ultratest
A Restore Technology company

HOW DRIVES ARE REPAIRED ON GENESIS

AND HOW THE LIFE OF THESE DRIVES ARE NO SHORTER THAN NON-FAULTY DEVICES

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In most cases high-quality diagnostics and effective repair methods using proprietary, technological tools can return the drive to a fully operational condition.

Our test system has been developed by professionals in the storage media space with extensive, real world practical experience that has been refined, so that our R&D and software development teams can be regarded as experts in their field. They have a clear understanding of not only how it works, but also why it works in principle and practice, giving our solution a unique place in the market.

The initial design of the repair process used within the Genesis test system was made in such a way that, in most cases, our system can identify the original drive manufacture and its generation (also known as it's Family) to guide the system on the large number of specific requirements needed to test and refurbish the device under test. These requirements could include, amongst other things, known problems, unusual nuances and specially designed workarounds specific to a particular generation of device.

Our test solution can recognize hundreds of the most critical problems for all types of devices in the early stages of testing, including physical issues for instance detecting leaks in modern helium filled drives. All of this gives us the ability to interrupt testing with a corresponding error as early as possible allowing us to reduce the test time for drives that are going to fail.

The process of testing and repair in Genesis is implemented by our "Dynamic Schedules" system, which provides a flexible branching tree approach to adjust the test process based on the constantly changing information available about the device under test. This permits the system to change testing methodology on various data points such as whether it is a Hard Drive or Solid-State Drive. This approach, combined with the exceptional intelligence built into the backend testing part of the system, provides a highly efficient, industry leading, approach.

From the very beginning, our test systems are focused on getting accurate and "real" results with the highest possible efficiency in the shortest possible testing time. Our solution is not just trying to reset or clear the grown defect table (G List) to declare a

drive usable. Instead, we have developed proprietary sophisticated techniques to perform actual repairs using a variety of specially engineered workarounds specific to different manufacturers and generations of devices.

To eliminate any misunderstanding of the criteria for a “good drive” we have built in a system for assessing the quality of drives. Providing a Grade A, B or C based on the settings of the selected schedule that can be adjusted depending on the customers requirement. Our default settings are set so that:

- Grade A is a fully working drive with no errors or defects
- Grade B is a working drive with minimal errors
- Grade C is a working drive with moderate errors

Unless the system is configured by the customer to go beyond the default tolerances anything outside of a Grade C is a failed device.

Our solution monitors and records the results of drives put through the solution (several million to date), allowing us to train the system based on specific data points to match, as closely as possible, the expected performance of a specific drive type. We utilize this data in the system to set the expected performance of devices being tested to ensure that the solution knows in advance of testing progressing what the baseline performance should be of each type of device, including features specific to SMR drives and SSDs).

The statistic from this data also shows that our solution is showing a stable high yield percentage.

It should be noted that the team at Ultratest Solutions have the technical ability and, possibly more importantly, the active desire to engage in failure analysis to study any strange, rare or frequent problems that can occur due to the wide and varying nature of the devices that need to be tested and improve our algorithms and solutions in as short a timeframe as we can.

In conclusion the Ultratest Genesis solution is industry leading, driven by a team that is passionate about driving the product, and testing of storage media devices, forwards to prevent as many good devices being sent to landfill as possible.

Saving the planet, one drive at a time.