“That Itch Again” (HotKeys Spring and Summer 2024)

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I had that itch again... I already had a computer case, a decent power supply, a modest CPU fan and some spare time now that the Ukrainian rush had quietened down. I also had that itch to put a computer together, especially after Jonathan Burt's adventures with PC Partpicker.

Years ago Steve Sutters had recommended using an AMD processor for my first go-faster PC on account of its speed and relatively low thermal design point. I think for thermal efficiency AMD is still ahead, but I have never worked with Intel chips - preferred of course by Jonathan Burt. So why not try Intel this time?

At the back of my mind were the dire warnings of transferring a hard disk installed system from one hardware configuration to another. I have long recognised that a Linux Mint installation created on one computer almost always works quite happily in another different system. Clearly the installed system contains enough drivers etc. to adapt quickly to its new environment. I do this all the time with a variety of laptops for Ukrainians, keeping a stock of "hard disks I prepared earlier" for the next incoming laptop. The only caveat seems to be whether the recipient computer is configured for the more modern GPT filing system, so I keep a few HDD's configured for GPT and a few for MBR format. Whether AMD or Intel doesn't seem to matter, otherwise.

My new motherboard would have to support legacy booting, of course, meaning it needs to be set in CSM, or compatibility, mode. That apparently means I can't cut corners on using integrated graphics. Probably needs to have "Secure Boot" disabled as well if I want to play across formats including Linux.

I had a plain micro-ATX case (no flashing lights) in traditional format with the power supply at the top - the correct position to take advantage of its air-expelling fan with fortunately a generous 620W power supply. And of course a twin front-loading HDD caddy. The motherboard I chose was an Asus B760M WiFi (see page 4) which has the Intel B760 chipset and takes an LGA 1700 CPU chip (with 1700 pins). This has three full length PCI slots and unbelievably, a parallel printer header (LPT). How I love legacy stuff! And then a modest i5 processor (non-graphic to allow for CSM mode – i.e. legacy mode) but newer DDR5 memory which the motherboard requires, and a basic 4Gb Asus Radeon RX6400 graphics card. (This is only for play, not serious gaming.)

It also takes M.2 NVMe memory - plugged and screwed to the board, but my ambition is to find out if there is a front-loading M.2 adapter. I do like to play.

And to find out if Windows can be machine -tolerant to swapping HDD's between AMD and Intel boards, as Linux appears to be. And this will be my first Intel machine. I have used PartPicker for compatibility checks but ordered everything from Novatech - all under one roof. Watch the next edition of HotKey for the results of this adventure.

Moving on…

Well, moderately-fast experimental PC now assembled. Apart from wanting to get constructive, I also wanted to see how cross-compatible software builds could be across hardware platforms. It was instructive to find that a basic Linux Mint installation designed to suit Ukrainian refugees, set up on one PC, would work in almost any other refurbished laptop, regardless of hardware configuration.

So my hobby-build was Intel/Radeon rather than my office PC which is AMD/ Nvidia. But it took very little fiddling with graphic drivers to find perfect compatibility (using a cloned backup drive). All well, so far. You're not supposed to be able to do this but it seems to work - probably a tribute to versatile operating system design and the convergence of graphic cards on to just two main families. (Unfortunately an older version of Linux in MBR mode required exchanging the Radeon graphics card for an Nvidia GT710 2Gb).

I used an Asus Prime B760M-A Wi-Fi micro-ATX motherboard with Crucial 8Gb x 2 DDR5 RAM and Asus (Radeon AMD) RX 6400 Phoenix graphics with 4Gb RAM. (Micro-ATX format is all the home user needs these days).

And a CiT Classic Micro Mid-Tower Case - Black with added Corsair 620W PSU. Note that a slim mATX case will not take a full height tower cooler. And an essential part of messing around is a dual front-loading hard disc caddy – see image.

Because many recycled laptops are elderly and support the old MBR file system my new system had to be legacy-friendly. In modern BIOS terms this means offering "CSM" mode and this

mode is not supported with CPU with integrated graphics. The CPU was therefore an Intel Core i5 13400F where the "F" means it does not have integrated graphics. "13" means 13th generation. An additional “K” suffix would mean more over-clocking tweaks were possible.

This is a pale shadow of Jonathan Burt's system which had an i9 FK processor with a much more powerful graphics card and much more RAM.

Things I like about the new PC: The case, which is modest and optimally functional; the upgraded modular 620W Corsair power supply which is just powerful enough and conveniently part modular (the case is now supplied with 500W power). The front-loading twin SSD caddy is vital - I just wish they did one for NVMe hard drives in M.2 format. I very much like the motherboard and its associated BIOS control panel which even I can partly understand. Obviously the CSM/Legacy capability. And this board also has legacy parallel and serial headers to remind me of the good old days of parallel printers and serial mice.

I like that I used threaded metal stand-off spacer nuts to hold the motherboard rather than those awful plastic clips that you can't undo - better for removing the board if needed.

I like the graphics card, although it occupies two slots - well any card worth its salt takes up more room, but with onboard Wi-Fi another slot is freed up; same for the sound output. I was struggling to think of something to put in the remaining two slots to keep the legacy cables at bay.

And I like that the supplied Intel cooler fan was very quiet – if a little tricky to fit.

Things I don't like – very little. So far I don't totally understand the optional boot screen (F8) when the same boot drive appears twice. Hm… might be a product of the CSM setting. Probably lists the same drive with GPT or MBR format. Still reading the product manual – something Asus is very good with. I think I would stick with Asus another time.

It's three years since I built my current office AMD PC and things have certainly moved on. Even over the period we were refurbishing laptops for Ukrainians the MBR file system seems to have died out and yielded to GPT. To a dabbler like yours truly, this has been a confusing experience, but we have to go on learning.

Roger Skidmore *2nd October 2024*
rogerskid@zen.co.uk

Twin front loading HDD caddy: I am uncomfortable with a hard disk physically screwed into the case (apart from, maybe security). I like to clone my hard disk and if changing operating systems, keep everything simple by physically exchanging the HDD. To do this I always use a front-loading twin HDD caddy. It's much more fun to play with anyway.

(Search on Amazon)

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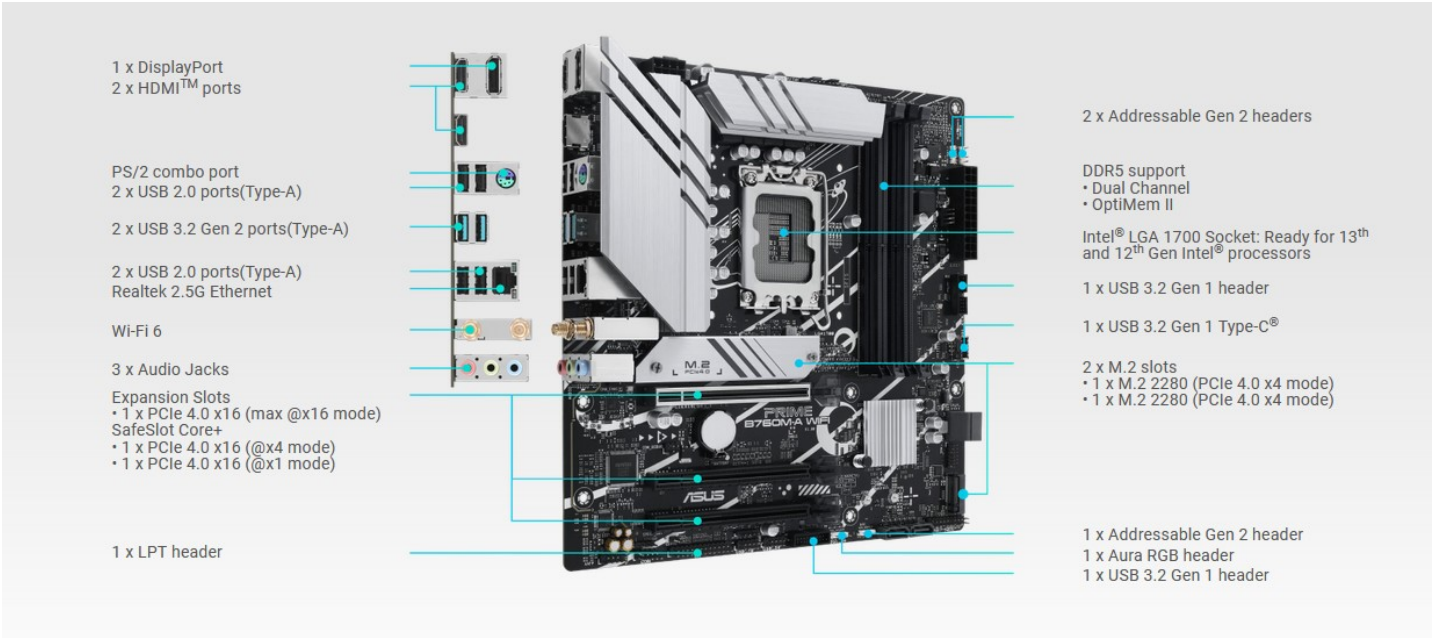

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