



DFI

The Meticulous Service and Impeccable Quality Have Dramatically Increased The Performance of Military Aviation Mini-Computers

With the development of artificial intelligence and the Internet of Things, uncrewed aerial vehicles (UAVs), which can reduce casualties and mission burdens, have long become indispensable applications for military units worldwide. Due to the agility of military equipment, the use of embedded computer modules (SOM) to create drone computing brains, that can be upgraded with visual computing requirements, will bring greater design flexibility and better system reliability. DFI's WL9A3 embedded computer module is an excellent product for this.

Region: **Europe**

Industry: **Unmanned military aviation vehicle**

Application: **Ultra-mini military-industrial computer**

Solution: **WL9A3 industrial-grade COM Express
Mini embedded computer module**





In the military field, the development of uncrewed aircraft can be traced back to the First World War, which happened more than a hundred years ago and was heavily put into the battlefield in the 21st century. Today, military drones have long become the focus of competition among countries worldwide and are not limited to reconnaissance purposes. They have further evolved into uncrewed combat aircraft that can be equipped with weapons. They can even be combined with artificial intelligence to perform more arduous maritime ship landing and aerial refueling tasks.

An European manufacturer founded in 1976 became an European leader in creating "Ready To Application" solutions based on commercial off-the-shelf products (COTS, Commercial-Off-The-Shelf), and has been working in aerospace for a long time. They focus on defense, communication systems, transportation, energy, medical and music streaming applications, and have also been active member to involve in the three

organizations closely related to the formulation of industrial computer specifications—PICMG (COM Express, SHB Express, MicroTCA), PCI-SIG (PCI Express, M .2), and VITA (VPX, XMC, FMC).

They have launched a series of industrial-grade computers with MIL-STD-810 military regulations and DO-160 avionics hardware test specifications for military applications. They must have high reliability, miniaturization, low power consumption, SWaP- C (Size, Weight, Power, and Cost), and other characteristics. The target applications are unmanned aerial systems (UAS), uncrewed combat aerospace vehicles (UCAV), and rotary-wing drones. Its design limit is "1.5 liters in volume, 1.5 kg in weight, and 15W power consumption (up to 25W)". It must withstand the operating temperature of -40 to 71 degrees and the impact of gravity acceleration 40G.

This ultra-mini (Ultra-SFF) military-industrial computer adopts the COM Express Mini specification

to ensure upgradeability in response to different performance requirements, reduce design risks and costs, and accelerate deployment. Corresponding to the Atom E3900 series and the seventh-generation Core processor, they chose DFI's WL9A3 as the upgrade solution for high-end applications. The reason is nothing more than the following three points:

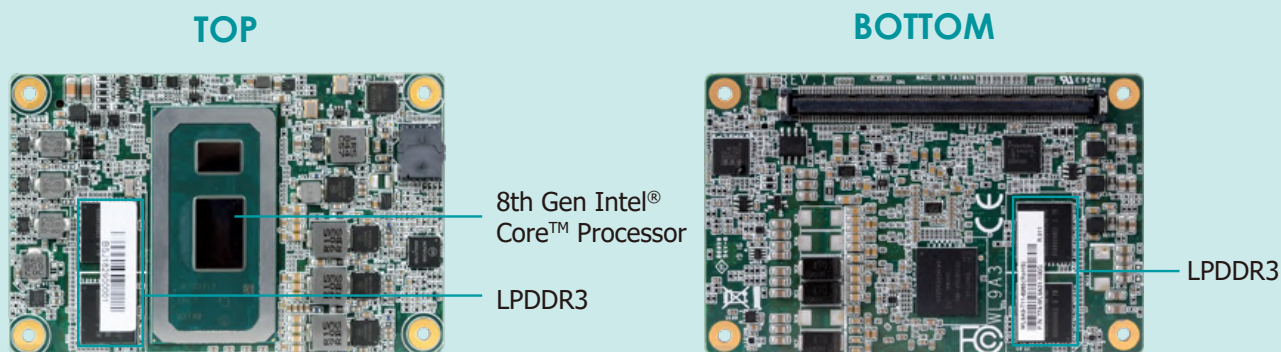
High performance: WL9A3 supports a quad-core eighth-generation mobile Core processor and built-in memory with up to 16GB LPDDR3 and 128GB eMMC. This is an extremely rare specification in the COM Express Mini world. From operating temperature to shock resistance, it also fully meets the needs of this manufacturer.

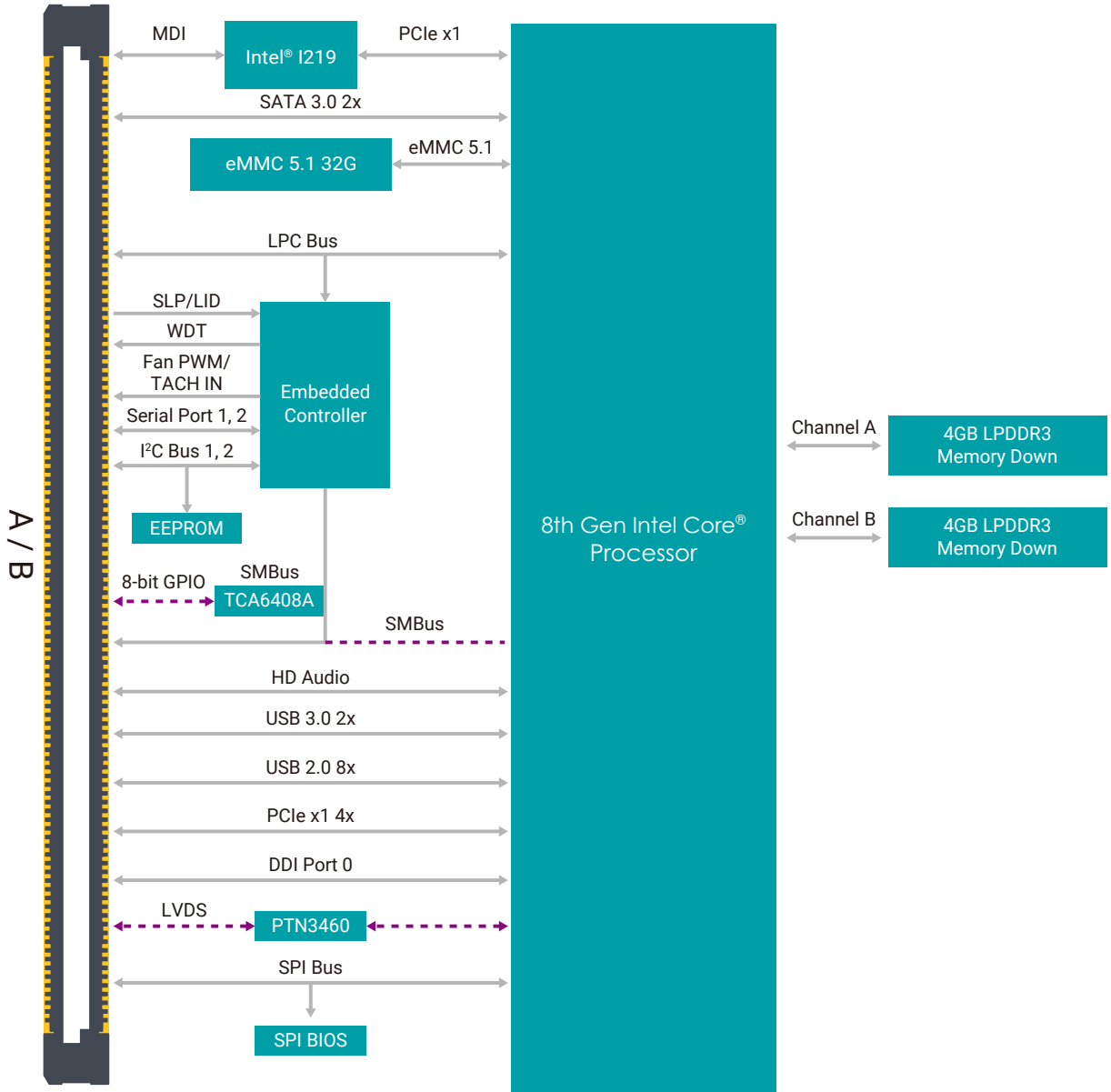
Customization: DFI overcomes the compatibility problem between the WL9A3 and the existing carrier board and customizes a dedicated BIOS for it.

Quick response: No matter the question, DFI will respond quickly in the shortest time.

Finally, according to Intel's supply schedule, it can last until the second quarter of 2035. It is absolutely a must-have requirement for military equipment that has been in service for more than a decade or even longer.

Although embedded computer modules seem to have the exact specifications, the devil is always hidden in the details, especially for military weapons that need to be foolproof. With its meticulous service, impeccable quality, and product design capabilities that disregard the industry, DFI assists this European manufacturer to increase the effectiveness of military aviation mini-computers in the shortest possible time and strengthen the military value of UAVs.





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DFI

Founded in 1981, DFI is a global leading provider of high-performance computing technology across multiple embedded industries. With its innovative design and premium quality management system, DFI's industrial-grade solutions enable customers to optimize their equipment and ensure high reliability, long-term life cycle, and 24/7 durability in a breadth of markets including factory automation, medical, gaming, transportation, smart energy, defense, and intelligent retail.

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