

Success Story - They Chose Apacer

Challenges

- SSD is sometimes not detected by host PC
- Detection failure happens during boot process

Solutions

- ADC4 SLC
- CF6

Value-added technologies

- **Hardware:**
Standard Apacer SSD fine-tuned with additional resistors and power IC for greater voltage over- and under-protection

The Customer and the Application: High-speed Rail Transportation Systems

Our customer is an experienced transportation system integrator in the high-speed rail industry. The customer is currently in the process of implementing high-speed rail solutions that cover large parts of China.



Challenges

The customer told us about a certain problem they had discovered. Whenever a train booted up its transportation system, there was a chance that the host PC would have trouble detecting the SSD. This didn't happen all of the time, but it happened enough times that the client realized there was the potential for a serious problem.

However, the client knew that Apacer could help them investigate the issue and perhaps come up with a solution. They were right, and after an exhaustive discussion of the issues online and via telephone, an Apacer engineer was en route to the demonstration train that was already undergoing early tests. He gathered data on location, and then reported back to the Apacer headquarters so that our team could begin the analysis process.

Solutions and Technologies

Analysis of the data that the engineer brought back revealed the source of the issue. We discovered that the voltage supplied to the SSD could become unstable when the transportation system booted up. After initializing, the SSD should be supplied a minimum operating voltage within a certain fixed period of time. But in certain cases, the actual supplied voltage took longer to meet the threshold, so the SSD did not power up. In other cases, the supplied voltage might meet the threshold in time, but then dip below it for a few moments.

After some discussion, our hardware team modified the resistor structure in our standard SSD. These allowed the SSD to filter out unsuitable operating voltages, and in most cases these resistors would be enough. But in this case, we also added a redundant power IC to monitor and report on voltage instability. Together, these two powerful protection mechanisms extend the practical operating lifespan of the SSD, no matter how unpredictable the voltage supply might be.

Results and Benefits

After these modifications, our customer was pleased to discover that the SSD functioned much more smoothly. Now, as they continue to expand their operations in China, they keep coming back to us for customized SSDs for their transportation systems. And we've incorporated what we've learned from this case into other systems that can function smoothly even when voltage supplies are unstable.

Additional Support



Longevity

Fixed BOM solution
EOL & LTB notice



Strong customization capabilities

Strong HW/FW
engineering know-how



Service

Real-time and responsive
after-sales service