, then please find a CD/DVD drive with the lowest possible power consumption, and do not connect any other peripherals that could consume a lot of power. Or you might choose to feed power into the drive from an outside power source, but we recommend the help of a professional in this case.
- This interface supports "Fast IDE", with PIO modes from 0 (slowest) to 6 (fastest).
    - Most storage devices are **certified** to support up to PIO mode 4, but many CF cards are **certified** to support up to PIO modes 5 and 6. Therefore, fast CF cards enable the maximum possible speed on this interface.
        - If you can't use a CF card, you might still be able to reach PIO modes 5 and 6 using another type of fast storage device, in case it **unofficially** supports those modes as a side effect of its high DMA speed.
    - If you attach multiple devices to a single IDE cable, the slowest device will dictate the maximum speed on this interface. For example, if you have a CF card that supports PIO

mode 6, its speed would be hampered by a hard disk which only supports PIO mode 4.
    ◦ To enable "Fast IDE", please see VControl IDESPEED.
- When connecting or disconnecting a device on this interface, make sure that the Amiga / Vampire is powered off. Also, disconnect all devices that have their own power connection, such as Digital Video, Ethernet and USB-Blaster cables, to prevent power backfeed into the Vampire.
- Be very careful when connecting a device to this interface. If you shift your connector to either side of this interface (meaning that you don't cover all pins), you can cause a short circuit and destroy the Vampire.

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Ethernet Module Connector

You can connect the following Ethernet modules:

- ENC28J60

Pinout

Connector Pin	SPI Function	Remarks
1	GND	
2	+3.3V	
3	Unassigned	
4	nCS1 (SDNet)	
5	CLK	
6	MOSI	
7	MISO	
8	Unassigned	
9	IRQ	
10	Unassigned	

Expansion Socket

Pinout

Connector Pin	SPI Function	Remarks
1	GND	
2	+3.3V	
3	Unassigned	
4	nCS1 (SDNet)	
5	CLK	
6	MOSI	
7	MISO	
8	Unassigned	
9	IRQ	
10	Unassigned	

- Digital Video Out (Core version < GOLD3)
- Digital Video/Audio Out (Core version >= GOLD3)

Digital Video Out

- Compatible with most modern monitors and TVs.
- Only RTG screen modes are output from this interface. Screen modes that use the classic Amiga chipset are still output from the legacy video outputs of the Amiga.

Resolution and refresh rate

- You can create RTG screen modes from 320×200@200Hz up to 1920×1080@28Hz.
  - As the resolution increases, the maximum possible refresh rate decreases.
  - The Vampire is able to achieve a refresh rate of 60Hz for all resolutions up to and including 1280×720. Resolutions higher than that will reduce the maximum refresh rate to below 50Hz. For example:
    - 1600×900: ≤40Hz
    - 1920×1080: ≤28Hz
- The Vampire outputs screen modes without any upscaling. It applies pixel doubling to low-resolution modes, as appropriate, to increase them to a resolution allowed by Digital Video. This also ensures the correct aspect ratio.
- For the best experience, you should use a monitor or TV that **natively** supports all the resolutions and refresh rates that you will use. Monitors or TVs that support "variable refresh rate" or "adaptive sync" usually work best.
- If you are stuck with a monitor or TV that does not (adequately) support the resolutions and refresh rates that you will use, you can connect an "**HD video converter**" to adjust the signal from the Vampire as desired. For example, you can easily find converters that upscale the video signal to exactly 1920×1080@60Hz. (Some purchase options: 1, 2, 3, 4)

Audio

- Audio is still output from the legacy audio outputs of the Amiga. If you want this audio to be fed into the Digital Video In of your monitor or TV, you can connect an "**audio embedder/inserter**". (Some purchase options: 1, 2, 3, 4)

DVI

- You can connect a DVI monitor to this interface, using an adapter that converts Digital Video to DVI.

Not yet available.
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MicroSD Card

- Most MicroSD and MicroSDHC cards should work fine.
  - Supports speeds up to Speed Class 10.

- If you want to use your MicroSD card on a different device which only has a standard-size SD slot, you can use a simple MicroSD-to-SD adapter. (Some purchase options: 1, 2)
- If you want to use a standard-size SD card in the MicroSD slot of the Vampire, you can use an SD-to-MicroSD adapter. Some of these adapters even come with an extension cable. (Some purchase options: 1, 2, 3, 4)
- You can use the Arananet SDNET Adapter in this slot to connect an Ethernet module to the Vampire. (This adapter also contains an SD-to-MicroSD adapter, so you will still retain the functionality of using SD cards in this slot, during times when the Ethernet module is not used.)

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