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Elevating UAV Capabilities:
Qisda and DFI Unveil New UAV Solutions
at COMPUTEX 2025

Partnering with the Qisda Smart UAV Business Unit, DFI unveiled the innovative Qisda Drone Solution in COMPUTEX 2025. Focusing on commercial and mission critical applications, it integrated advanced hardware and software, intelligent obstacle avoidance, and long-distance transmission to ensure seamless aerial operations.

UAV Evolution: Smarter Drones Are on the Horizon

A research from [Marketsandmarkets](#) stated that the unmanned aerial vehicle (UAV) market is projected to grow from USD 30.2 billion in 2024 to USD 48.5 billion in 2029 at a CAGR of 9.9% in the study period. Among the key trends that promote this rapid growth are the developments in high-resolution imaging sensors that expand application possibilities, integration of data analytics and machine learning algorithms that enable autonomous operations, etc.

These factors collectively contribute to the growing adoption of UAVs across an increasingly diverse range of applications. With AI integration, UAVs have experienced significant advancements in both commercial sectors and mission critical applications.

UAV Industry Hardware & Solution Requirements Evolve with AI Integration

UAVs rely on battery power to maximize flight time while carrying essential hardware such as cameras, sensors, or cargo. To optimize efficiency and extend battery life, UAV components must be lightweight and compact enough to fit within the chassis. UAV hardware must also be vibration resistant, have a wide operating temperature range, as well as humidity resistance to make sure the UAV can operate properly in various operational conditions. UAV hardware must also support real-time data processing, secure communication protocols, and efficient power management to ensure reliable and autonomous operation across diverse applications.

With the growth of AI integration, drone software requirements are also changing. As AI continues to advance, drones can now process data on-board; improving efficiency, reducing response times, and enhancing decision making capabilities. This enables the UAV to perform various innovative functions, including real-time object detection, obstacle avoidance, and autonomous navigation, AI-driven flight path optimization, swarm technology, geofencing, and more.

As AI grows more sophisticated, drone applications will continue to expand further into industrial automation, emergency response, environmental monitoring, and smart city development-transforming UAVs into highly versatile, self-sustaining aerial platforms. The applications and use cases for drones have also grown beyond the conventional monitoring/ surveillance as UAVs have also been in agriculture for hydration and insecticide/ herbicide dispersal; as well as in logistics for cargo delivery, etc.

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DFI and Qisda Synergy Elevates Drone Capabilities

Powered by the Open Standard Module (OSM) QRB812 System-on-Module (SoM), the drone solution was developed in collaboration between the Qisda Smart UAV Business Unit and DFI. With its integrated intelligent software and DFI's OSM-QRB812 computing, the drone solution is capable of smart obstacle avoidance-helping to prevent collisions, enhance navigation, improve operational reliability, and reduce human error. In addition, it supports long-distance transmission, significantly extending the UAV's operational range.
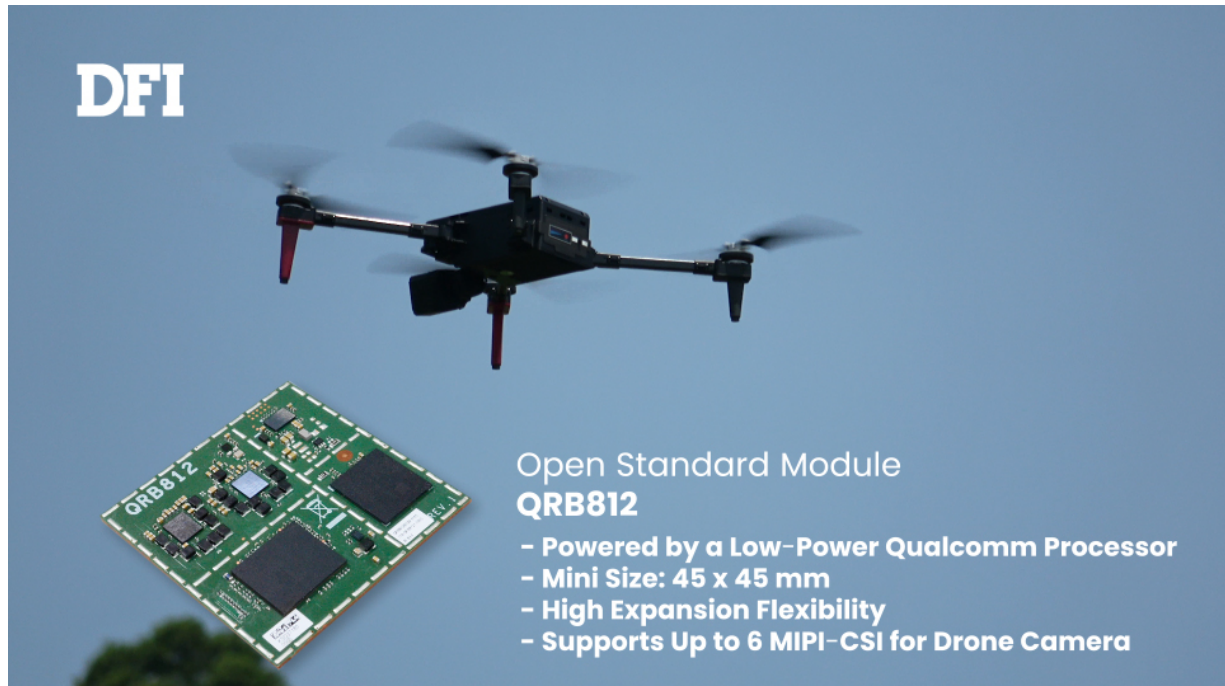
Qisda Drone Solution: Smarter, Faster, More Efficient

During COMPUTEX 2025, the Qisda Smart UAV Business Unit introduced how their Scouting Drone utilized DFI's QRB812 for edge AI integration. The Scouting Drone uses infrared and dual cameras to enable heat and daylight vision. With the edge AI enabled by the QRB812, the Scouting Drone is able to do image recognition and object tracking.

The combined edge AI and vision capabilities transformed the Scouting Drone into an ideal system for use in both day and night time. It can be utilized in night patrols, sea rescue, towers and solar panels inspections, as well as for post-disaster rescue such as earthquakes or to help assist in finding missing hikers.

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DFI OSM System Enables Seamless Aerial Operations

Open Standard Module
QRB812

- **Powered by a Low-Power Qualcomm Processor**
- **Mini Size: 45 x 45 mm**
- **High Expansion Flexibility**
- **Supports Up to 6 MIPI-CSI for Drone Camera**

The OSM form factor enhances UAV applications by offering compact, high-performance embedded computing. With the largest pin-to-area ratio, it maximizes connectivity while minimizing PCB footprint. OSM's edge AI compatibility enables onboard data processing, reducing latency and improving decision-making capabilities. Additionally, its power-efficient design and advanced thermal management help prevent overheating, ensuring stable operation. Since OSM modules are directly soldered onto carrier boards, they provide superior vibration resistance, making them ideal for drones operating in demanding environments.

Optimized for high-demand remote applications such as drones, smart logistics AGVs, robotics, and highway vehicle surveillance; the QRB812 is an OSM module with a compact 45 x 45mm size and can operate at temperatures ranging from -20 to 70°C. Equipped with rich I/O interfaces for communication purposes, the QRB812 is driven by a power-efficient Qualcomm® QRB5165 SoC with Kryo™ 585 CPU, delivering high-performance edge computing with low energy consumption. Purpose-built for next-generation drone technology, it enables on-device AI processing and intelligent perception-driven decision-making—ideal for enabling autonomous flight operations and real-time data interpretation.

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The QRB812 is equipped with six high-speed 4-lane MIPI-CSI interfaces, enabling simultaneous connection of up to six concurrent cameras, including RGB, ToF, and depth sensor which are compliant with MIPI-CSI protocol. With the Qualcomm Adreno GPU 650 which also integrates a powerful Video Processing Unit (VPU), it offers not only stunning graphics and powerful parallel processing, but also hardware-based decoding and encoding for various video codecs.

Thanks to the 8-core Qualcomm® QRB5165 processor (up to 2.84GHz), the QRB812 integrates a highly efficient NPU delivering up to 15 TOPS of AI performance, offering significantly lower power consumption compared to CPU-integrated GPUs. It supports deep learning, computer vision, and neural network tasks, providing efficient on-device AI inference for real-time decision-making. This allows for advanced features such as visual navigation and obstacle avoidance through precise image analysis and path estimation which are critical for autonomous operations.

Connect with DFI to find the best system for your UAV and drone applications.

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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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