PRODUCT BRIEF

Intel® Smart Kiosk Module Specification

Smarter Kiosks. Easier Service. Lower TCO.

The new Intel® Smart Kiosk Module (Intel® SKM) accelerates scalability, simplifies service and maintenance, and makes it easier to upgrade and integrate new technologies in interactive kiosks

According to one recent report, the global interactive kiosk market is expected to grow to USD $34 billion by 2023[1]

Demand for intelligent interactive kiosks is growing worldwide

Industries and governments worldwide are choosing to cut costs and streamline customer-service functions by using interactive kiosks to offer customers around-the-clock access to information and services. Interactive kiosks are now used in shopping malls, retail stores, airports, hotels, restaurants, healthcare facilities, government offices, on city streets, and in many other locations, enabling a wide range of businesses and organizations to put information and services at people's fingertips, increase customer loyalty, and strengthen their brand with target customers. According to one recent report, the global interactive kiosk market is expected to grow to USD $34 billion by 2023.[1]

Over the years, interactive kiosks have evolved from single-function terminals with limited services to today's intelligent kiosks that use touch-enabled displays to provide multiple services, highly secure transactions, remote manageability, and virtual assistance in one easy-to-use location. As the market for interactive kiosks continues to grow, so does the demand for smarter multi-function kiosks with advanced capabilities such as workload consolidation, artificial intelligence, smartphone and social media integration, 5G connectivity, telepresence, and data analytics.

Introducing the Intel® Smart Kiosk Module

The new Intel® Smart Kiosk Module (Intel® SKM) is a revolutionary solution that effectively addresses all of the key challenges related to scaling and maintaining interactive kiosks. As a result, Intel® SKM enables organizations across many different verticals to simplify and streamline their use of intelligent interactive kiosks, and deliver a growing array of business and customer benefits while increasing revenue and reducing their overall costs.

With its unique modular design, the Intel® SKM provides a standard hardware form factor reference design for interactive kiosk systems, which separates the one-size-fits-all compute module and the peripheral interface board (PIB). The Intel SKM then links the compute module and the PIB with a standard PCIe*-based connector, creating an elegant design that makes it easy to scale, upgrade the capabilities of installed kiosks, and integrate new technologies such as artificial intelligence. The compute module, which is the same size and shape for every type of kiosk, supports many different CPUs. And because the compute module and the PIB are separate, there is no need to unplug and accurately reattach multiple cables when it is time to service, replace or upgrade the compute module. The cables stay plugged into the PIB, making it easy to access, remove or swap out the compute module.

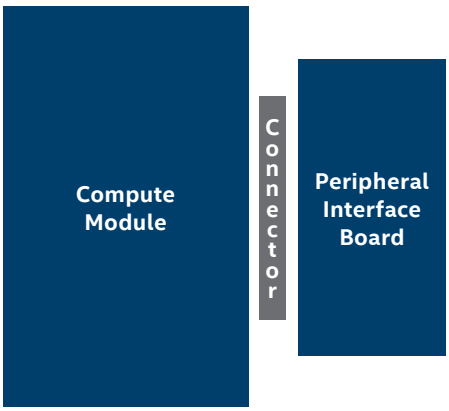

Figure 1. Intel® SKM architectural partitioning

Intel SKM also offers backward compatibility with the Intel® Smart Display Module Small (Intel® SDM-S) and Intel® Smart Display Module Large (Intel® SDM-L) form factors for integrated displays. Organizations that are already using either of the Intel SDM form factors for information kiosks or other displays can continue to capitalize on their previous technology investments by integrating, leveraging and reusing those resources with Intel SKM to create more intelligent kiosks while retaining the flexibility, performance and other benefits of Intel SDM.

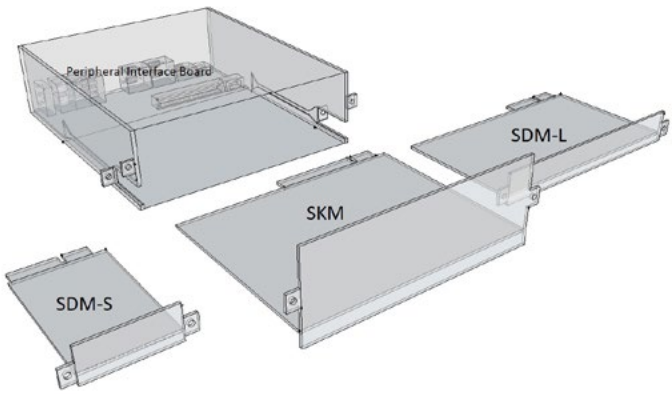

Figure 2. Intel® SDM compatible chassis design proposal.

Features and benefits of the Intel SKM

The Intel SKM offers many valuable advantages over previous interactive kiosk hardware design configurations, including:

- **One size fits all –** A single standardized compute module that enables different kiosk categories and allows easier usage model scaling, making it easy to add new capabilities, increase functionality, and repurpose kiosks for different uses.
- **Simplified service and maintenance –** Organizations can change the compute module without changing IO or removing cables, thereby reducing the time for maintenance tasks and avoiding mistakes in reconnecting cables to the compute system.
- **Ease of upgrading –** Upgrade the compute module without changing IO. The task of replacing or upgrading the compute module is simpler and does not require a specialist Anyone can easily unplug the compute module and replace it or upgrade it with a new one.
- **Lower TCO –** The ease of servicing, maintaining, upgrading, and integrating new technologies into kiosks reduces costs and lowers the total cost of ownership.
- **Workload consolidation –** With general purpose compute built in, the Intel SKM can power multiple workloads from a single device.
- **Scalability –** The Intel SKM is highly scalable and designed to support workload accelerators for analytics and artificial intelligence in the future.
- **Backward compatibility with Intel SDM –** Integrate, leverage and reuse Intel SDM form factors with Intel SKM.

Support for new uses cases

Intel SKM will help to usher in a new era of intelligent interactive kiosks that businesses and organizations in many sectors can use to engage and serve their customers more effectively by providing them with easy self-serve access to essential services and information whenever they need it. Because of the Intel SKM modular design, kiosk manufacturers can choose to create specialized PIBs for each major vertical, such as retail, healthcare, and banking, depending on the different I/O requirements and business needs. Here are a few examples of new use cases for interactive kiosks:

Intelligent banking kiosks
Intelligent banking kiosks provide a cost-effective and scalable solution to help financial institutions extend their services to customers in remote or rural areas, who do not have ready access to financial services. Unlike traditional ATM machines, which only handle simple deposits and withdrawals, intelligent banking kiosks provide services that customers normally could only receive from a bank teller in a branch office. Such services might include opening and closing accounts, applying for loans, reviewing credit card statements, managing investments, and making mortgage payments.

Intelligent healthcare kiosks
Hospitals, pharmacies and medical clinics increasingly use intelligent kiosks to reduce wait times and provide a better experience for patients. Intelligent healthcare kiosks enable patients to schedule appointments, review their medical records, communicate with their doctors, renew prescriptions, and pay their bills on their own timetable.

Intelligent retail kiosks
Intelligent retail kiosks allow customers to purchase products without waiting for a cashier, check the availability of merchandise, compare sizes, colors and models of different products, and place catalog orders in the store for home delivery. Retailers also use intelligent interactive kiosks to upsell a variety of products, alerting shoppers to sale items and short-term specials and suggesting product combinations many customers find appealing. In addition, some retailers are using intelligent kiosks to gather information about customer demographics and preferences, so they can tailor their offers more precisely to their target audiences.

Smart city kiosks
City officials are struggling to manage rapid urban growth and the stress it places on core services while continually improving citizens' quality of life. Intelligent interactive kiosks in locations ranging from city streets and plazas to subway stations and government offices enable residents and visitors to access useful information and essential services at any time. In addition to providing wayfinding and transit route and schedule information, smart city kiosks may enable citizens to pay their parking tickets and property taxes, make emergency phone calls from the kiosk, recharge their mobile devices, and connect to Wi-Fi. City planners also use smart kiosks to gather and analyze information about pedestrian and vehicle traffic patterns and other data that can help them make better decisions about resource allocation.

INTEL® SMART KIOSK MODULE (INTEL® SKM) SPECIFICATIONS	
Targeted Applications	Commercial solution optimized for kiosk applications such as banking, healthcare, retail
CPU Scalability	Up to Intel® Core™ S-series processor (65W)
Form Factor	175mm x 140mm x 65mm
Thermal Solution	Integrated on module
Interface Connector	Card Edge: Standard PCIex16 (164 pins)
Connector Features	High speed I/O, and professional and expanded features
Operating Environment	Commercial grade
Product Availability	Ecosystem branded, licensed to third party
Serviceability	Professionally serviceable

Industry Support for Intel® Smart Kiosk Module

Kioskhome*

"Kioskhome is a professional and fast-growing kiosk solution provider focusing on the medical kiosk market in China. We are very pleased to work closely with Intel to offer new Intel® SKM Platform-based kiosks which are easier for assembly and maintenance. They greatly improve our productivity and reduce efforts from customer service.

Intel SKM, as a new industry standard, also offers the power to boost our continuous innovation and defines an international criteria and specification for kiosk market growth.

—Steve Zhong, General Manager

Litemax*

"Interactive kiosks are becoming increasingly popular and widely used in the hospitality and service industries—at airports, hotel check-in counters, and fast food restaurants. With the modular design of Intel SKM, it is easy to create interactive kiosks that help customers meet their unique business needs and better manage their labor costs while reducing TCO for the kiosks themselves. As a leading display provider, we see Intel SKM as a mainstream kiosk spec that we will provide to all of our kiosk clients."

—David King, President of Litemax

Seavo*

"As a leading IoT hardware provider in the PRC, Seavo has been working with the best equipment vendors in the kiosk industry for many years, and Seavo continues to provide a better core computing platform for the equipment.

SKM, developed jointly by Intel and Seavo, has created a unified core computing module specification for the kiosk market that supports flexible configuration to meet different application requirements, reduces the cost of both product development and inventory, and makes maintenance and upgrading more convenient, which will help customers gain more competitive advantage in the market."

—Wenpu Wu, Vice President of Seavo

V-Series International Group*

"As a pioneer self-service kiosk and vending-kiosk manufacturer in the APAC region, V-Series® International Group is proud to be an early adopter, designer and manufacturer of the Intel® Smart Kiosk Module (Intel® SKM) and the very first to deploy this technology in our clients' projects. With rapidly growing opportunities in cashless self-service kiosks, smart outdoor kiosks and self-service vending machines, Intel® SKM, as the integrated heart of these smart machines, gives our customers a very big advantage of proper and structured cable management, easy scalability, and fully integrated solutions."

—Stone Foo HY, Group CEO

Learn more about Intel® SKM and other Intel® digital display solutions

[1] *Interactive Kiosk Market Research Report - Global Forecast to 2023*, Market Research Future, June 2018. (Reference: https://www.marketresearchfuture.com/reports/interactive-kiosk-market-4546)

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