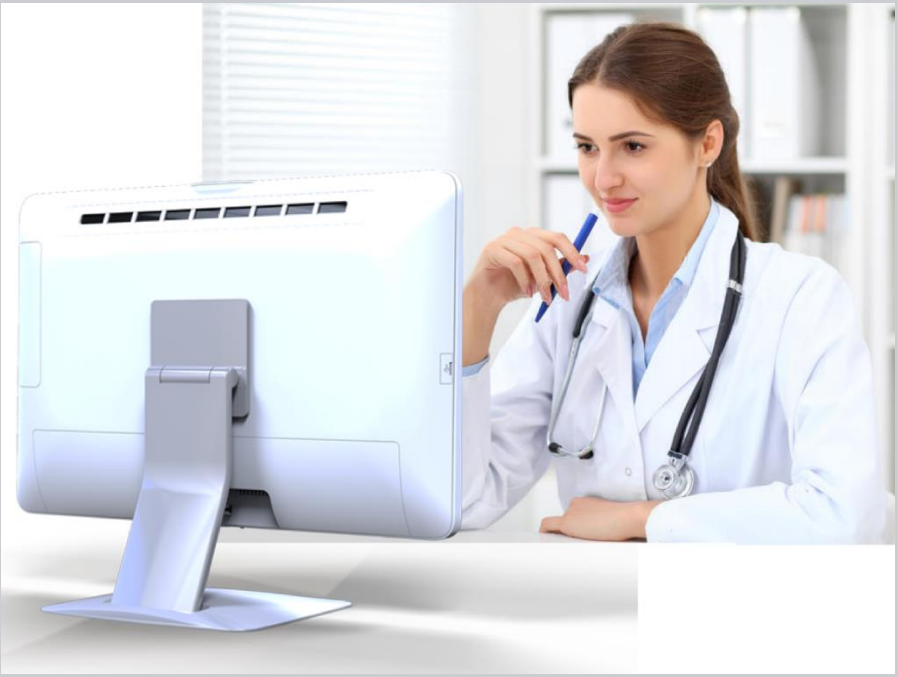
Choosing the Right All-In-One PC



In a world rapidly moving towards digital technology, Human Machine Interface, or HMI, plays a pivotal role in facilitating user interaction with growing complex electronic equipment. All-in-one panel pc, or AIO, in particular, emerged as a prime choice for various applications and environments. Whether you need a small 10” with computing capability to control your industrial printer while forwarding information to a central server, or an 21.5” patient portal to collect valuable feedback to qualify for Meaningful Use, an AIO is an excellent choice for cost and functionality balance.

However, the number of AIO suppliers and selections grew significantly. If you have decided to include an AIO in your solution, other than the standard CPU, RAM, HDD, what other factors should you be considering and which one should you focus on?

Specialized Application or General-Purpose Retail

One of the primary driving factors is the pricing. Upon a quick search online, buyers will notice the wide range of AIO price. How is it possible

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that I can buy a Dell on Newegg for 2/3 of price of another manufacturer?

Apple iMac

Inventec M215

Dell, HP, APPLE, and many other computer providers you commonly see in Amazon or Best Buy are loosely referred to as Retail AIO. Others, such as Inventec's M215, are considered specialized AIO serving a specific niche. In the case of M215, it is targeting healthcare. The biggest difference between a retail and an industrial computer lies in durability, life cycle, features designed, and components used.

For example, a Dell computer may have a lifecycle of 1 or 2 years, upon which you will need to source a new supply. A dedicated medical AIO, on the other hand, typically has a life cycle of 5 to 7 years. This means going retail, you will at least spent 3 times amount of product sourcing effort than going with a medically specialized AIO

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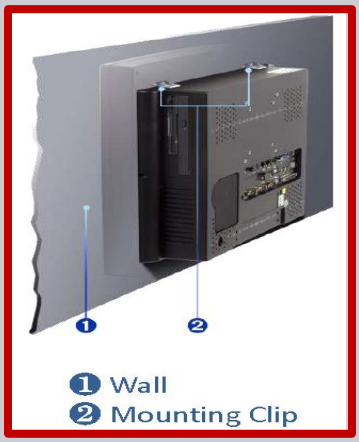
It gets worse if your solution requires certain certifications, such as FCC, FDA, or UL60601-1. These typically run for $60,000 to $100,000 depending on the application and market, so imagine spending that amount of money three times. They also take a long time to complete, often up to 6 months. If you include time for your own internal product evaluation and approval, you are looking at anywhere between 9 to 12 months of procurement and engineering intangible efforts (times they can use to develop new products), every two years.

So while the initial investment of specialized AIO may be relatively more, the warranty, the repair, the number of certification will surpasses the cost, especially if your application is in a tough environment, such as an outdoor Kiosk collecting data, or mission critical tasks, such as in a surgical room.

Embedded in the Wall or Mounted on an Arm

Generally speaking there are two types of AIOs: Embedded in the wall or mounted on an arm/stand.



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If you are embedding an unit on the wall, one factor to consider is the Input/Output connection available in the front. Wall mounting units are usually secured by the bezel, which puts the back of the units behind the wall. For some IOs, such as adaptor or Ethernet cable, being behind the wall is good to keep a clean look. However, you want to keep some of the everyday user needs in the front for easy access. This is why Inventec's M215 kept a USB on the right side of the panel. The back IOs such as power, RS232, video connectors are secured with a key door to avoid tempering in a public application, such as an entrance security in building automation

If you are mounting on an arm or a cart, size and weight will be the primary factor. Sometimes users even mount two displays on a single medical cart. M215 is the lightest 21.5" unit in the market, only 11lbs without the battery. Since the units are mounted on the arm, there isn't much restriction on the IO as a wall mount unit.

Fan or Fanless

Most retail AIOs have fans to cool the unit. These may not be suitable for some applications. For example, a digital signage on a bus, because of

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vibration and shock, usually cannot have moving mechanical parts such as a fan. Other applications may require a quiet system so the user is not disturbed (patient recovery). Again, this depends on your solution.

The most common way of achieving fanless system is through heatsink. The downside is that heatsink is usually heavy, which should be considered if your mounting solution has certain weight limit. The CPU is another factor. More powerful CPU dissipates a lot more heat, and a Fan will provide a better heat management, though be aware that fan does draw dusts into the system.

Ready to Move to AIO?

Going from a traditional desktop plus display to AIO depends largely on your designs. We've listed a few general factors to consider, but it comes down to the application. If you want some suggestions, or if you already have the requirements and want to see if M215 meets your purpose, please feel free to reach out to Inventc at NABUsales@inventec.com. We look forward to your questions.

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