

**Unapproved Meeting Minutes  
IEEE P802.3bq Rx CMNR Ad Hoc**

**December 3rd, 2014  
Prepared by Pete Cibula**

**Meeting Agenda:**

- 1) Roll call - Record attendance, attendees' names and affiliations
- 2) Reminder of IEEE patent policy: [www.ieee802.org/3/patent.html](http://www.ieee802.org/3/patent.html)
- 3) Housekeeping:
  - a) Review & approve meeting agenda.
- 4) New business for the December 3<sup>rd</sup> ad hoc meeting as follows:
  - a) Review relevant content from prior study group/task force work and/or new contributions with discussion.
  - b) Discuss work in process and tentative schedule for bringing those efforts into the ad hoc.
- 5) General Discussion and meeting wrap-up
  - a) Next steps/future meetings

**The 3<sup>rd</sup> meeting of the P802.3bq Receiver Common-Mode Noise Rejection (Rx CMNR) Ad Hoc was called to order at 9:35 AM Pacific Standard Time.**

- 1) Participants were asked to register their attendance by email; responses are reproduced in the attendance record at the end of these minutes.
- 2) Participants were reminded of the IEEE's patent policy. All in attendance acknowledged the policy; as a reference, anyone not familiar with said policy is directed to the URL above.
- 3) Houskeeping & general updates:
  - a) The agenda was reviewed with those in attendance. The updated was accepted without opposition.
- 4) New business:
  - a) Participants reviewed the ad hoc's "Areas for Discussion & Investigation" and list of "Things Needed" as presented [cibula\\_01\\_1022a.pdf](#).
    - Participants confirmed that establishing the relationship between and correlating the results of any Clause 98 Rx CMNR assessment and the corresponding standards-based system immunity requirement is an appropriate focus of the ad hoc's work.
    - Participants also noted that the intent of any Rx CMNR assessment is not to raise the bar above the related system immunity requirements, but to provide quick feedback for PHY designers, component providers and system implementers with a test that is predictive of real-world EMC performance. This assessment should comprehend some of the more

significant known variables in EMC testing, including DUT/cable orientation, antenna polarizations, etc.

- Participants discussed the fact that while each individual element of the PHY-to-PHY channel contributes to overall immunity to noise induced by common-mode sources, the more appropriate measure is to evaluate the overall performance of the end-to-end system. Some elements may merit further consideration – cable shielding effectiveness and coupling attenuation were discussed as examples – but there was general agreement that defining additional requirements on individual cabling, connector and isolation elements that are beyond those already specified for those elements has limited value.
- Participants then discussed potential work and work-in-progress to be brought into the ad hoc. Items mentioned (and estimated date for the contribution) included:
  - (1) A study of representative PHY sensitivity to common-mode noise, first using the cable clamp methodology and then using an EMC chamber (clamp test summary January 7, 2015; chamber summary TBD)
  - (2) A survey of shielding/screening issues associated with shielded cabling (December 17, 2014)
  - (3) A review of cabling coupling attenuation and transfer impedance specifications and test methods (TBD)
  - (4) Further fact-finding associated with the Clause 40 cable clamp test, notably getting more background on the existing calibration limits for common-mode and differential-mode noise in order to define appropriate limits for 40GBASE-T, potentially and retrospectively for 10GBASE-T, and opportunistically for other and future BASE-T technologies.

5) Meeting wrap-up - The next meeting was scheduled for December 17<sup>th</sup>, 2014 at 9:30 AM Pacific Standard Time.

**The P802.3bq Rx CMNR Ad Hoc meeting was adjourned at 10:36 AM Pacific Standard Time.**

**Meeting Attendance (From e-mail acknowledgements and on-line participant list)**

<b>Name</b>	<b>Employer</b>	<b>Affiliation (if different)</b>
Brian Buckmeier	Bel Fuse, Inc.	
Dave Chalupsky	Intel	
Pete Cibula	Intel	
Chris DiMinico	MC Communications	
Thuyen Dinh	Pulse	
Dave Estes	Spirent	
German Feyh	Broadcom	
Mike Good	Berk-Tek LLC	
Brett McClellan	Marvell	
Victor Renteria	BelFuse/TRP	
Masood Shariff	Commscope	
Dieter Schicketanz	University of Science, Reutlingen	
Tom Souvignier	Broadcom	
Ron Tellas	Panduit	
Bob Wagner	Panduit	
Peter Wu	Marvell	