Buyer's guide: XMG EVO vs. SCHENKER VIA 14 vs. SCHENKER KEY 14

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Introduction

Mobility and high performance no longer have to be a contradiction in terms. With the XMG EVO 14, XMG EVO 15, SCHENKER VIA 14 Pro and SCHENKER KEY 14 model series, we offer a range of ultra-portable devices in this area. This article provides an overview of the various strengths and areas of application of these models.

Basic similarities and differences

The XMG EVO, SCHENKER VIA and SCHENKER KEY series offer numerous similarities and some fundamental differences.

Similarities:

- High-quality chassis.
- High-resolution displays.
- Solid input devices.
- Extensive range of connections:
    - 2x USB-C and 2x USB-A
    - Full-size HDMI
    - DisplayPort via USB-C
- Can be charged via USB-C.
- Options for upgrading SSDs.
- Biometric login via Windows Hello.
- Powerful cooling systems, quiet at low load.
- Potentially long battery life thanks to economical CPU platforms.

Differences:

- The KEY 14 contains a dedicated NVIDIA graphics card and is therefore also VR-compatible. The other three models only use the integrated graphics unit in the CPU - but this is particularly efficient.
- The RAM in the VIA 14 Pro is faster and more efficient, but cannot be upgraded. KEY 14 and XMG EVO support up to 96 GB.
- The VIA 14 Pro offers neither USB4, nor Thunderbolt, nor an Ethernet cable connection, but it is the lightest of all four devices when the weight of the charger is taken into account.
- The KEY 14 only has a single SSD slot. XMG EVO and VIA 14 Pro have two slots, but in the VIA 14 Pro these are only single-sided, in the XMG EVO they are double-sided. This affects the maximum SSD upgrade capacity.

- The XMG EVO models have a slightly higher CPU performance than the other two series, although this should only have an effect on multi-core rendering, e.g. Blender or AV1/X264 video encoding.
- The iGPU in the Intel models already supports AV1 encoding in hardware and 8K monitors via DisplayPort 2.1 with DP80.

Other differences include display brightness, opening angle, card reader, the presence of a numeric keypad (only on the EVO 15) and, of course, visual factors such as the colour of the chassis.

Overview

This table provides a complete overview:

	SCHENKER KEY 14	SCHENKER VIA 14 Pro	XMG EVO 14	XMG EVO 15
	with Intel and NVIDIA	with AMD	with Intel or AMD	
CPU choice	Intel Core Ultra 7 155H	AMD Ryzen 7 8845HS	AMD Ryzen 7 8845HS Intel Core Ultra 7 155H	
CPU power limits	54 watts peak 50 watts sustained	54 watts peak 54 watts sustained	with AMD: 65/60 watts peak/sustained with Intel: 80/70 watts peak/sustained	
System memory	Up to 96 GB DDR5 (SO-DIMM, upgradeable)	32 GB LPDDR5X (non-upgradeable)	Up to 96 GB DDR5 (SO-DIMM upgradeable)	
SSD storage	1× M.2 slot (double-sided, up to 8 TB)	2× M.2 slot (single-sided, up to 4 TB per slot)	2× M.2 slot (double-sided, up to 8 TB per slot)	
Integrated graphics (iGPU)	Intel Arc Graphics	AMD Radeon 780M	AMD Radeon 780M Intel Arc Graphics	
Dedicated graphics (dGPU)	NVIDIA GeForce RTX 4060 NVIDIA GeForce RTX 4070	(iGPU-only)		
DisplayPort (DP via USB-C)	1× DisplayPort 2.1 (80 Gbps via iGPU) 1× DisplayPort 1.4 (32.4 Gbps via dGPU)	2× DisplayPort 1.4 (32.4 Gbps via iGPU)	with AMD: 2× DisplayPort 1.4 (2× 32.4 Gbps via iGPU) with Intel: 1× DisplayPort 1.4 + 1× DisplayPort 2.1 (32.4 + 80 Gbps via iGPU)	
HDMI	HDMI 2.1 (48 Gbps via dGPU)	HDMI 2.0 (18 Gbps, via iGPU)		
USB4 / Thunderbolt 4	☑	✗	☑	☑
Ethernet (RJ45 / LAN)	☑	✗	☑	☑
Numpad	✗	✗	✗	☑
SD card reader	Micro SD		Full-Size SD	
Max. opening angle	130 °	180 °		
Max. screen brightness	300 nits	400 nits		500 nits
Weight	1.75 kg (2.3 kg with original charger)	1.39 kg (1.64 kg with original charger)	1.4 kg (1.9 kg with original charger)	1.65 kg (2.2 kg with original charger)

Complete spec sheets and configuration options can be found on the respective product pages:

- GIFT KEY 14
- SCHENKER VIA 14 Pro
- XMG EVO 14
- XMG EVO 15

Performance comparison: iGPU vs. dGPU

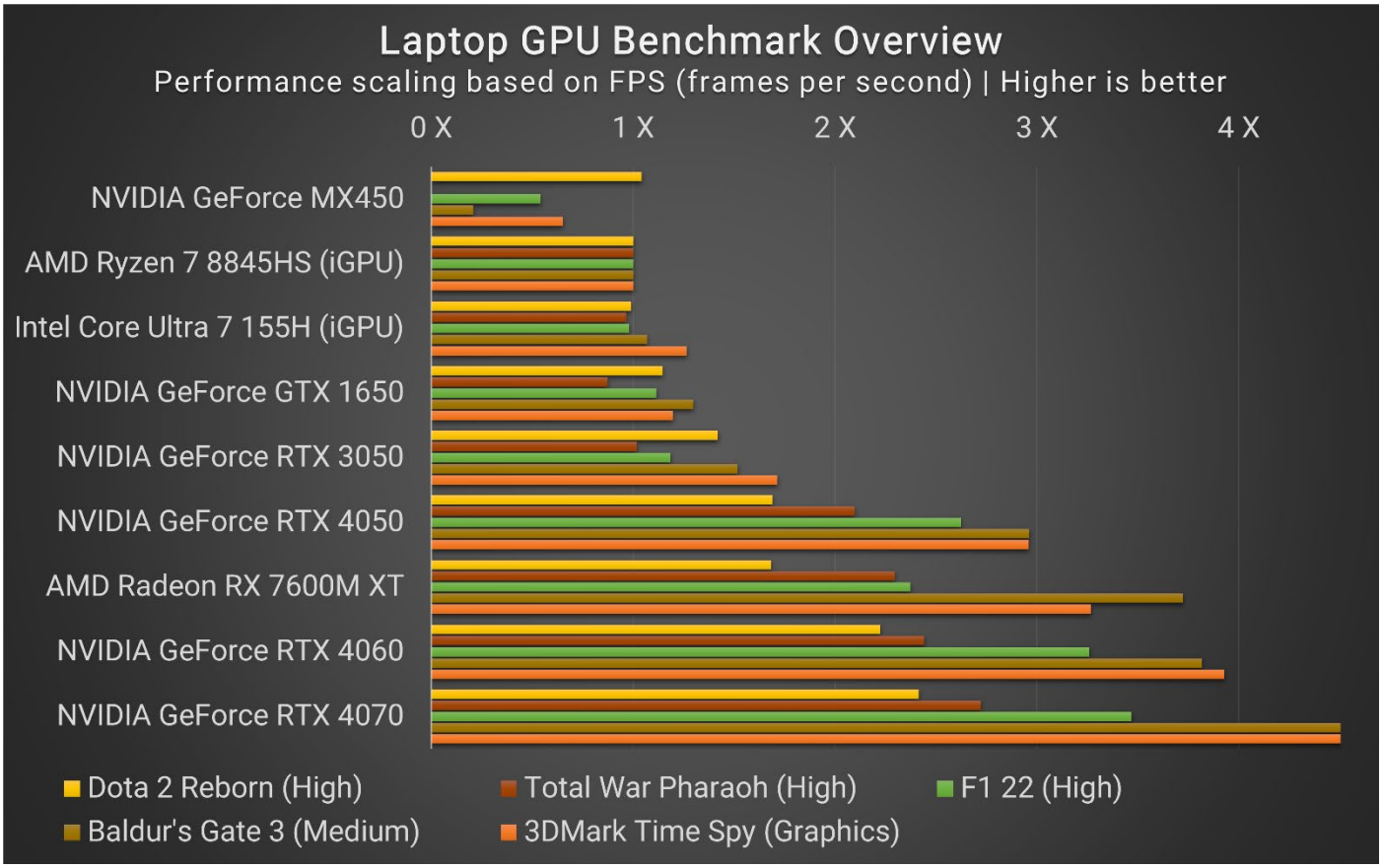
A fundamental difference between the KEY 14 and the other two series is that it is equipped with a dedicated graphics card (dGPU). This makes the SCHENKER KEY 14 a particularly compact powerhouse, including compatibility with VR headsets. On the other hand, not having a dedicated graphics card nowadays no longer means having to do without gaming and Content Creation potential or display connection options. The graphics units integrated into CPUs (iGPU) have made considerable progress in recent years.

Features

- Just like dGPUs, iGPUs can address up to four displays separately.
- The maximum resolution via USB-C or DisplayPort 1.4 is identical between NVIDIA dGPU and AMD iGPU, while the iGPU from Intel with DisplayPort 2.1 even outperforms the NVIDIA dGPU.
- dGPUs do have faster memory - but this is limited in capacity. iGPUs can take up to 16 GB from the CPU memory. And CPU memory has also become significantly faster since DDR5 (two channels per DIMM).
- The computing power of current iGPUs is roughly on a par with an NVIDIA GeForce GTX 1650 laptop GPU, which in turn is not far off an RTX 3050. However, a system with an iGPU consumes significantly less energy than a system with a dGPU while delivering the same performance.

Performance

Below we show a performance comparison between different iGPUs and dGPUs. In addition to the usual 3DMark benchmark, we have selected a number of older and newer games to cover as wide a range of scenarios as possible.



Notes:

- The bar chart shows the relative performance of all GPUs compared to the iGPU in the AMD Ryzen 7 8845HS, which was taken as the base value here. The axis labelling stands for multiplication factors: "2 X" means a doubling of the FPS compared to the "1 X" base value.
- The results come from the Notebookcheck database and are based on reviews of XMG and SCHENKER systems. For graphics cards for which there are no XMG/SCHENKER reviews (e.g. GeForce MX450 or

Radeon 7600M XT), the values correspond to the average of the upper quarter of the results - i.e. from systems with sufficiently high power limits.
- The specifications "High" and "Medium" refer to setting profiles at Notebookcheck in the resolution 1920x1080 - the scaling of the performance can also be largely transferred to higher resolutions.
- The selection of games covers a wide range of older and newer titles. The settings are selected in such a way that bottlenecks in the video memory are largely avoided. All underlying FPS values are "playable". The only exception here is probably "Baldur's Gate 3" on the GeForce MX450, which reaches the VRAM limit in the "Medium" profile. The GPU would have around twice as many FPS in the "Low" profile and would therefore scale similarly to "F1 22" (Medium).
- The results of "Dota 2 Reborn" and "Total War Pharaoh" on RTX 4060/4070 are most likely CPU-limited - these would scale better at higher resolutions.
- There is no reference value for "Total War Pharaoh" on the GeForce MX450 in Notebookcheck - but we would estimate that it would still be playable at 1080p/medium.

Despite these comments, the comparison provides a realistic impression of what performance you can expect with which GPU. The comparison also shows that the scaling in 3DMark Time Spy cannot be transferred 1:1 to all games.

Battery life and mobility

Systems that do without a dGPU have a number of significant systemic advantages:

- They carry less weight around with them, both thanks to the lack of dGPU and the correspondingly slimmer cooling system.
- They require less powerful AC adapters, which are correspondingly smaller and lighter.
- They offer stable and usable 3D performance in battery mode and also enable this over longer, actually practical periods of time.
- There is no loss of performance when using 100 watt AC adapters. This means that the runtimes can be extended even further by using laptop-compatible power banks, even in high-performance scenarios.
- There is no risk of losing battery life in Office or Web mode just because any software or driver error keeps the dGPU permanently awake (see FAQ article).

The latter in particular is a very important "peace of mind" factor: with a laptop that does not have a dGPU, there is simply more certainty that the battery life will not be jeopardised by any control errors. Laptops with iGPU therefore need less "micro management" - you don't have to think about whether you need to switch the MUX switch back to iGPU or configure NVIDIA Optimus when you're on the move.

The same efficiency advantage also applies to the fan control: a system that has a slimmer base when idle or under low load will also require a lower fan speed on average to cool the components and housing surfaces.

Summary

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Appendix: Upgradeability via external graphics cards

If the performance of a modern iGPU is no longer sufficient, a system can be further upgraded with an external graphics card - provided the system has a suitable connection. The use of an external graphics card (eGPU) requires a Thunderbolt or USB4 slot with at least 40 Gbps bandwidth. XMG EVO and SCHENKER KEY 14 have such a connection - SCHENKER VIA 14 Pro does not offer this connection.

eGPUs have their own power supply and an active cooling system. They usually have a large chassis to accommodate a fully-fledged, upgradeable desktop GPU - but there are now also compact and portable solutions with a permanently installed graphics chip, similar to the dGPU solutions in gaming notebooks.

eGPUs are at least twice as fast as the iGPUs in modern laptop CPUs and can be significantly faster depending on the GPU installed. Thanks to the standardisation of USB4 and Thunderbolt, eGPUs are generally compatible with all laptops that support these standards, regardless of the brand. An eGPU can be added or removed without restarting the system; the corresponding GPU driver only needs to be installed once.

The 40 Gigabit/s (via PCIe) of the previously common Thunderbolt or USB4 interfaces form a bottleneck in the connection of the eGPU. However, this is particularly noticeable when gaming in lower resolutions (1080p, 1440p) or at low to medium graphics settings. This is due to the high number of "draw calls" that have to be communicated between the CPU and eGPU at high FPS rates. However, with high resolutions (lower FPS) and professional applications such as CUDA, GPU rendering (3D modelling, architecture) or AI training, data transfer is hardly an obstacle. The use of DLSS 2.0 with frame generation also reduces the PCIe utilisation per frame, as there is no need to communicate with the CPU for the additionally calculated frames. Depending on the application scenario, top desktop GPUs such as the NVIDIA GeForce RTX 4070/4080/4090 can therefore also be worthwhile.

eGPUs can display their rendered images both on the laptop screen and on an external monitor, which is connected directly to the eGPU. The latter is the more efficient method, especially for gaming, as sending the GPU images back to the laptop places an additional load on the limited PCIe bandwidth via USB4 or Thunderbolt: the higher the resolution of the laptop monitor in the game, the higher the load on the PCIe interface. However, in professional applications that utilise the PCIe connection via eGPU to a lesser extent, the display directly on the laptop monitor is perfectly practical.

We are conducting a current survey on the topic of eGPU:

- eGPU boxes via USB4 and Thunderbolt for iGPU-laptops (2024 survey) [via Google Forms]

We would like to find out how strong the interest in eGPUs currently is among our customers and whether large (upgradeable) or small (portable) solutions are favoured. The survey can be carried out without registration and only takes a few minutes. We do not ask for any personal data. Information and questions are formulated in English. The survey contains explanatory texts and sample images of current eGPU solutions.