

Unleashing Cutting-Edge Smart Farm Systems with Edge AI for Maximizing Food Production

The escalating global population is amplifying the demand for increased food production, compelling the agricultural industry to urgently seek additional labor resources. However, the inherently labor-intensive nature of this industry has confronted persistent challenges related to workforce shortages. Exacerbating this situation are factors such as the aging rural demographic, diminishing interest in agriculture among the younger generation, and declining birth rates in various regions around the world.

To address the pressing issue of labor scarcity, it is becoming more popular to adopt agricultural harvesting robots. Aetina's Smart Farm System, powered by Aetina's AIB-MX22, stands out by providing robust AI performance. Fueled by the NVIDIA Jetson AGX Orin module, the AIB-MX22 achieves up to 275 TOPS, facilitating server-class AI inference at the edge with minimal latency. Featuring built-in M.2 B-Key, M.2 E-Key, and M.2 M-Key, the system accommodates LTE/5G, Wifi/BT, and storage functionalities, respectively.

The inclusion of four PSE ports supports connectivity with four PoE cameras, while the 10GbE port ensures data transfer speeds of up to 10 GB per second, surpassing the traditional GbE port by tenfold. With a wide input power range of 9 to 36 VDC, the AIB-MX22 is well-suited for diverse embedded applications in challenging environmental conditions and climates.

Benefits

- The NVIDIA Jetson AGX Orin module offers up to 275 TOPS and enables server-class AI inference at the edge with low latency.
- Equipped with comprehensive M.2 expansion and LAN ports, AIB-MX22 offers high flexibility and expansion ability, which makes it ideal for various applications.
- Aetina offers one-stop service from project evaluation to after-sales training, which accelerates the harvesting process and optimizes the crop yields.

Results

- Lower workforce overheads
- Higher crop yield
- Robots take up a much smaller space than conventional farming equipment
- Fewer errors in planting seeds, irrigation, sprinkling pesticides
- Lower usage of pesticides

