8802-3/802.3 REVISION REQUEST 1162

DATE: 30th March, 2005
NAME: Yair Darshan
COMPANY/AFFILIATION: PowerDsine
E-MAIL: yaird@powerdsine.com

REQUESTED REVISION:
STANDARD: IEEE Std. 802.3af-2003
CLAUSE NUMBER: 33.2.8.8
CLAUSE TITLE:

PROPOSED REVISION TEXT:

Paragraph 33.2.8.8 Output current—at short circuit condition is:
The power shall be removed from the PI within TLIM, as specified in Table 33-5, under the following conditions:

a) Max value of the PI current during short circuit condition.
b) Max value applies for any DC input voltage up to the maximum voltage as specified in item 1 of Table 33-5.
c) Measurement to be taken after 1ms to ignore initial transients.
See Figure 33C.4 and Figure 33C.6.

SHOULD BE:

The power shall be removed from the PI within TLIM, as specified in Table 33-5, under the following conditions:
a) Max value of the PI current during short circuit condition.
b) Max value applies for any DC output voltage up to the maximum voltage as specified in item 1 of Table 33-5.
c) Measurement to be taken after 1ms to ignore initial transients.
d) During short circuit condition, for PI voltages above 30V, the ILIM requirement is as specified in Table 33-5, item 10.
e) During short circuit condition, for PI voltages between 10V and 30V, the minimum ILIM requirement is 60mA and the maximum requirement is as specified in Table 33-5, item 10.

During short circuit condition, for PI voltages between 0V and 10V, the minimum ILIM requirement is 0mA and the maximum requirement is as specified in Table 33-5, item 10.

See Figures 33C.4, 33C.6 and 33C.6.1.

Add the following notes after 33.2.8.8-e:

Notes:

1. Items d and e in 33.2.8.8 allows implementation of foldback current limit type in which ILIM requirement is decreased if Vport is decreased below pre specified value.

2. Short circuit condition definition in IEEE802.3af is a case in which the port voltages is dropped below normal operating voltages as defined by table 33-5 items 1 and 2 due too load fault conditions that exceeds table 33-5 item 8"

Add the following note text after 33.2.8.5-e:

Note: items d and e in 33.2.8.5 allows implementation of foldback current limit type in which Iinrush requirement is decreased if Vport is decreased below pre specified value.

Change 33.2.8.5 item e from:

e) During startup, for PI voltages between 10V and 30V, the minimum IIINRUSH requirement is 60mA.
See Figures 33C.4, 33C.6.

To:
e) During startup, for PI voltages between 10V and 30V, the minimum IIINRUSH requirement is 60mA.
During startup, for PI voltages between 0V and 10V, the max IIINRUSH requirement is as specified by Table 33-5, item 10.
See Figures 33C.4, 33C.6 and 33C.6.1.

Change the following in Annex 33C clause 33C.1.7:

1. Add figure 33C.6.1 right after figure 33C.6.
2. In Figure 33C.7 upper part: add a box labeled "variable load" in series to S1
3. Replace test procedure PSE-7 item 3 text from:
3) Verify that Iport is within the limits shown in Figure 33C.4

With

3) Change the variable load in order to verify that Iport is within the limits of Figures 33C.4 and 33C6.1. Please note that the variable load type (resistive, constant voltage or other) depends on different PSE implementations.

Clause 33C.1.4 PSE-4:

Change item 3 in PSE 4 from "Verify that ..in Figure 33C.4" to "Verify that ..in Figures 33C.4 and 33C.6.1"

Change the note in the last two sentences in clause 33C.1.4 after item 6 in PSE-4:
From: "Test setup……expected per Figure 33C.4."
To: "Test setup……expected per Figure 33C.4 and 33C.6.1."

RATIONALE FOR REVISION:

1. A text is missing although it can be understood by integrating data from other parts in the standard.

We allowed in the standard the option of using foldback current limit in both startup mode and short circuit condition.
While the specifications for foldback current limit are clear from paragraph 33.2.8.5 items d and e, the reader needs to do some detective work to figure out that similar specification are apply for short circuit condition by looking at figure 33-7 which describes Inrush current and short circuit as "detect short" and by looking at figures 33-4 (right corner with "Vport>30V" label) and figure 33-6 (at the upper part
stated 30V<Vpor<Vnominal) that specifies the requirements for inrush current
during startup and ILIM during short circuit for Vport>30V which is the boundary line between conventional current limit and foldback current limit as specified by 33.2.8.5 items d and e and should be the similar in 33.2.8.8.

2. Paragraph 33.2.8.5 item e was updated to reflect the addition of figure 33C.6.1 and to clarify the current levels for the range between 0V to 10V.

3. In 33.2.8.8 item b it should be "DC output" per Table 33-5 item 1.

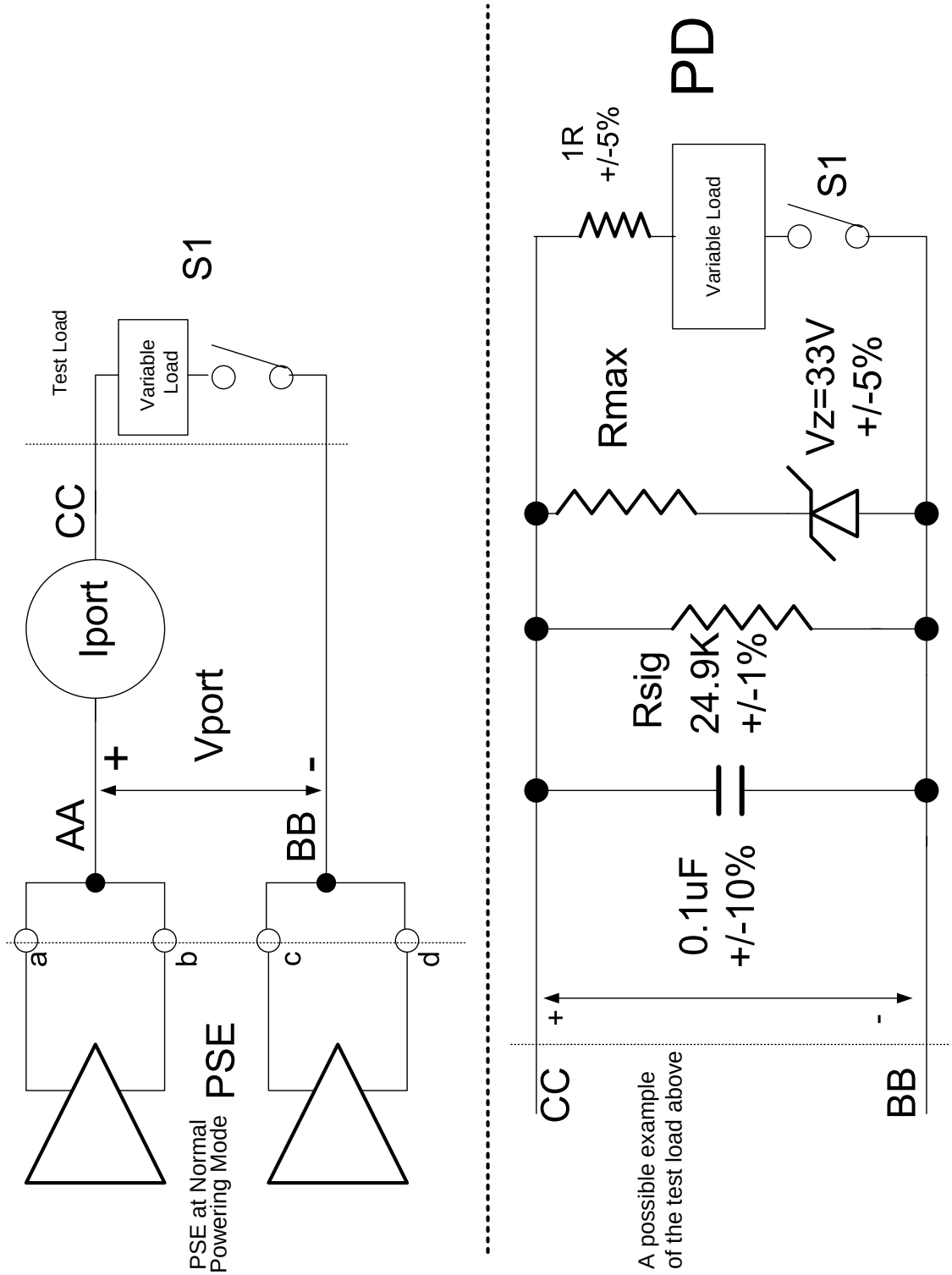
4. Annex 33C updated in order to supply information of how to test the above requirements. It extends the test flexibility according the implementation being used.

Foldback current limit is optional in the standard.

IMPACT ON EXISTING NETWORKS:

No impact. It is optional.

Please attach supporting material, if any		
Submit to:- Bob Grow, Chair IEEE 802.3		
E-Mail: Bob.Grow@intel.com		
+------- For official 802.3 use ----------+		
| REV REQ NUMBER: 1162 |		
| DATE RECEIVED: 30th March, 2005 |		
| ~~EDITORIAL~~/TECHNICAL |		
| ACCEPTED/DENIED |		
| BALLOT REQ'D YES/~~NO~~ |		
| COMMENTS: 16-Nov-05 Ver: D2.1 Status: B |		
For information about this Revision Request see -		
http://www.ieee802.org/3/maint/requests/revision_history.html#REQ1162		



New Figure 33-7

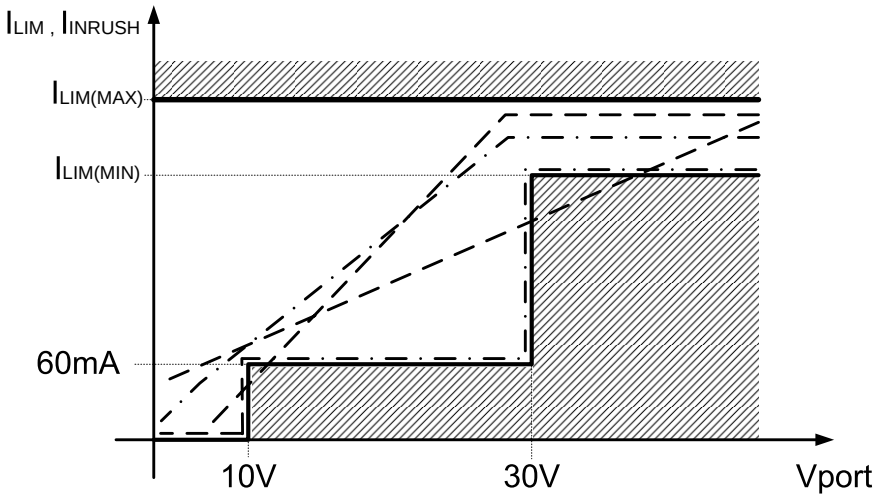


Figure 33C.6.1 – I_{LIM} and I_{INRUSH} requirements as function of Vport at startup and short circuit conditions

New Figure 33C-6.1