PSL

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Preparing for your first SEMI F47 Certification

Power Standards Lab's approach to SEMI F47 testing is that we're here to help. We show up as fellow engineers, not as enforcers, and we want to help you find a way to get your equipment to pass.

You can help us help you by making the following preparations. Don't worry if you can't do all of them – if at all possible, we will find a way to make things work.

1. Make sure the EUT (equipment under test) works. The whole idea of SEMI F47 is to verify that the EUT works properly when hit by voltage sags. If it doesn't work with normal power, we can't test for SEMI F47 compliance.

2. Have all the supplies and utilities that you need. During testing, we need to operate the equipment in its "most sensitive process state". So if the EUT needs wafers, or gas flow, or coolant flow, or CDA, make sure they're available during testing. Also, if there are fuses in the EUT, make sure you have spares.

3. Someone needs to operate the EUT. Test time is expensive, and it's a pity to waste it standing around waiting for someone to come and get the EUT started (or re-started after it crashes, or after we cycle its power).

4. Have the documentation available. There are often minor problems with the EUT during testing. If you have schematics readily available, and someone who can translate between the schematic and the physical EUT, we can help you find and solve any problems during testing. We bring a multi-channel data acquisition system with ±1000V and ±25V channels – if you expect problems with power supplies, you might want to prepare some test points where we can clip on (we also bring a wide variety of test clips and test leads).

5. Make preparations to insert the F47 sag generator. We bring a sag generator that gets inserted between your AC source – typically a wall-mounted circuit breaker or socket – and your EUT. So we will need to have some safe, convenient way of breaking your power cord. We bring a

variety of connectors, but you can speed things up by preparing a junction box (see PSL Application Note 2001-01, "SEMI F47 Connections" – you can download it from our web site at http://www.PowerStandards.com/download.htm). But don't go to a lot of trouble – it often makes more sense to just cut and re-join the power cable.

6. Make sure we have access to power shut-off locations. Sometimes the main circuit breaker is in a locked room – make sure you have a key!

7. Identify any special requirements: unions, safety inspections, etc. We will be connecting and disconnecting AC power lines throughout the testing. Find out your company's requirements, and prepare for them. Sometimes a union electrician is required; sometimes special lock-out-tag-out procedures must be followed; etc.

8. Make sure you have the following available: (a) Table for the sag generator, capable of supporting 100 lbs.; (b) at least two convenience outlets within 6 feet of the sag generator location, or an extension cord; (c) a spool of extra power conductor wire – depending on the EUT, anything from 18AWG to 4AWG; (d) a rolling cart to move the sag generator from the car to the test location – the cart can sometimes be used as a table for the sag generator.

We will bring the sag generator, including the data acquisition system; standard hand tools and meters; a wide variety of power and signal connectors, junctions, clips, test leads; a digital camera; and a job notebook.

Typically, the test day goes through the following steps: orientation, documentation review, test plan, verification that EUT is operating properly, safety review, sag generator connection, initial go/no-go testing, diagnostic testing if required, reporting review, and packing/shipping.

Please call us at ++1 (510) 658-9600 if you have any questions – the better you're prepared, the easier it is for us to help you!