Virtium
Memory and Storage Solutions

Solutions Brochure

Industrial Embedded Technology
for an Interconnected World

Industry Solutions

Virtium provides memory and storage solutions to fulfill all the embedded industrial implementations below. These industry segments share these common requirements:

- Data protection against unexpected power loss
- Industrial temperature support (-40ºC to 85ºC)
- Balanced sequential and random read/write
- ESD, vibration and humidity resistance
- Low power / long product life

- Wide range of capacities
- Multiple interfaces and form factors
- Legacy support
- 99.9% uptime
- ROHS and REACH compliance

Smart designers choose Virtium to achieve far-superior builds and better total-cost-of-ownership.

Communications

Communications equipment continues to experience exponential increases in demand for data while simultaneously maintaining quality of service, reducing total power consumption, and increasing the return-on-investment on a bit-transfer basis. Implementations include: base stations, DSLAMs, PBX systems, multi-service gateways and remote access servers.

Networking

Networking applications represent the "last mile" of IT data/content. They continue to require quality of service/experience, a reduction in total power consumption and return-on-investment. Implementations include: switches and routers, supervisor and mezzanine cards firewall and VPN equipment and small cell networks.
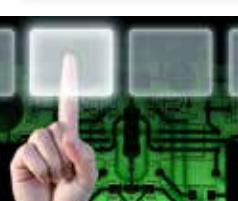
Energy

The Energy segment is subjected to electro-static discharge (ESD), extreme temperatures and high humidity. Urban sprawl means more demands on energy grids so the backbone systems require efficient uninterrupted operation and high durability. Implementations include: substation control, monitoring/diagnostics, data loggers, smart grid controllers and distribution systems.

Transportation (Land, Water, Air and Space)

Transportation applications are inherently subjected to extreme temperatures, shock and vibration, and high humidity. Implementations include: simple data loggers, GPS / geo-location and navigation, rugged PCs, in-vehicle control, monitoring, diagnostics and a wide range of architectures and software.

Industrial Automation

Industrial Automation environments are diverse yet share common requirements - with regard to form-factor, legacy support and endurance. Implementations include: large production plants, industrial PCs, factory automation/robotics, kiosks, ATMs, terminals, process control units and data loggers.

Medical

Medical applications are increasing in complexity and moving closer to the patient. This requires low-power, low-latency solutions at low costs. Implementations include: therapeutic devices, medical imaging, patient diagnostics, measurement and monitoring equipment.

Video and Signage

Professional media companies range from high-performance HD video capture to broadcast video serving and digital signage applications. Some devices require heavy write performance (data capture) - others require high read performance (video serving). Implementations include: professional video capture/editing, broadcast, ad terminals, indoor/outdoor multimedia signage, casino gaming and surveillance/security.

Virtium Products

Virtium's memory and storage solutions are designed to meet mission-critical, extreme temperatures, high-reliability and long life requirements for the most demanding embedded designs.

DRAM Memory Modules

All DRAM memory modules are rated at temperatures of 0ºC to 70ºC, -25ºC to 95ºC or -40ºC to 95ºC; available as unbuffered and registered and carry a 5-year warranty.

	DDR4	DDR3	DDR2	DDR	SDRAM
Densities	4GB, 8GB,16GB and 32GB	1GB, 2GB, 4GB, 8GB,16GB and 32GB	1GB, 2GB, 4GB and 8GB	256MB, 512MB, 1GB, 2GB and 4GB	256MB, 512MB and 1GB
Form Factor	DIMM, SODIMM and Mini-DIMM	DIMM, SODIMM and Mini-DIMM	DIMM, SODIMM and Mini-DIMM	DIMM and SODIMM	DIMM and SODIMM
ECC / non-ECC	ECC / non-ECC	ECC / non-ECC	ECC / non-ECC	ECC	ECC
Speed	PC4-2133, PC4-2400 and PC4-2666	PC3-12800, PC3-10600, PC3-8500 and PC3-6400	PC3-4200 and PC2-5300	PC-2100 and PC-2600	PC-100 and PC-133
Rank	1,2 and 4	1,2 and 4	1,2 and 4	1,2 and 4	1,2 and 4
Height	Standard, VLP and ULP	Standard, VLP and ULP	Standard, VLP and ULP	Standard and VLP	Standard and VLP

StorFly® SSDs

Virtium StorFly SATA III 6Gb and PCIe SSD storage solutions are available in all popular form factors. They are ideal for heavy-duty embedded applications that include boot drives, data logging, caching and backup.

All StorFly SSD's include Virtium's software tools to fine-tune operation, and ensure optimum performance and endurance.

All StorFly PE Class SLC drives are rated for extreme temperatures of -40ºC to 85ºC, *30X+ complete drive writes per-day and carry a 5-year warranty.

All StorFly CE Class MLC drives are rated for temperatures of 0ºC to 70ºC, *1X complete drive writes per-day and carry a 3-year warranty.

* Complete drive writes vary according to workload.

	2.5"	1.8"	M.2	Slim SATA	mSATA	CFast
Key Features	Drop-in HDD replacement and power-fail protection	Hi-capacity in 5mm thin frame and power-fail protection	Small footprint, low-power, power-fail protection	Standard 22-pin SATA connector, low-power, power-fail protection	Small footprint, low-power, power-fail protection	Low power, power-fail protection and small, fully-framed package
Interface / Wattage	SATA: 5V or 3.3V / 1.7W	SATA: 3.3V / 1.7W	SATA: 3.3V / 1.7W PCIe: 2.5W	SATA: 5V or 3.3V / 1.7W	SATA: 3.3V / 1.7W PCIe: 2.5W	SATA: 3.3V / 1.7W
Capacities	SLC: 8GB - 256GB MLC: 30GB - 480GB	SLC: 8GB - 256GB MLC: 30GB - 480GB	SLC: 8GB - 256GB MLC: 30GB - 480GB	SLC: 8GB - 256GB MLC: 30GB - 480GB	SLC: 8GB - 256GB MLC: 30GB - 480G GB	SLC: 8GB - 128GB MLC: 30GB - 240GB
Dimensions (mm)	69.85 x 100.5 x 7 / 9.5	54 x 78.2 x 5	42.15 x 22.15 x 3.65 (2242) 80.15 x 22.15 x 3.65 (2280)	54 x 39 x 4.8	50.8 x 29.8 x 4.8	42.8 x 36.4 x 3.3

TuffDrive® SSDs

Ideal for networking and embedded applications that require a modest amount of storage for chipset designs that may not have an integrated SATA. They are beneficial for storing configurations and providing the building blocks for the industry solution requirements outlined in this brochure. TuffDrive builds center around industrial-grade SLC, but MLC is available on special request.

All TuffDrive SLC SSDs are rated for extreme temperatures of -40ºC to 85ºC and carry a 5-year warranty.

	Compact Flash	eUSB 10-pin	eUSB Key
Capacities	128MB - 64GB	2GB - 64GB	8GB - 64GB
Voltage / Wattage	5V / .6W	5V / .4W	5V / .4W
Dimensions (mm)	42.8 x 36.4 x 3.3	36.9 x 26.6 x 9.7	Short: 45.3 x 17.9 x 6.2 Long: 71.4 x 17.5 x 8.0

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About Virtium

Two decades ago, Phu Hoang and Chinh Nguyen started a journey on their dream to design and build the best industrial embedded memory and storage available. They called their US company Virtium - Latin for Integrity and Excellence.

Along their journey, their dedication and ability to surround themselves with top industry talent has paid off. Today they share their dream with 100+ employees worldwide and enjoy year-over-year double-digit growth.

Virtium manufactures memory and storage solutions for the world's top industrial embedded OEM customers. We design, build and support our products in the USA, and provide a dedicated software team for custom storage solutions – all fortified by a network of global locations.

As a Samsung-preferred partner, we give unparalleled access to specialty memory modules. Our quality products, long industry presence and knowledgeable, tenured experts have earned us the lasting trust of a deep customer base.

Our world-class technology and support provide a superior customer experience that continuously results in better industrial embedded products.

Today, Virtium continues to focus tightly on being the leading memory and storage solutions provider in the industrial embedded space. While competing companies can provide products in this market, Virtium maintains its competitive edge by understanding key design concerns and tailoring its products to enable embedded designers to make the best possible solutions for our interconnected world.

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