

## Minutes IEEE P802.3cy Greater than 10 Gb/s Electrical Automotive Ethernet PHY TF AdHoc meeting April 20, 2021

Prepared by Natalie Wienckowski

### Proposed Agenda:

Title	Presenters(s)	Affiliation(s)
Agenda	Natalie Wienckowski (ad hoc Chair)	General Motors
TF Chair's Comments	Steve Carlson	High Speed Design, Robert Bosch GmbH, Ethernovia
<a href="#">Insertion Loss Limit Proposal for 802.3cy</a>	Eric DiBiaso Jonathan Silvano de Sousa Natalie Wienckowski Thomas Mueller Stefan Gianordoli Erwin Koeppendoerfer Chris DiMinico Bert Bergner Rich Boyer Christian Neulinger Harsh Patel	TE GG - Austria GM Rosenberger GG Group LEONI Kabel GmbH MC Communications/Panduit TE Aptiv MD Elektronik Molex
<a href="#">Channel Capacity Calculator V1.4</a>	Ragnar Jonsson	Marvell
P802.3cy To-do list	Natalie Wienckowski	General Motors
Closing Remarks	Steve Carlson	High Speed Design, Robert Bosch GmbH, Ethernovia

See [adhoc webpage](#) for agenda deck and presentations

### Agenda/Admin Natalie Wienckowski as ad hoc chair:

Meeting began at 10:05 am ET.

## Introductions & Affiliations.

### Presented file: [cy Task Force adhoc agenda a 04 20 21.pdf](#)

1. Reviewed the Attendance information related to the ad hoc.
2. Displayed patent slide deck and asked if any participant had not read the IEEE-SA Patent Slides slide set, none responded.  
Call for Patents was made at 10:10 am Eastern Time, none responded
3. Displayed the IEEE-SA Copyright policy slide and asked if any participant had not read the IEEE copyright slide set, none responded.
4. Displayed the IEEE-SA Participation slide and reviewed it.
5. Reminded participants to indicate full names and employer/affiliation for the meeting minutes.

Instructions for subscribing to the reflector may be found at <http://www.ieee802.org/3/cy/reflector.html>. If you cannot subscribe to the reflector for some reason, and need additional assistance please contact the Task Force chair.

**Chair's comments:** None at this time.

## Presentations/Discussion:

### Presentation: [Insertion Loss Limit Proposal for 802.3cy \(Eric DiBiao, TE, et. al.\)](#)

Eric presented the results of two meetings held last week to come to an agreement on this IL proposal. The contributing participants are listed above in the agenda and are listed on the first page of the presentation. Eric started with a history of proposed IL limits and measurement data that has been shared with the group. He explained how these were used to determine a reasonable limit line for IL for an 11m cable with up to 5m at 105C and the remaining 6m at 85C. The proposed IL limit line includes a slight roll off above the 7 GHz assumed Nyquist rate. There is a question as to whether the maximum frequency for the limit line should be 9 GHz, 10 GHz, or another value.

There is a preference from some to have a second equation for IL between Nyquist and Fmax as trying to put it all in one equation can shift the IL for the frequencies at and below Nyquist. More work needs to be done to investigate if this can be done in one equation or if a second equation is needed.

Do we need to know the PCB IL to determine what the link segment IL can be?

The proposed IL limit line is on slide 17.

This limit line is about the best IL with current cable manufacturing capabilities.

There is a question as to whether a suck-out above Nyquist is acceptable or not. This can only be determined if s-parameter files, or other files with phase information, are provided for the PHY vendors to simulate with.

## Presentation: [Channel Capacity Calculator V1.4](#) (Ragnar Jonsson, Marvell)

Ragnar presented an update to the CCC. He updated the calculator to correct some errors. He added a new cable model based on the previous presentation.

## Presentation: [P802.3cy To-do list usage](#) (Natalie Wienckowski, General Motors)

The to-do list was reviewed and updated. Participants are urged to review the list for topics they can support and for missing topics. Please send a message to the reflector with requested changes to the list.

The current list can be found on this page: [To Do spreadsheets](#)

## Closing Discussion

It would be helpful to have s4p files on cables. Also helpful is IL and RL with magnitude and phase or real and imaginary if s4p is not available. Please collect data with the characteristics defined in [Link Segment Measurements](#).

Thanks to everyone who has provided content and presentations.

The meeting on the Google Calendar has disappeared a couple of times. We don't know the reason. Please email Steve if you notice the meeting notice is missing or corrupted as soon as you see it.

Meeting adjourned at 11:21 AM ET.

## Attendees (snapshot of participants in meeting, email)

First	Last	Affiliation
Brett	McClellan	Marvell
Chris	DiMinico	MC Communications, PHY-SI, SenTekse / Panduit
Christian	Neulinger	MD Elektronik
Clark	Carty	Cisco
Dan	Kennefick	Daikin America
Dave	Hess	Cord Data
Eric J	Chang	Intel Corporation
Eric	DiBiaso	TE Connectivity
Erwin	Köeppendorfer	Leoni Kabel GmbH
George	Zimmerman	CME Consulting / ADI, APL Group, Cisco Systems, CommScope, Marvell, SenTekSe
German	Feyh	Broadcom

<b>First</b>	<b>Last</b>	<b>Affiliation</b>
Harsh	Patel	Molex
Haysam	Kadry	Ford
Hossein	Sedarat	Ethernovia
Jae-yong	Chang	Keysight
Jim	Graba	Broadcom
Jonathan	Silvano de Sousa	GG - Austria
Kambiz	Vakilian	Broadcom
Keisuke	Kawahara	FURUKAWA ELECTRIC
Louise	Yi	FIT
Makoto	Nariya	Sony
Manabu	Kagami	NITech (Nagoya Institute of Technology)
Mike	Tu	Broadcom
Natalie	Wienckowski	General Motors
Nobuyasu	Araki	Yazaki
Pavel	Zivny	Tektronix
Peter	Wu	Marvell
Ragnar	Jonsson	Marvell
Rich	Boyer	Aptiv
Roland	Preis	MD Elektronik
Ryan	Petrarca	TDK
Shao-Chieh	Yu	FIT
Shaowu	Huang	Marvell
Stefan	Gianordoli	GG Group
Steve	Carlson	High Speed Design, Robert Bosch GmbH, Ethernovia
Taiji	Kondo	MegaChips
Thomas	Müller	Rosenberger
Yoshihiro	Niihara	Fujikura Ltd.
<b>TOTAL</b>	<b>38</b>	<b>Attendees</b>