



ToughStation 4 Computers & Monitors

Display Sizes: 8.4" - 43.0"

Our industrial-grade, fully sealed ToughStation 4 series of computers and monitors are constructed of 316 stainless-steel or powder coated aluminum and set the standard for durability in harsh environments.

The ToughStation's fully sealed enclosure resists dust and water ingress as well as corrosion for use in work environments that require frequent washdown and chemical sanitation. It is built to meet NEMA 4/4X and IP65/66 protection standards.

Shock and vibration-resistant components and harnessed cables reduce strain on internal parts to provide additional ruggedness to the overall design. This series is available with several powerful computer options for continuous use in demanding applications.

This specification summary represents VarTech Systems' baseline product configurations. All products are built to the exact requirements of our customer's applications and are customizable from the model shown.



Display Image: 24.0" ToughStation 4 computer (left) and monitor (right) with grained stainless steel finish.

Finishes: Standard finishes are black, white, or gray powder-coated aluminum or stainless steel. Custom colors of powder-coating are available.

Standard Features*

- **Cooling System:** Fanless design
- **Display:** Industrial-grade LED backlit LCD
- **Enclosure Construction/Design:** Stainless steel or aluminum
- **I/O Connection Types:** IP67/68 rated environmentally sealed circular connectors (various styles available)
- **Mounting Configurations:** Console, Console extreme, Gimbal, Mounting tabs, Panel with studs, Rack, RAM®, VESA, Special/other
- **Operating Temperature Range:** 0°C to 60°C
- **Optical Bonding (VBOND):** Optical bonding eliminates the air gap between display layers by adhering them together. This reduces glare, enhances display durability, and improves visibility in bright environments while preventing condensation and LCD overheating.
- **Power Input:** 9-36 VDC, 12 VDC, or 90-264 VAC internal power supply
- **Relative Humidity:** ≤ 95%
- **Storage Temperature:** -10°C to 60°C
- **Touchscreen Interface:** USB or Serial
- **Touchscreen Types:** Standard resistive, PCAP (Projected capacitive), ArmorTouch resistive

Computer Features:

- **CPU Spec:** Up to 5.3GHz/up to 24 Cores
- **Embedded computer**
- **Expansions:** PCI, PCIe, mPCIe, m.2, SIM card slot
- **Fanless Design:** Solid state components
- **Memory (RAM):** Up to 64 GB
- **Supported Operating Systems:** Windows 11 Pro, Windows 11 Enterprise LTSC, Windows 11 IoT Enterprise LTSC

Monitor Features:

- **OSD Button Placement:** OSD membrane control buttons can be mounted in alternate locations on front or rear of the display (front mounting options not available on all mechanical designs), or wired remote OSD

**Available features are determined by your chosen configuration.*

Optional Features**

- **Additional Expansion and I/O Ports**
- **Audio**
- **Available Accessories:** Glare protection hood, Keyboard bracket
- **Custom Branding, OEM, or UID Labeling**
- **Dimming:** Manual dimmer dial: 1000:1 dimming ratio or auto-dimming
- **Extreme Temperature Package:** -40°C to 70°C
- **Finishes:** Custom powder coats, Custom paints, Chemical-resistant finishes
- **Internal Conformal Coating:** Circuit board protection from moisture, dust, and corrosion

Computer Options:

- **Additional/Backup Storage**
- **RAID Configurations:** RAID 0/1
- **Sealed Speaker**
- **Separate NICs Available**
- **Storage:** Removable drives, Various capacities, Multiple drives
- **Supported Operating Systems:**
 - Windows 10: Pro (64-bit), Pro (32-bit), Enterprise, Enterprise LTSC
 - Windows 7 (64-bit, limited availability)
 - Linux (select versions supported)
- **ThinManager® Thin Client Management**
- **Trusted Platform Module: 2.0**
- **Wireless Connectivity:** 4G-LTE, Bluetooth, CAN Bus, Integrated router, Wi-Fi

Monitor Options

- **Audio Pass-Through**
- **Display Options:** USB failover, PiP, PbP, Image rotate
- **Integrated KVM Extender**
- **Legacy Video Support:** 15 kHz to 30 kHz, SOG/composite/separate horizontal and vertical sync, SOG/composite/separate horizontal and vertical sync (VGA only)
- **OSD Options:** Bluetooth control, IR remote, Programmable hotkeys, RS-232 OSD control (PC APP or OSD Serial control)
- **Other Video Support:** HD-SDI video signal

***Available features are determined by your chosen configuration.*





Specifications Chart

Display Size	Brightness (nits)	Resolution	Touchscreen**	Viewing Angle	Contrast	Aspect Ratio	Power***
8.4"	A: 600 B: 900 🌞	A: XGA 1024 x 768 B: XGA 1024 x 768	AT/PCAP	A: 88°/88°/88°/88° B: 88°/88°/88°/88°	A: 1000:1 B: 1000:1	4:3	A: ~35.5 W B: ~38.5 W
10.4"	A: 600 B: 1300 🌞	A: XGA 1024 x 768 B: XGA 1024 x 768	Res/PCAP/AT	A: 85°/85°/85°/85° B: 88°/88°/88°/88°	A: 700:1 B: 1000:1	4:3	A: ~31 W B: ~31.5 W
11.6" Wide	A: 300 B: 1600 🌞	A: FHD 1920 x 1080 B: FHD 1920 x 1080	AT	A: 89°/89°/89°/89° B: 88°/88°/88°/88°	A: 800:1 B: 900:1	16:9	A: ~31 W B: ~32 W
12.1"	A: 400 B: 1300 🌞	A: XGA 1024 x 768 B: XGA 1024 x 768	Res/PCAP/AT	A: 85°/85°/85°/85° B: 88°/88°/88°/88°	A: 750:1 B: 1000:1	4:3	A: ~31 W B: ~32 W
12.1" Wide	A: 500 B: 1500 🌞	A: WXGA 1280 x 800 B: WXGA 1280 x 800	Res/PCAP/AT	A: 85°/85°/85°/85° B: 85°/85°/85°/85°	A: 750:1 B: 750:1	16:10	A: ~38 W B: ~50 W
15.0"	A: 400 B: 1800 🌞	A: XGA 1024 x 768 B: XGA 1024 x 768	Res/PCAP/AT	A: 80°/80°/80°/80° B: 80°/80°/70°/80°	A: 600:1 B: 800:1	4:3	A: ~52 W B: ~60 W
15.6" Wide	A: 400 B: 1000 🌞	A: FHD 1920 x 1080 B: FHD 1920 x 1080	AT/PCAP	A: 80°/80°/70°/70° B: 89°/89°/89°/89°	A: 700:1 B: 1000:1	16:9	A: ~44 W B: ~59 W
17.0"	A: 350 B: 1500 🌞	A: SXGA 1280 x 1024 B: SXGA 1280 x 1024	Res/PCAP/AT	A: 80°/80°/60°/80° B: 80°/80°/60°/80°	A: 800:1 B: 800:1	5:4	A: ~52 W B: ~60 W
17.3" Wide	A: 400 B: 1000 🌞	A: FHD 1920 x 1080 B: FHD 1920 x 1080	AT	A: 80°/80°/60°/80° B: 80°/80°/60°/80°	A: 600:1 B: 600:1	16:9	A: ~56.5 W B: ~60 W
18.5" Wide	A: 500 B: 1500 🌞	A: FHD 1920 x 1080 B: FHD 1920 x 1080	AT/PCAP	A: 89°/89°/89°/89° B: 89°/89°/89°/89°	A: 1000:1 B: 1000:1	16:9	A: ~58 W B: ~72 W
19.0"	A: 350 B: 1600 🌞	A: SXGA 1280 x 1024 B: SXGA 1280 x 1024	Res/PCAP/AT	A: 85°/85°/80°/80° B: 85°/85°/80°/80°	A: 1000:1 B: 1000:1	5:4	A: ~43 W B: ~80 W
21.5" Wide	A: 350 B: 1500 🌞	A: FHD 1920 x 1080 B: FHD 1920 x 1080	AT/PCAP	A: 89°/89°/89°/89° B: 89°/89°/89°/89°	A: 5000:1 B: 1000:1	16:9	A: ~50 W B: ~119.5 W
24.0" Wide	A: 300 B: 1500 🌞	A: FHD 1920 x 1080 B: FHD 1920 x 1080	AT/PCAP	A: 89°/89°/89°/89° B: 89°/89°/89°/89°	A: 5000:1 B: 5000:1	16:9	A: ~53 W B: ~79 W
27.0" Wide	A: 350 B: 1000 🌞	A: FHD 1920 x 1080 B: FHD 1920 x 1080	PCAP	A: 89°/89°/89°/89° B: 89°/89°/89°/89°	A: 3000:1 B: 1000:1	16:9	A: ~57 W B: ~113.5 W
32.0" Wide	A: 500 B: 1500 🌞	A: FHD 1920 x 1080 B: FHD 1920 x 1080	PCAP	A: 89°/89°/89°/89° B: 89°/89°/89°/89°	A: 3000:1 B: 4000:1	16:9	A: ~53 W B: ~132 W
43.0" Wide	A: 700 B: 1500 🌞	A: FHD 1920x1080 B: FHD 1920x1080	PCAP	A: 89°/89°/89°/89° B: 89°/89°/89°/89°	A: 3000:1 B: 4000:1	16:9	A: ~63 W B: ~171 W

🌞 represents sunlight-readable display brightness

*A and B represent two different LCD panel options

**Touchscreen types: Res = Standard resistive, PCAP = Projected capacitive, AT = ArmorTouch resistive

***Power consumption is measured in watts at 12 VDC

Motherboard Specifications

Option	Processor	Memory (RAM)	Storage Drive	Operating System	Available I/O Ports
A	Intel® 12, 13th, 14th Gen	Up to 64 GB	Up to 2 TB	Windows 11	HDMI, RS-232, LAN, USB 2.0, USB 3.2
B	Intel® 11th Gen, i5-1145G7E	Up to 32 GB	Up to 2 TB	Windows 11	USB 3.2, 2.5GbE LAN, HDMI, DisplayPort
C	Intel® Atom® x6413	Up to 32 GB	Up to 2 TB	Windows 11	DisplayPort, USB 3.2, USB 2.0, LAN, HDMI
D	Intel® J6412 Quad-Core	Up to 32GB	Up to 2 TB	Windows 11	LAN, USB 3.1, RS 232, HDMI

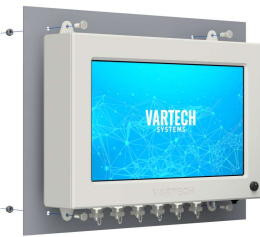




LCD Controller Boards

Option	Available Video I/O Ports	Horizontal/Vertical Scan	Resolution
E	1 x DVI, 1 x VGA	60 Hz up to 1440 x 900	Up to 1440 x 900, 8-bit
F	1 x HDMI, 1 x VGA, 1 x DisplayPort	60 Hz up to 1920 x 1200	Up to 1920 x 1200, 8-bit
G	1 x HDMI, 1 x DVI, 1 x VGA, 1 x Composite (PAL/NTSC)	60 Hz up to 1920 x 1200	Up to 1920 x 1200, 10-Bit
H	1 x HDMI, 1 x DVI, 1 x VGA, 1 x DisplayPort	60 Hz up to 1920 x 1200	Up to 1920 x 1200, 10-bit

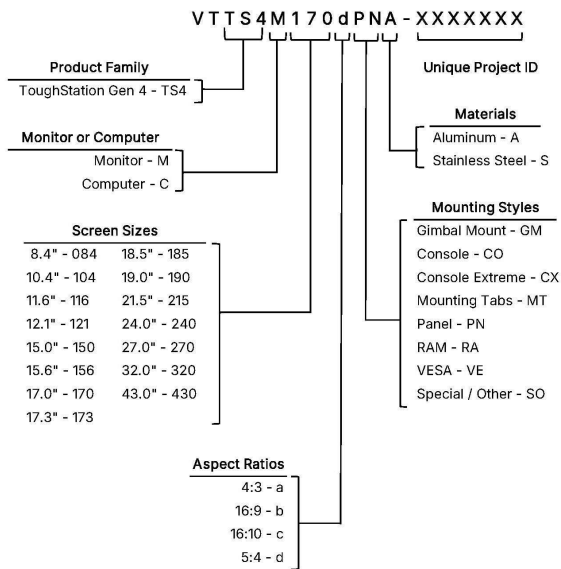
Mounts

	Console		Tabs																
	Console Extreme		VESA or RAM®																
	Gimbal	<table><tr><th colspan="2">Product Packages</th></tr><tr><th>Package</th><th>Details</th></tr><tr><td>High-Bright Sunlight-Readable Package</td><td> - High-luminance LED backlights - Proprietary optical film stack - Optical bonding of protective window or touchscreen to LCD - Anti-reflective coating - Brightness levels ranging from 700 nits to 1800 nits (depending on screen size) - Dimming: Manual dimmer dial - 1000:1 dimming ratio, or auto dimming - Optional: backlight kill switch </td></tr><tr><td>Component Ruggedization Package</td><td> - Potted components where applicable - Vibration dampening - MIL-DTL 38999 I/O connectors - Shock/vibration resistant hardware: motherboard, cable assemblies/connectors - Optical bonding of protective window or touchscreen to LCD - Designed to meet tolerances specified by select subcategories of MIL-STD 810F and/or DEFSTAN 00-35 inclusive of Part 3 Issue 4. </td></tr><tr><td></td><td>Panel with Studs</td><td>Vandal/Impact Resistance Package</td><td> - Impact resistant protective overlay glass 8H abrasion-resistant overlay glass - Chemical and stain-resistant glass and surfaces - Tamper-proof conduit connectors - Optional: Vandal-proof PCAP touchscreen </td></tr><tr><td></td><td>Rack</td><td></td><td></td></tr></table>		Product Packages		Package	Details	High-Bright Sunlight-Readable Package	- High-luminance LED backlights - Proprietary optical film stack - Optical bonding of protective window or touchscreen to LCD - Anti-reflective coating - Brightness levels ranging from 700 nits to 1800 nits (depending on screen size) - Dimming: Manual dimmer dial - 1000:1 dimming ratio, or auto dimming - Optional: backlight kill switch	Component Ruggedization Package	- Potted components where applicable - Vibration dampening - MIL-DTL 38999 I/O connectors - Shock/vibration resistant hardware: motherboard, cable assemblies/connectors - Optical bonding of protective window or touchscreen to LCD - Designed to meet tolerances specified by select subcategories of MIL-STD 810F and/or DEFSTAN 00-35 inclusive of Part 3 Issue 4.		Panel with Studs	Vandal/Impact Resistance Package	- Impact resistant protective overlay glass 8H abrasion-resistant overlay glass - Chemical and stain-resistant glass and surfaces - Tamper-proof conduit connectors - Optional: Vandal-proof PCAP touchscreen		Rack		
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Core Model Number Breakdown



I/O Connectors

Type	Image	Details
Bulgin		Waterproof circular connector used in harsh environments for power or signal connections.
IP67 Push/Pull Lock		Dust-tight and waterproof connector with quick-connect/disconnect mechanism.
MIL-DTL 38999		Military-grade circular connector with high environmental resistance and EMI shielding.
Standard Waterproof		Fully-shielded IP67 connectors.

The VarTech Standard



Best-in-Class Engineered Solutions

Our in-house team of highly-experienced engineers stand ready to design computing solutions tailored to the specific needs of your application.



Built-to-Spec Customization

VarTech offers industry-leading customization capabilities with countless options, features, and packages to ensure all the needs of your project are met.



Order Size Flexibility

We combine big business capability with small business agility to deliver both highly specialized low-volume orders and mass quantities for larger projects.



Short Lead Times

Our vertically-integrated manufacturing operation in Clemmons, North Carolina, USA affords our customers short lead times on custom projects.



End-to-End Project Support

A dedicated project manager will guide your project from the design phase through post-sale support and is always accessible to you throughout the process.



Unrivalled Product Durability

We set the standard for durability in extreme operating conditions with only the highest quality components used in our manufacturing processes.



Robust Product Portfolio

Our products range from small form factor computers to purge-protected workstations ensuring a perfect solution for your operating environment.



Industrial-Strength Protection

VarTech offers powerful NEMA and IP-protected solutions as well as hazardous area-certified products to protect your operations and minimize downtime.



Made in the U.S.A

We proudly design, engineer, manufacture, and assemble all of our products in our Clemmons, North Carolina Manufacturing and Research Facility.

Over 35 years of rugged and industrial computer, monitor, and workstation manufacturing experience!

