

Steven Wells Editing Sample

This demonstrates my skills with an excerpted content sample before and after I edited it.

This document contains materials from a client project to update base material and integrate content from additional contributors. Below and the two following pages contain material in their original form (as its authors sent it to me, color highlights and all.) This is the **before** material.

Following the source content, the three-page excerpt of **after** material contains the same content after editing as I submitted it back to the client at the project's conclusion.

1.1.1 Plan of Record FRU-able Power Supply Testing

The plan of record for testing FRU-able power supplies is as follows (does not apply to non FRU-able power supplies):

- System test: DUT must be tested with all power supplies installed. This ensures the unit operates properly in the standard pizza box configuration and the fully redundant director configurations. For units with removable power supplies, a hot plug test, where each supply is fully disengaged/re-engaged, must also be conducted during this test step.
- Run-in: DUT must be tested in the minimum non redundant power supply configuration. For pizza boxes this is typically with one of the two power supplies and with directors this is typically with one of the four power supplies. The purpose is twofold. First this ensures that the system will work in its minimum / fall back condition in the field (i.e., 1 or 2 power supplies fail). Second, this provides the most stressful condition which can be applied in the factory with the goal of catching a defective lot of power supplies, should they escape from the power supply manufacturer. This does not present an over stress situation as our power supply systems are designed to be fully redundant. The minimum power supply configuration is more than enough to run the product for life (if there are no quality issues). For example, Pulsar system power requirement is 120Wmax, 80W typical. Pulsar power supply is rated to run max continuous power at 210W. Although our philosophy is to apply as much stress as possible during our factory process (by running the minimum configuration), the stress is minimal compared to the stress applied at the P/S manufacturer.
- ORT. Power supplies in ORT will be run in the same configuration as run-in.
- Final Test/FCA: The DUT must run through POST with the power supplies, which will ship with the unit, installed.

*** DC Power Supplies POR ***/
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The plan of record for testing DC power supplies applies to all products using DC supplies (pizza box and director class products).

- Chocolate test process, system test (ST) and final quality audit (FQA) are the main two factory tests that should be leveraged for insuring proper functionality of the DC power supplies.
- Factory test must insure the following functions/steps:
 - o DC power supply can power up DUT
 - o DUT and DC supply MUST report “healthy/ok/good” status
 - o DC supply must be recognizable by the DUT
 - o DC supply power and status LED status must be operating properly according to the DC supply specs
 - o Functional test MUST read SEEPROM content, UUT info to be pre-programmed correctly according to the supply top level assembly number.
 - Supply Serial and Part numbers
 - Vendor info
 - Power supply to report proper air-flow direction when applicable
 - Any other info related to the supply such as power rating, voltage, etc..
- DC power supply to be exercised with max load (max load can be achieved using minimum supplies to operate the DUT). This is required to ensure system will work in its minimum or full back condition in the field. MFG test stress philosophy is to apply as much stress as possible during our factory process; this type of stress is minimal compared to the stress applied at the power supplies manufacturer.....

//////// Supplier process //////////

BRCD P/S manufacturers will submit Monthly manufacturing yield reports with expected yield goals :
Process test Yield goals expectations after second building.

SMT ICT 99.85 % Burn-in 99.985 %

Hi-pot 100% Final Functional 99.85 %

Manufacturer will provide monthly yield reports with corrective Actions for top three Pareto failures per test station, which are Burn-in, Final test, and final Inspection. Functional yields, ORT log are expected to show improvement each quarter.

Burn In for first 2000 units for 24 hours. If no failures occur in Burn In, submit a request for B/I duration reduction after perform a Wei-full analysis and get Brocade approval.

BI Condition follow up below requirement:

Temperature: 50+/- 3°C

Duration: 24 hours

Loading: >90% full loading

Power Circle: 40 min on, 10x on/off 1 min total 10 min ref.

ORT:

PS manufacturer will implement ORT plan as customer requirement and trace the result, provide the test report monthly and Improve product reliability per CLCA rule if any failure happened during the ORT. the essential requirement of this test are:

1) Sample Size/Frequency: 2 units/week, 1month<8 units.

Duration is 4weeks(7days/week) continuously running.

- Hot Plug test should be performed on UUT, system should be able to recognize DC supply removal and insertion during the hot-swap operation. (remember that 2nd supply must be present and powered up for the hot plug operation to be practical and meaningful)

The following pages contain the corresponding content **after** the editing process, which included discussion with the project manager and original content authors.

The final formatting reflects the visual style of the base document. However, the base document contained only the appearance of a formatted structure. Headings, numbered paragraphs, bulleted items, graphics annotations, and all other content existed only as internal *Normal* style with manually applied formatting. Any changes to chapter order or other section reordering would have left all numbering in a complete mess—a recurring problem for the project manager.

At the beginning of the editing process, I created internal style formatting that matched the visual appearance of the manual formatting. I set all content into these established styles. This provided internal document stability, simple options for global editing, and trivial effort when rearranging content, while maintaining automatic chapter and paragraph renumbering. Thus, much of my *value-add* does not appear within a simple textual reproduction of the content.

Note that I did not convert the numerous passive voice instances to active voice. To do so would have introduced a voice inconsistency with the bulk of the existing material, beyond my authorized influence. Further the material contains descriptive rules rather than a set of procedural steps, so imperative mood does not fit, either.

5.3 Power Supply Testing

5.3.1 Plan of Record FRU-able Power Supply Testing

The plan of record for testing FRU-able power supplies is as follows (does not apply to non-FRU-able power supplies).

System Test

DUT must be tested with all power supplies installed. This ensures that the unit operates properly in the standard pizza box, and the fully redundant director, configurations. For units with removable power supplies, a hot plug test, where each supply is fully disengaged/re-engaged, must also be conducted during this test step.

Run-in

DUT must be tested in the minimum non-redundant power supply configuration. For pizza boxes, this is typically with one of the two power supplies, and for directors, this is typically with one of the four power supplies.

The purpose is twofold. First this ensures that the system will work in its minimum / fall back condition in the field (that is, if 1 or 2 power supplies fail). Second, this provides the most stressful condition that can be applied in the factory with the goal of catching a defective lot of power supplies, should they escape from the power supply manufacturer. This does not present an over-stress situation because our power supply systems are designed to be fully redundant. The minimum power supply configuration is more than enough to run the product for life (if there are no quality issues.) For example, the Pulsar system power requirement is 120 W max, 80 W typical. The Pulsar power supply is rated to run max continuous power at 210 W. Although our philosophy is to apply as much stress as possible during our factory process (by running the minimum configuration), the stress is minimal compared to the stress applied at the power supply manufacturer.

ORT

Power supplies in ORT are run in the same configuration as run-in.

Final Test/FCA

The DUT must run through POST with the power supplies installed that will ship with the unit.

The plan of record for testing FRU-able power supplies is as follows (this does not apply to non-FRU-able power supplies).

Prior to implementing the power supply test strategy, the manufacturing test engineer and SBE should review the end-to-end power supply process to ensure that testing is performed upstream at the power supply manufacturer where possible, and that there are no gaps.

5.3.2 DC Power Supply Test Process

The plan of record for testing DC power supplies applies to all products using DC supplies (for pizza box and director class products).

Note: The 25% value below, as a process transition point, was selected as a rule of thumb. This directs product with low DC volume to the defined process. When the volume is higher, the team should reconvene to solidify the test plan.

5.3.2.1 DC Test Process for Volume < 25%

The Brocade Vanilla test process (BFT, ESS, ST, RI, ERT, ORT, FCA, FQA) will continue to leverage AC supplies as the main vehicle for providing system power.

The Chocolate (FCA, FQA) test process ensures that the DC supply type is recognizable by the system OS, and that DUT reports healthy status.

5.3.2.2 DC Test Process for Volume > 25%

A DC supply must be tested in a fully loaded configuration with all power supplies installed. For a DC supply to report healthy status, it must be recognized as a DC supply by the system and display a green status LED. The system test must be able to identify the power supply vendor, the serial number, and the part number as pre-programmed according to the supply top-level assembly number.

Hot Plug Test

The Hot Plug test must be performed on the UUT during system test. The system should be able to recognize DC supply removal and insertion during the hot-swap operation. The second supply must be present and powered up for the hot plug operation to be practical and meaningful.

The Brocade design DC power source should be used for all purposes of the manufacturing DC power supply test.

Run-in Test

Consider Run-in as a standard test flow that will depend on business and safety considerations.

DC Power Supply FRUs

The FRU DC power supply test should include all functional test steps reported above.

5.4 Packet Loss Definition and Pass/Fail Criteria

5.4.1 Packet Loss Definition

Packet loss is the failure of one or more transmitted packets to arrive at their destination.

5.4.2 Packet Loss Causes

A number of factors can cause packet loss:

- Drop because of channel congestion
- Corrupted packets
- Bit synchronization, distortion
- Faulty networking hardware
- Faulty network drivers or normal routing routines
- Signal-to-noise ratio
- Distance between the transmitter and receiver

5.4.3 Packet Recovery

Some network transport protocols, such as TCP, provide reliable packet delivery. In the event of packet loss, the receiver asks for retransmission, or the sender automatically resends any segments that have not been acknowledged. Although TCP can recover from packet loss, the retransmission of missing packets decreases the connection's throughput. The TCP protocol is designed with a slow-start connection strategy so that excessive packet loss causes the sender to throttle back and stop flooding the bottleneck point with data.

Appendix E DC Power Supplies – Supplier Process

Brocade power supply manufacturers will submit monthly manufacturing yield reports with expected yield goals.

Process test yield goals expectations after second building:

SMT ICT 99.85 % Burn-in 99.985 %

Hi-pot 100% Final Functional 99.85 %

Manufacturer will provide monthly yield reports with corrective actions for top three Pareto failures per test station, which are burn-in, final test, and final inspection. The functional yields ORT log is expected to show improvement each quarter.

Burn-in the first 2,000 units for 24 hours. If no failures occur in Burn-in, submit a request for Burn-in duration reduction after performing a Wei-full analysis and getting Brocade approval.

Burn-in condition follow up requirements:

Temperature 50°C ± 3°C

Duration 24 hours

Loading > 90% full loading

Power Circle 40 minutes on, 10× on/off for 1 minute for a total 10 minutes ref.

ORT

Power supply manufacturer will implement the ORT plan as a customer requirement and trace the result, provide the test report monthly, and improve product reliability per the CLCA rule if any failure occurred during the ORT.

The essential requirements of this test are:

- Sample Size/Frequency 2 units/week, 1 month < 8 units.
- Duration 4 weeks (7 days/week) running continuously.