



Democratizing sports technology: Western Digital's Embedded Flash Drive (EFD) is part of Veo's AI-powered camera

veo

Challenge

Veo is on a mission to make game-changing sports technology accessible to all. To do so, they created a VR-inspired, easy-to-use camera solution that captures the pitch. AI, deep learning, and cloud processing then provide the analysis and livestream capabilities of the game. To process and upload the data streams, Veo was looking for a high-performing but cost-effective industrial-grade embedded flash drive (EFD) for their camera that enables data capture so their AI platform can aggregate and analyze the streams at the edge, but also enable a fast upload to the cloud.

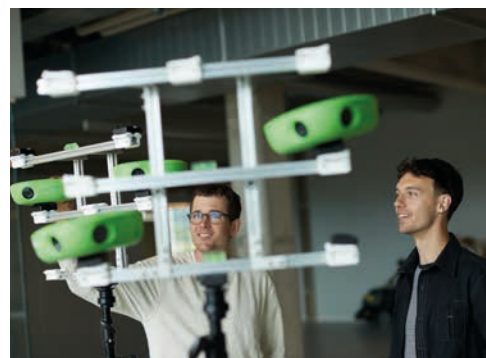
Solution

The high endurance and reliability of the iNAND® CL EM132 commercial e.MMC from Western Digital® withstands heavy workloads and demanding environmental conditions. Featuring a sophisticated NAND memory architecture as well as improved internal features, the solution ensures the needed performance, longevity and endurance for capturing data on the field.

Company Profile: Veo

Today, only one percent of football matches are being recorded and that is at all levels. Yet video is the basis for a variety of different services in sport such as coaching, analysis, live streaming, and scouting.

Veo, a Danish camera manufacturer and analysis platform provider, is making advanced sports technology accessible to all levels of the game through an affordable, easy-to-use AI-powered device. The portable camera allows coaches, players, and parents to record matches and training sessions automatically, while the analysis platform equips them with tools to cut highlights, tag players and create visual learning experiences to enhance player development.



To provide the end customer with high-quality, reliable video recording and content analysis, Veo has developed an edge system from scratch that consists of two lenses, a custom-made motherboard, a cooling system, USB-C™ port for data communication and power delivery as well as microphones, and a custom battery.

The motherboard hosts image signal processors, encoders, bulk storage, and an AI supercomputer. While the lenses provide high-resolution content, the encoders transcode, combine, and compress the incoming video streams to ensure a smooth and fast upload to the cloud. The AI functionalities at device level process data inside the product to enable instant playback and live-streaming capabilities.

Embedded Flash Drives Deliver Proven Performance, Reliability and Endurance at an Affordable Price

The Veo Cam 3 in combination with the Veo software puts user-friendliness, quality, and longevity for the end customer first. To keep the initial cost of the hardware reasonable and make the solution accessible to as many clubs and teams as possible, Veo was looking for a storage solution that would provide the required performance for AI processing while offering durability.

Key Results

Its commercial grade features in combination with its cost effectiveness made the iNAND® CL EM132 commercial e.MMC from Western Digital® the perfect solution for the Veo Cam 3.

“We’ve been working with Western Digital for 4+ years and their embedded storage has been proven reliable in the market and our application, delivering the specs that we need in our temperature range and workload. It was the logical choice for our Veo Cam 3.”

Mathias Bruun Larsen

Hardware Architect at Veo

“Thanks to our longstanding relationship with Veo, we knew what they wanted and needed – an enduring, high-quality solution that delivers low failure rates and longevity to help fulfil Veo’s customer promise”.

Kim Spaten

Sales Manager at Western Digital

The Veo team worked closely with Western Digital to assess the ideal storage solution for their requirements. The two lenses in the Veo Cam 3 record in 4K and 30 frames per second (fps) and use an increased pixel density as well as improved images sensors to work in all weather conditions – starting at -10°C and snow to rain and direct sunlight at 45°C. This adds up to approximately 22GB of data per captured game (including halftime, overtime and setup) that needs to be aggregated, analysed and uploaded to the cloud.

“First and foremost, we were looking for an embedded flash drive that has been proven to work in our system and helps us to deliver our core values at a reasonable price”, says Mathias Bruun Larsen, Hardware Architect at Veo. He continues: “The iNAND® CL EM132 commercial e.MMC provides us with the needed endurance in the most demanding environment conditions.”

The team concluded that an iNAND® CL EM132 commercial e.MMC from Western Digital® with a capacity of 128GB was the ideal solution. It provides the capacity, performance, high-reliability and endurance to withstand heavy workloads and demanding environmental conditions. With its proven operating temperature range from -25°C to 85°C and its improved internal refresh feature, advanced power protection and advanced power immunity, the EFD ensures longevity even in the most extreme areas.

Furthermore, the sophisticated NAND memory architecture brings new levels of density, scalability, and performance. The 3D NAND memory also provides excellent write/erase endurance, improved write speeds and energy efficiency.

Summary

For the Veo Cam 3, the team was looking for a reputable, trusted storage solution that perfectly matched the product’s requirements. With Western Digital, they found a solution that offered high quality and proven longevity at a reasonable price while enabling the company’s analytics and software services for all.



 **Western Digital.**