

Exploring busses essay sample

[Technology](#), [Computer](#)



Diagram 1.

In the following Mika and Myself reviewed the new Asus Crosshair V Formula ZAM3. Due to the relative newness of this motherboard there are several IO connections that are not illustrated in our Diagrams. However as you can see we identified most of all the major IO ports in Diagram one and two. So let's start with what IO ports are not shown in the above Diagram.

Diagram 2.

Here is a representation of an RS232 Port. Simply put this is a serial data transmission / communications port. It is NOT a VGA (video) output port. It is important to remember that older modles like the RS2323 are a twenty five pin IO where as the newer ones will be similar to the VGA nine pin. Here is a FireWire IO Port. This is a serial bus port that can reach speeds of four hundred Mbps while not loosing quality or signature of transfer. This port would mostly be used for a verity of multimedia devices or devices that are less permanent.

Northbridge is known as the memory controller hub which typically handles the communications between the CPU, RAM, AGP or PCIe and Southbridge. Southbridge is responsible for the hard drive controller, IO controller, and any other integrated hardware. This could be things like sound, USB, PCI, IDE, BIOS, and Ethernet. Heat sinks are a dead give-away for the two Bridges. The Northbridge will typically be closer to the CPU and have a larger heat sink.

Optical S/PDIF (Sony/Philips Digital Interconnect Format) – This IO port is used for digital audio interconnection.

PS/2 - This is the mouse and/or keyboard port. It's important to know that it was developed by IBM and contains a six pin connection configuration. In addition, it is still used with most IBM compatible computers even though USB has began to replace them.

USB 3.0 and USB 2.0 - The biggest difference between the two USB port is the speed the 3.0 has a top speed of 4.8 Gbps where the 2.0 has a top speed of 480 Mbps. The basic functionality of the ports are the same in being that they are a data transfer IO port.

eSATA / SATA - Is a superfast IO port that delivers a transfer rate of 3Gbps. Used often times for external drives and other large data transfers. RJ-45 - This is your Ethernet / Network connection. I have seen new LAN IO ports offering speeds up to 1Gbps

Diagram 3.

We'll cover some basic auxiliary power connection in the above diagram as its represented by the four pin ATX power. However there are a couple of different configurations as to the pin layout but that basic principles are the same in providing additional power IO ports for different components.

PCIe and PCI - These slot are expansion slots for adding additional hardware components such as a GPU, Network cards, and many more. In this case the motherboard does not come with an integrated video port or chip, so it would require and additional piece of equipment to view the video.

CPU - Also known as the Central Processing Unit. This is where most of the computing happens in today's personal computers. There is a key note to understanding the merger between CPU's and motherboards in that most motherboards require a set parameter of CPU or type. They call this the socket type. Not every CPU can be used in every motherboard.

Memory - RAM (Random Access Memory) this memory is different than the hard drive memory. This memory allows for quicker access which speeds things up but it also requires consistent power to keep the data accessible. Memory is measured by size, and as with most size values, the bigger the size the more volatile memory you will be allowed to store and access. In this case this motherboard has a maximum capacity of 32GB of Un-buffered memory.