

Technical Specifications: Dell Precision 3581 Laptop

This model is a powerful mobile workstation designed for professional and technical applications, serving as an excellent modern equivalent to the desktop you specified.

- **(a) CPU:** Intel® Core™ i7-13700H vPro® (24 MB cache, 14 cores, 20 threads, up to 5.0 GHz Turbo)
 - *Note: This 13th Generation Intel mobile processor offers vastly superior performance compared to the 7th Gen desktop i7-7700.*
- **(b) Chipset:** Integrated into the Intel® processor (System on Chip - SoC).
- **(c) Motherboard:** Proprietary Dell motherboard engineered for the Precision 3581.
- **(d) Slots:** 2x M.2 2280 slots for SSD storage, 1x M.2 slot for the Wi-Fi/Bluetooth card.
 - *Note: Laptops utilize compact M.2 slots for high-speed components, not the large PCIe slots found in desktop towers.*
- **(e) Memory:** 16 GB, DDR5, 4800 MHz RAM. System is expandable up to 64 GB using two memory slots.
- **(f) Monitor:** 15.6-inch, FHD (1920 x 1080) 60Hz, Anti-Glare, 250 nits, integrated display.
- **(g) Graphics Card:** NVIDIA® RTX A500 with 4 GB GDDR6 dedicated memory.
 - *Note: This is a modern professional graphics card certified for engineering and creative applications, significantly outperforming the requested AMD R7 450.*
- **(h) Storage:** 1 TB, M.2 2280, Gen4 PCIe NVMe, SSD.
 - *Note: This solid-state drive is housed in an M.2 slot and is many times faster than a traditional 3.5" mechanical hard drive.*
- **(i) Keyboard:** Integrated English US backlit keyboard with numeric keypad.
- **(j) Mouse:** Integrated high-precision touchpad with multi-touch support.
- **(k) DVD Writer:** Not included in the chassis. An external USB DVD writer can be connected if required.
 - *Note: Internal optical drives have been phased out of most modern laptops to allow for slimmer, lighter designs.*
- **(l) Ports:** 2x Thunderbolt™ 4 ports (USB-C), 2x USB 3.2 Gen 1 Type-A ports, 1x HDMI 2.0 port, 1x RJ-45 Ethernet port, 1x Universal audio port.

- *Note: This provides a robust set of modern, high-speed connections. Legacy ports like PS/2 and Serial are replaced by the more versatile USB and Thunderbolt™ standards.*
- **(m) Networking:** Integrated 10/100/1000 Gigabit Ethernet port and Intel® Wi-Fi 6E AX211, 2x2, with Bluetooth®.
- **(n) Operating System:** Windows 11 Pro, 64-bit (with downgrade rights to Windows 10 Pro).
- **(o) Security:** Trusted Platform Module (TPM) 2.0, chassis intrusion detection switch, Dell SafeBIOS, optional contact/contactless smart card reader, and fingerprint reader for biometric security.
- **(p) Power Supply:** 130W Type-C EPEAT AC Adapter.
- **(q) Cabinet:** Laptop chassis with a durable, professional design.
- **(r) Industry Standard Compliance:** EPEAT Gold registered in India, ENERGY STAR® 8.0 qualified.