

8802-3/802.3 REVISION REQUEST

DATE: 2015-01-12
NAME: GEOFF THOMPSON
COMPANY/AFFILIATION: GRACASI S. A. /LINEAR TECHNOLOGY
E-MAIL: thompson@ieee.org

REQUESTED REVISION:
STANDARD: 802.3-2012
CLAUSE NUMBER: 33.1.4
CLAUSE TITLE: Type 1 and Type 2 system parameters
PROPOSED REVISION TEXT:

See attached sheet for proposed new text.

RATIONALE FOR REVISION:

Move as much of the cabling specification to cabling documents as possible. (This RR was entered as a tracking mechanism for Thompson Comment #59 against P802.3REVbx/D2.0 during initial WG ballot. Resolution of this comment was given over to P802.3bt as they will have CI 33 open.)

IMPACT ON EXISTING NETWORKS:

There should be no impact on existing networks.
This is a documentation change only.

Please attach supporting material, if any
Submit to: - David Law, Chair IEEE 802.3
and copy: - Adam Healey, Vice-Chair IEEE 802.3
At: - E-Mail: stds-802-3-maint-req@ieee.org

----- For official 802.3 use -----
REV REQ NUMBER: 1271
DATE RECEIVED: 13th January 2015
EDITORIAL/TECHNICAL
ACCEPTED/DENIED
BALLOT REQ'D YES/NO
COMMENTS:

For information about this Revision Request see -
http://www.ieee802.org/3/maint/requests/revision_history.html

33.1.4 Type 1 and Type 2 system parameters

A power system, consists of a single PSE, a single PD and the link section connecting them. A power system is characterized as Type 1 or Type 2 by lowest type number of the PSE or PD in the system, see Table 33–1. These parameters define not only certain performance characteristics of the system, but are also used in calculating the various electrical characteristics of PSEs and PDs as described in 33.2 and 33.3.

Table 33–1—System Parameters vs. System Type

System Type (Lowest type of PSE & PD)	Nominal highest current per pair (I_{cable}, A)	Channel Pair-set maximum DC loop resistance (R_{chan}, Ω)	Minimum Cabling Type³
Type 1	0.35	20	Twisted-pair Cabling per 14.4 and 14.5 (Class D recommended)
Type 2	0.6	12.5	Class D (ISO/IEC 11801:1995)

³Class D recommended.

I_{cable} is the current on one twisted pair in the multi-twisted pair cable. Two twisted pairs are required to source I_{cable} —one carrying (+ I_{cable}) and one carrying (– I_{cable}), from the perspective of the PI.

It should be noted that the cable references use “DC loop resistance,” which refers to a single conductor. This clause uses “DC pair loop resistance,” which refers to a pair of conductors in parallel. Therefore, R_{Ch} is related to, but not equivalent to, the “DC loop resistance” called out in the cable references.

33.1.4.1 Cabling requirements

The supply of power over the data connection is intended to operate with no additional requirements to the cabling that is normally installed for data usage. This is approximately true but may require some further attention. Power at Type 1 power levels may be transmitted over all specified premises cabling without further restrictions. Higher power levels may require heavier gauge conductors than are found in Class C/Category 3 cabling and (more uncommonly) in some lighter gauge Class D or better cable. The requirements for Type 2 are met by Category 5 or better cable and components as specified in ANSI/TIA/EIA-568-A

Under worst-case conditions, Type 2 operation requires a 10 °C reduction in the maximum ambient operating temperature of the cable when all cable pairs are energized at I_{cable} (see Table 33–1), or a 5 °C reduction in the maximum ambient operating temperature of the cable when half of the cable pairs are energized at I_{cable} . Additional cable ambient operating temperature guidelines for Type 2 operation are provided in ISO/IEC TR 29125 [B49]20 and TIA TSB-184 [B60].