Reduced Twisted Pair Gigabit Ethernet PHY

IEEE 802.3 Ethernet Working Group
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Reflector and Web

• To subscribe to the RTPGE reflector, send an email to:  
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• Task Force web page URL:  
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IEEE P802.3bp Task Force
January 2013

• Met in Phoenix Thursday and Friday, January 24 and 25, 2013
• ~50 people in the room
• First Task Force meeting
• Confirmed Steve Carlson as IEEE P802.3bp TF Chair
• Channel ad hoc
  • Conference calls December and January
  • Survey data on all cable types used in vehicles
  • Working with UNH-IOL to establish test procedures
• EMC ad hoc
  • Conference calls December and January
  • Created EMC work plan
  • Establish limits
• Channel and EMC ad hoc co-ordinate work
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- **Modeling and measurement technique for EMC**
  - Mehmet Tazebay, Broadcom and 28 supporters
  - Emission transfer functions defined with a stripline test setup compliant with CISPR 25, Ed. 3
  - The emission transfer function depends on the channel (cable, connector etc.)
  - It is independent of particular modulation and detector type (peak, quasi peak or average) which allows a fair comparison of various modulation schemes using the same channel.
  - A differential TX spectral mask is obtained based on emission transfer function mask and emission limit line. The most limiting emission level of 15dBUV was considered for this analysis.
  - **TX Mask suggests that 1Gbps solutions exist for UTP cables.**
Other presentations
  - Alien XTALK and channel balance
    - Scenarios from automotive side
    - Measurement and analysis from 802.3 side
  - Impact of 1-pair vs. 2-pair (non PHY)
    - Multi-pin connector pin assignments
  - Echo-cancelation power
    - Echo-cancelation power for 10GBASE-T four-pair at 100m is $\sim 3W$
    - Echo-cancelation power for 1Gb/s, single-pair at 15m is $\sim 10mW$. 
Goals for the week

- Meet Tuesday, Wednesday 9:00AM – 6:00PM and Thursday morning (if needed)
- Automotive link segment ad hoc
- EMC ad hoc
- Presentations on channel, channel test fixtures, EMC
- Plan for next meeting
Thank you!