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## “FAQ” – Best performance for USB 3 camera running 4K / UHD

### Introduction:

To reach full USB 3 (USB 3.1, Gen1) camera performance the PC hardware has to fulfill the latest recommended hardware requirements! Please refer to the separate GRYPHAX® Requirements document.

It is essential to use the **dual-channel architecture for memory** (or quad-channel architecture if supported from CPU and mainboard) to archive full capacity of memory bandwidth from CPU.

### Description:

Dual-channel architecture requires a dual-channel-capable motherboard and two (or more) memory modules. The memory modules are installed into matching banks, which are belongs to a different channel. The motherboard's manual will provide an explanation of how to install memory for that particular unit.

Modules rated at different speeds can be run in dual-channel mode, although the motherboard will then run all memory modules at the speed of the slowest module.

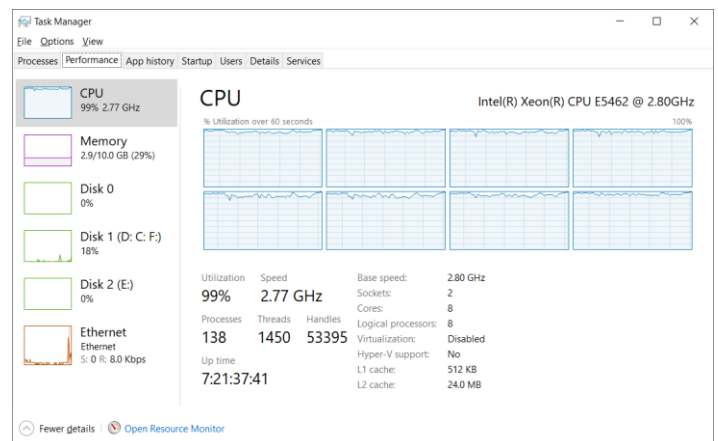
We generally advised to use **identical pairs of memory modules**, most memory manufacturers sell "kits" of matched-pair DIMMs. Several motherboard manufacturers only support configurations where a "matched pair" of modules are used.

Note: In case of single-channel memory use, the camera performance will be limited!

### Symptoms:

The following symptoms are an indicator that the bandwidth of memory is insufficient or only one memory module (single-channel) is installed.

High **CPU consumption** and low live **frame rate** are the results. Also high **latency** can be observed.

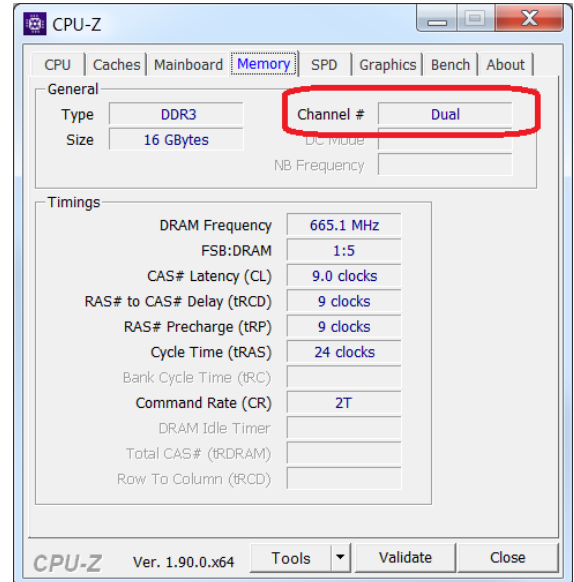




### Check Status:

To **check** whether the PC is equipped with single- or dual-channel memory, you can use the free tool: "CPU-Z". The tool is free download able from the web link below:

<https://www.cpuid.com/softwares/cpu-z.html>



### Additional helpful hints to reach full performance under WINDOWS OS (10 / 11):

- 1) Update USB 3 **camera firmware** to latest version (V1.0xx) is always recommended!  
For details please see separate user guide: "USB3CameraServiceTool".
- 2) Update to **latest Windows OS** to ensure latest USB 3 host controller and chipset drivers are installed.
- 3) Optionally, **deactivate** the option: "USB 3 Link Power Management" at host PC under advanced power settings from Windows OS at Power Options. See separate document Best "Performance".
- 4) Alternatively, install **recommended PCIe USB 3 interface card** with "Renesas" chipset and install original manufacturer card driver! Use additionally power support for the extension card!
- 5) Alternatively, install **additional USB 3 hub** with external power supply.

We looking forward to hearing from you and remain sincerely,

Your JENOPTIK GRYPHAX® Team