

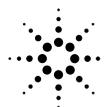
Agilent 6671A/72A/81A/82A/90A System dc Power Supplies

Product Overview



Today's data storage systems can store large amounts of data. With the spread of e-commerce, e-mail, etc. these systems will need to store larger amounts of data at a higher data rate. By 2004 the predictions are that companies will need to store 10 times as much data. In a survey done by Information Week Research 92% of the customers rated the reliability of the data storage systems as the most important factor in their purchasing decision. The systems therefore,

need to be very reliable. Most of these systems will have redundant power systems and batteries, in case of power supply failure or line power failure. The brains of the systems are the boards controlling the disc drives and the data communication. These control boards must be very reliable to transfer the data properly with no errors. Because of the higher data rate and the complexity of these control boards, the power required to test them has been increasing.



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To test these control boards, manufacturers need power sources that are reliable and that also provide protection for these expensive boards. They want to monitor the voltage and current in order to determine component malfunction or devices out of specification. It is cumbersome and not very reliable to use external DMM, switches, shunts and wiring to monitor the voltage and current. In addition, the wiring may introduce unwanted noise. Agilent Technologies power supplies provide these functions internally which simplifies the system and increases overall reliability.

All the power supplies have industry standard SCPI commands. This makes both programming and software documentation easier. Standard drivers for National Instruments Labview and/or Agilent VEE are also available for Agilent power supplies. These drivers can also be used for programming in Visual C++ or Visual Basic.

Agilent power supplies are easy to use on the bench for troubleshooting and offer the same protection features as when they are used in a system. A front panel keypad lets you program the voltage, current, OCP, and OVP. An LCD display provides continuous output voltage and current monitoring. Enunciators on the bottom of the display provide power supply status.

Agilent power supplies are designed to provide high reliability. During the development phase, the power supplies undergo stringent environmental tests, such as 8-day temperature profile. Other tests include humidity, altitude, vibration, shock, ac line tests such as sag, surge interruption, radio frequency immunity & emission. They are also designed and tested to meet worldwide safety, EMC and environmental standards.

dc Power Supplies for Data Storage Testing

The dc power supplies used for testing data storage control boards need to be highly reliable. They should be easily programmed via a PC/controller, from the front panel and/or with an analog voltage. This flexibility is required because the same supply may be used in an automated system, on the bench for troubleshooting or for special tests using the analog programming input.

Typical Test set-up for Control Boards

Types of tests:

1. Functional Test –
To insure that the control boards are functioning properly
2. Long term burn-in test –
This test may be done inside an environmental chamber, and usually takes days to complete the test. This test will weed out infant mortality and weak components.
3. Repair & troubleshooting stations

On all the different test stations, test and production engineers want the same setup so that they have consistent and traceable results.

The power supplies must provide protection such as Overvoltage and Overcurrent in order to protect the expensive DUT.

Agilent Technologies Power Supplies provide all the above. In addition, they provide output voltage and current readback. Status is also provided for another layer of protection. For example; if the power supply changes operating state from constant voltage to constant current, an SRQ is issued to the controller which in turn can shut off the system (depending on the program). A third layer of

protection is provided, independent of the controller, Remote Inhibit. An external, TTL low signal can turn the power supply off. Most of all, Agilent power supplies provide high reliability.

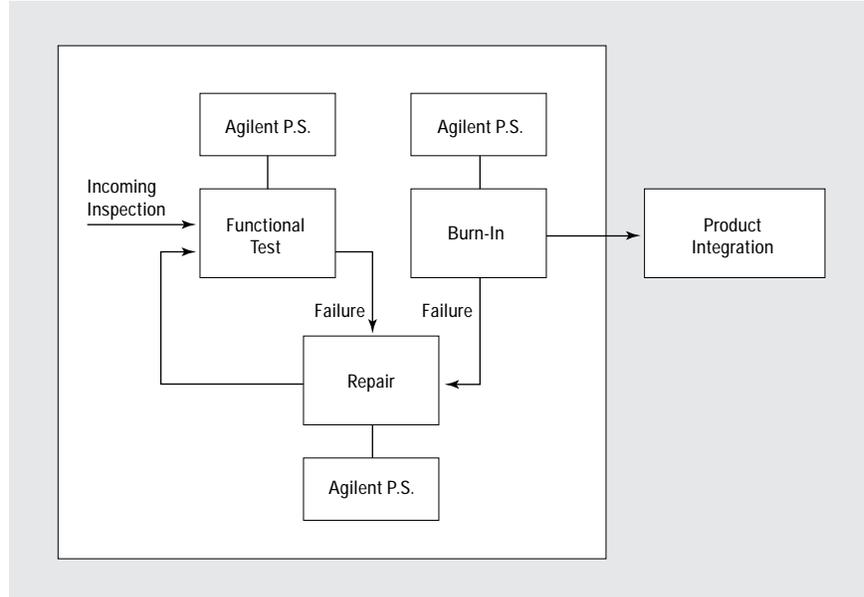
As mentioned above, the reliability of the system is of utmost importance to the customers, therefore the power supplies, the dc/dc converters and the UPS need to be very reliable.

Agilent Technologies, in addition to providing high power supplies to test the control boards, has a wide range of power supplies, loads and ac sources to test the power components of the system.

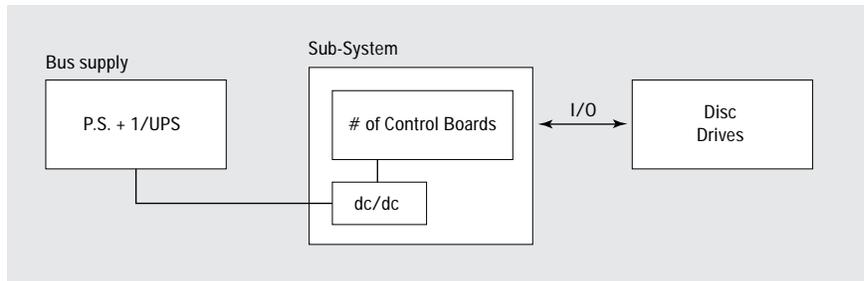
A typical data storage system is powered by a power supply from the ac line with redundancy to provide the bus voltage and an interrupted power supply (UPS) for ac line protection. The dc/dc converters provide the necessary voltages required for the analog and logic circuits on the control boards.

The following models can be used as single supplies or in parallel for higher current.

Model	6671A	6672A	6681A	6682A	6690A
Rated Voltage	0 to 8 V	0 to 20 V	0 to 8 V	0 to 21 V	0 to 15 V
Rated Current	0 to 220 A	0 to 100 A	0 to 575 A	0 to 240 A	0 to 440 A



Typical Test process for Control Boards



Data Storage System – Block Diagram

Agilent Technologies electronic loads may be used to test the bus power supplies and the dc/dc converters. Agilent Technologies dc sources may be used to power the dc/dc converters and test them by simulating extreme bus voltages (input voltage to the dc/dc). Using the electronic loads, the dc/dc converter can be tested by simulating the actual loading that occurs during different phases of the data transfer. Agilent Technologies ac sources may be used for testing the UPS.

Electronic Loads

Model	N3302A	N3303A	N3304A	N3305A	N3306A
Volts	60 V	240 V	60 V	150 V	60 V
Current	30 A	10 A	60 A	60 A	120 A
Max. Power	150 W	250 W	300 W	500 W	600 W

AC Sources

Model	6811B	6812B	6813B
Power	375 VA	750 VA	1750 VA
rms voltage	300 V	300 V	300 V
rms current	3.25 A	6.5 A	13 A

Agilent Technologies can provide you with all the equipment needed to test the power components and to power the whole system reliably and with confidence.

For more information regarding Agilent's dc power supplies visit our Web site at: <http://www.agilent.com/find/power>

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise

"Our Promise" means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

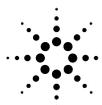
Your Advantage

"Your Advantage" means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, out-of-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

Get assistance with all your test and measurement needs at: www.agilent.com/find/assist

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