



Display Modules Make Video Walls Easy

Intel® Smart Display Module specifications are the building blocks of a new era of digital technology.

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Video walls have long been recognized for their ability to attract attention and engage customers. Estimates vary, but one [recent report](#) predicts the global video wall market will grow at a compound annual rate of 23.4 percent over the next several years to reach \$37.3 billion by 2025.

Video walls, or the combining of several displays into one large display, have typically been deployed as attention-getters in the flagship stores of retail chains, in control rooms, in broadcast studios or other situations where the deployer wants to convey information in an effective and eye-catching manner.

Typically, though, the hardware needed to create a video wall has put them out of reach of smaller players or those with limited space. In addition to the displays, deployers needed a video wall controller that could cost several thousands of dollars. And because of the hardware behind those displays, they also needed a mounting solution that resulted in a bank of displays that might protrude a foot or more from the wall on which they were located. Some video wall solutions require a dedicated PC, requiring the business to devote space to place that PC.

Developments in computer technology, though, are changing that, putting the ability to deploy a video wall into the hands of business operators of all sizes.

Big power in a small package

The challenge of deploying a low-cost, small form factor video wall is being addressed via [Intel® Smart Display Module](#) specifications. Although video wall hardware has improved in recent years thanks to small media players or transmitter/receiver solutions, SDMs take things a step further.

The modules are available in two sizes—options—the Intel® SDM Small (Intel® SDM-S) and Intel® SDM Large (Intel® SDM-L). Their design omits the module housing or chassis, so they can be integrated into a display or host system opening the door to thinner integrated displays.

The Intel® SDM-S measures 60 mm x 100 mm (about 2.6" x 4") with a thickness of about 20 mm (about 0.8"), slightly larger than a credit card. These

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modules are ideal for low-power, basic signage applications. The Intel® SDM-L is designed for high-performance computing applications, with module dimensions of 175 mm x 100 mm (slightly less than 7" x 4") and a thickness of about 20 mm.

Memory for the Intel® SDM-S tops out at 8 GB, while the Intel® SDM-L can incorporate up to 64 GB of RAM, more than can be found on most consumer PCs. Max storage for the Intel® SDM-S is 64 GB, configurable for an M.2 card, while for the Intel® SDM-L it's 512 GB. The SDM-S features up to an Intel® Core i5-7Y57 processor, while the SDM-L features up to an Intel® 11th Generation Core™ i5-1135G7 processor.

When it comes to video walls, instead of a dedicated PC or media player and a video splitter, deployers can simply daisy-chain four displays together in either a 2x2 or 1x4 configuration (horizontal or vertical). That's it. No media player, video splitters, dedicated PC or other hardware needed.

Retailers, restaurants, museums and other venues can easily set up a video wall much easier and at a significantly lower cost than has been previously possible. There is no need to have a dedicated space for the storage of PCs and other hardware, and the cabling required is kept to an absolute minimum.

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The result is that operations of virtually any size can take advantage of the messaging benefits that video walls offer.

Taiwan-based [GIGAIPC](#), as one of Intel’s close partners, offers modules based on Intel® SDM specifications. GIGAIPC was established in 2018 as an embedded solution-focused subsidiary from GIGABYTE, incorporating sophisticated R&D capability and decades of experience in the computing market in its products.

A host of applications

Along with video walls, Intel® SDMs are serving as the brains behind such applications as digital signage networks, education whiteboards, street-side kiosks and point-of-sale systems. New applications are being developed nearly every day.

In addition, major manufacturers including Sharp/NEC, AUO, Newline, Panasonic and DynaScan are producing displays featuring an Intel® SDM slot.

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Building a solution around Intel® SDM specifications offers several benefits. [According to Intel](#), those include:

“Digital displays, kiosks, touchscreens and similar technologies are increasingly becoming a part of consumers’ lives, whether it be a video wall in a clothing store, a classroom on a college campus or a monitor next to a hospital patient’s bed.”

- **Flexibility** – Along with a choice of module sizes, designers have their choice of operating systems.
- **Upgradeability** – The card-edge connectors support multiple generations of Intel processors, functionality and display resolutions.
- **Reliability** – SDMs are validated for commercial and embedded use case requirements, with support for higher operating temperatures
- **Serviceability** – The plug-and-play design makes service easy. Supported by hardware-based device management.
- **Security** – Using the latest hardware-based security, Intel® SDM specifications can help keep digital displays from being a point of vulnerability.

Digital displays, kiosks, touchscreens and similar technologies are increasingly becoming a part of consumers’ lives, whether it be a video wall in a clothing store, a classroom on a college campus or a monitor next to a hospital patient’s bed. When it comes to building those applications in a cost-effective, efficient, reliable and forward-looking manner, Intel® SDM specifications are the logical foundation on which to start.



Overview of Intel® Smart Display Module specifications

Commercial Solutions

Optimized for digital signage, public kiosks, professional monitors, point-of-sale, projections for magic mirrors, beside terminals, hospitality, education and more.

Dual-size Offering

Intel® SDM Small (Intel® SDM-S) (60 mm x 100 mm) and Intel® SDM Large (Intel® SDM-L) (175 mm x 100 mm), with maximum z-height of 20 mm, without enclosure.

Scalable

Forward-looking card edge connector supports multiple generations of Intel® processors, functionality, and display resolutions up to 8K and beyond. Optimizing processing capabilities and easy upgrade from entry to high-end computers.

Flexible Integration

Can be built-in or externally plugged into a display for maximum integration flexibility. Ease of operation with slim form factor in displays. Reduce digital signage system's complexity as greater flexibility in processors and operating systems.

All-in-One designs

Integrated into sleekest All-in-One designs where space & workload are optimized with robust, integrated compute capability together delivers enriching visual experiences.

Source: Intel

ABOUT THE SPONSORS:

GIGAIPC CO, LTD, established in 2018 as an embedded solution-focused subsidiary of GIGABYTE, is driven by passion for technology and sophisticated R&D capabilities. The company leverages its experience in the computing market to offer board-level and system-level products for 5G, IoT, Machine Vision, Industrial Automation, Smart Retail and Healthcare. GIGAIPC operates an award-winning manufacturing facility in Taiwan, synchronizing with GIGAIPC's R&D department to deliver high quality and reliable products. GIGAIPC is a young and energetic organization driven by surpassing our customer's expectations, and we promise to offer our customers not only high-quality computing platforms but also world-class service and support. As a result, GIGAIPC's service centers have been established in most major cities worldwide, and our global presence continues to grow, offering the best service to our customers.

GIGAIPC is an Associate Member of the Intel® Internet of Things Solutions Alliance.

