

Successful ODM (Original Design Manufacturer) project relies on the high degree of mutual trust between the purchaser and the manufacturer, and the designer. The latter's mission must reach all of the former's requirements. From the motherboard to the system infrastructure of a slot machine belonging to a well-known Japan gaming vendor was designed by DFI. Simultaneously, it achieved a substantial cost reduction, special institutional requirements, strict safety regulations, and good heat dissipation. It set a benchmark and must be accomplished for DFI's ODM business.

Region: Japan Industry: Gaming

Application: Slot Machine

Solution: **ODM System Project** 



A slot machine is a gambling platform and can often be seen in casinos or unique entertainment venues. The gameplay is to put "slots" (meaning coins) into the machine, and then different patterns will be randomly selected on the machine's screen. If a connection matches the same or a specific way, the winner will win a prize according to their odds. Due to the low rate of winning bets, there is no return if you enter the tiger's mouth.

Slot machines have been around for more than a hundred years, and they have become the most popular casino game. With the rise of digital electronics, slot machines have evolved from original designs such as cast-iron bodies, mechanical hinges, and joysticks to electronic game machines running on an electronic screen with a random number generator (RNG). Online slot machines are even more popular. In addition to the classic slot game that imitates the physical design, the electronic version is also popular. The latter pays particular attention to the exquisite graphics and stunning special effects. It is called a 3D slot machine.

Modern high-tech slot machines integrate many peripheral devices to provide a better user experience, such as panels, buttons, LED light bars, high-wattage speakers, coin machines, currency counters, change channels, coin collection boxes so on. Usually, these peripheral devices have independent control circuit boards connected to the system motherboard and bring a more complex system architecture and more difficult integration projects. It also increases the overall cost. Therefore, the pursuit of higher system integration to gradually integrate the control circuit board into the system motherboard as best as possible can reduce costs, but this also tests hardware manufacturers' system design capabilities.

In Japan, a well-known game player of market wanted to concentrate on some peripheral devices' control board functions on the system motherboard due to significantly reducing costs. This project is not simple. First of all, there are unique cabling methods for connecting all the peripheral devices to the interface. Planning the optimal board connector

layout and making the circuit board wiring with good signal quality is difficult. Secondly, based on the human consideration for easy maintenance in the future, the Japanese customer has put forward many special requirements for the mechanism's design. For example, electromagnetic compatibility (EMC) must support Class B with a higher threshold, combined with an expandable high-end graphic processing unit (GPU), resulting in heat dissipation problems that have further increased the challenge of fully meeting the customer's requirements.

Jurisdiction BIOS boot flow <u>St</u>orage Devices (On board) Data = Full BIOS ROM SHA256 Hash(D) Hash"(D) (HashData.txt) (SignedHashSignature.txt) **RSA Verify** Data = OS (range: 0 ~ 2G) SHA256 Hash"(D) Hash(D) (StorageSigned (StorageHashData.txt) HashSignature.txt) **RSA Verify** 

DFI eliminates all difficulties and has a mission to complete the design, manufacture, and system integration of the whole machine while fully meeting the rules' strict requirements for the accuracy of the coin-metering measurement. Slot machines also have Jurisdiction BIOS tested and approved by GLI (Gaming Labs International), which verifies the integrity of the BIOS content and storage media through hash functions and public keys, eradicates unauthorized system login behavior, and achieves security without vulnerability.

Successful enterprise with their international brands often maintains some high-quality -research-intensive ODM businesses and maintain strategic partnerships with foreign customers, emphasizing coexistence and co-prosperity cooperation. DFI's mission in the slot machine system project must be determined, sufficient to prove that DFI is trustworthy and become the best priority for companies looking for high-quality ODM partners.

Please click or scan the QR code to fill out an inquiry form if you would like us to contact you.



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DFI Application Story



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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