Your PLAYDECK PC Build / Hardware

Please use this basic guidelines for your PLAYDECK System. While PLAYDECK can basically play any Codec on any Windows machine, we want you to have a good experience, which requires some rules of thumb.

In this article:

Installation and Hardware

PLAYDECK can be installed on any Windows 64-bit machine. This includes Windows Server Versions or Custom Cloud Builds.

PLAYDECK needs fast modern Hardware, if pushed to the Limit. It has to transcode any given Video Format and Framerate in Real-time into your selected Output Format. Ideally without any Frame Drops.

As with all Tasks, it all depends on your use case: Are you using the LITE Edition to operate one Full HD Channel in a Live Event for some Hours? Or are you using STUDIO to broadcast multiple UHD Channel to several receiver e.g. Streams, NDI, and all in a 24/7 manner?

One thing is certain: You need a powerful NVIDIA or INTEL GPU. AMD is not supported for decoding, but it will run nevertheless. Your NVIDIA GPU should have ideally at least a Score of 9.000 on the Passmark Scale. This would be achieved with a NVIDIA RTX 4060.

There is also a Passmark Scale for CPU. We recommend at least a Score of 25.000 for single channel, 35.000 for dual channel and 50.000 for 4-8 channel.

All other PC components should not be much older than 2 years, just to meet modern driver standards, as we update PLAYDECK at least 4 times a year with the latest driver. You will want to utilize and profit from that, as all PLAYDECK updates are free of charge, as long as you have a valid license.

This is a **LIVE Spec**, we use for our own PLAYDECK Production Systems:

- Power: BeQuiet Straight Power 11 750W
- Mainboard: Gigabyte Z790 AORUS Elite AX
- CPU: Intel Core i7 13700F (PassMark **38.000**)
- CPU Cooling: Noctua NH-U9S Tower Cooler

- Memory: 32GB Corsair Vengeance black DDR5-5200
- SSD: 1TB Samsung 970 EVO Plus M.2
- GPU: 12GB Gigabyte Geforce RTX 4070 Windforce OC (PassMark **15.000**)
- SDI: Blackmagic Design DeckLink SDI 4K

This is a **DEV Spec**, we use for development:

- Power: BeQuiet Straight Power 12 850W
- Mainboard: MSI MAG Z790 TOMAHAWK
- CPU: Intel Core i7-14700K (PassMark **52.000**)
- CPU Cooling: Noctua NH-D15 chromax.black
- Memory: 32GB Corsair DIMM DDR5-5600
- SSD: 2TB WD Black SN850X NVMe SSD
- GPU: 10GB Asus GeForce RTX 3080 V2 OC LHR (PassMark **14.000**)
- SDI: Blackmagic Design DeckLink Duo 2

This is also **TEST Spec**, we use exlusively for load and stability Testing for Intel GPU:

- System: ASUS NUC 14 Pro AI Slim Mini PC
- CPU: Intel Core Ultra 5 226V 4,5 GHz (PassMark **18.000**)
- Memory: 16GB LPDDR5X 8533 MHz
- SSD: 512GB
- GPU: Intel Arc Graphics 130V (PassMark **2.500**)

Encoding and Decoding

Please also plan your GPU upfront according to your encoding and decoding needs. Here is a page for NVidia NVenc and 422 Support and here for Intel Quick Sync and 422 Support. As a rule of thumb: Lower NVidia Cards can’t encode DVB 422 and can’t decode AV1. Almost any Intel Onboard GPU (UHD, Iris, ARC) can encode DVB 422, but only the ARC can also decode AV1. Here is a little Helper:

NVidia RTX 3080

- Decode HEVC – STRONG
- Decode H264/H265 – STRONG
- Decode AV1 – (No)
- Encode DVB 4:2:2 – (No)

Intel UHD

- Decode HEVC – MINIMAL
- Decode H264/H265 – MINIMAL
- Decode AV1 – (No)
- Encode DVB 4:2:2 – OK

Intel ARC

- Decode HEVC – GOOD
- Decode H264/H265 – GOOD
- Decode AV1 – GOOD
- Encode DVB 4:2:2 – GOOD

Output Cards

If you use a dedicated Output Card (e.g. BM Decklink), you will not only offload resources to the Card and reduce overall System GPU/CPU load, but you will also benefit from:

- More “true” Colors
- Nearly Zero Frame Drops due to Frame Rate Control
- Overall higher Picture Quality
- Much more stable than HDMI over Desktop (no Windows-interference)

We support Output Cards from these Manufacturers (see complete List):

- Blackmagic Design
- AJA
- Deltacast
- Bluefish444
- DekTect
- Magewell
- Osprey
- Stream Labs
- Yuan
- ASIO Devices (eg DANTE)

CPU Usage = Stronger CPU needed

If you fall under one of the following categories, please plan a stronger CPU

for your System:

– You are mostly using CPU Codecs, that can’t be GPU-decoded with PLAYDECK: ProRes, HAP, DNxHD
– You use multiple NDI Outputs, as they are encoded on CPU only
– You are heavily using Overlays in PLAYDECK, as they are also CPU-only
– You are using multiple screen captures or web camera devices

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Headless Playout NUC

If Form Factor is important or your Playout System should run unsupervised, we can recommend this NUC: ASUS NUC 14 Pro.

It has a very strong INTEL ARC GPU with 8 GB. I can decode anything like a NVidia (with QuickSnyc) plsu AV1. Very balanced CPU/GPU power. Can operate 2 channel playout including HDMI output and Streams.

Notebooks

If you are aiming for mobile productions, we go with the XMG ULTRA 17 or the Razor Blade Notebook and extend it with a Blackmagic Ultra Studio card via the thunderbolt interface. If in doubt, which manufacturer to go for, decide for a Gamer Notebook. Those are designed to run at maximum performance. Avoid buying Office-type Notebooks like Dell, which are designed for power saving and can seriously limit your playout performance.