

Contact
John D'Ambrosia
717.986.5692
Email – john.dambrosia@tycoelectronics.com

This data is being provided to the industry for analysis for the IEEE 802.3ap Backplane Ethernet Task Force. For further information on this data, please see dambrosia_01_0904 available at -
http://grouper.ieee.org/groups/802/3/ap/public/sep04/dambrosia_01_0904.pdf

Disclaimer: While Tyco Electronics has made every reasonable effort to ensure the accuracy of the information provided herein, Tyco Electronics does not guarantee that it is error-free, nor does Tyco Electronics make any other representation, warranty, or guarantee that the information is accurate, correct, reliable or current. Tyco Electronics reserves the right to make any adjustments to the information contained herein at any time without notice. Tyco Electronics expressly disclaims all implied warranties regarding the information contained herein, including but not limited to any implied warranties of merchantability or fitness for a particular purpose.

Note 1 – This data is representative of the implementation that was measured only. Backplane channel behavior is highly sensitive to implementation, which includes board materials, trace geometry information, connector pin out, layer connection, use of stub removal techniques, such as backdrilling or blind/buried vias, etc.

Note 2 - Crosstalk measurements are representative of the specific ATCA test cases only. Crosstalk may vary depending on the pinout that is being considered by the user. Assumptions regarding crosstalk behavior of the Z-PACK HM-Zd should be reviewed with Tyco Electronics prior to any simulations to permit assessment of the validity of the assumption.

Note 3 – The backplanes and line cards were designed independently of each other. Furthermore, the SMA line cards were designed for another pinout. Hence, there is no optimization to limit the overall total skew of the system.

This data was taken by the University of New Hampshire InterOperability Laboratory (UNH-IOL) during the week of September 13, 2004. The test setup consisted of the following –

- Agilent 8720ES with N4418A test set ---
 - Also known as the Agilent N1951A 20GHz Physical Layer Test System (S/N US0020201)
- Calibrations are SOLT (short open load thru) to 26GHz cal set into 50ohm loads at the end of SMA cables.
- No de-embedding of the SMA's or line cards were attempted / included.
- Equipment Settings done in accordance with the latest guidelines from the IEEE 802.3ap Channel Ad Hoc at the time of testing, except where noted -
 - Step Size - 10 MHz
 - IF BW – 300 Hz
 - Launch Power - -5 dBm
 - Averaging – was not supported with equipment / software

```
Port 1 ----> |           | ----> Port 2
              |   DUT   |
Port 3 ----> |           | ----> Port 4
```

For further information regarding this testing, please contact
UNH – IOL
Contact – Bob Noseworthy
603-862-4342 {Office}
603-862-0205 {10GEC Lab}
10 Gigabit Ethernet Consortium Manager
Email - ren@iol.unh.edu

For further information regarding the Z-PACK HM-Zd connector, please contact:

Tyco Electronics

Contact – Bob Hnatuck

717-592-4168

Email – rhnatuck@tycoelectronics.com

Tyco Electronics would like to express its gratitude to the following individuals for making the availability of this data possible

- UNH-IOL- Bob Noseworthy and Jeff Lapak
- Kaparel Corporation – Jacques Lourde and Robert Jardon
- Tyco Electronics Printed Circuit Group – John Vesce and Jimmy Sheffield

Revision Record

- Initial release – 9/16/2004
 - Case #1 – not included
- Release – 9/21/04
 - Case #1 added
- Release – 10/5/04
 - Data supplied to IEEE 802.3ap for distribution via IEEE website.