802.3bp RTPGE Task Force

EMC ad hoc report
January 2013
Phoenix, AZ

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RTPGE EMC ad hoc

- Chartered during September 2012 meeting to develop EMC models and measurements
- Conference calls held in December and January
- Communications via RTPGE/802.3bp reflector

- Thanks to those who attended the ad hoc calls

First teleconference

- **Held December 17th**
  - EMC ad hoc workplan presentation from the co-chairs, presented by Gavin Parnaby
    - Presentation was sent to the reflector 13th December

    http://www.ieee802.org/3/RTPGE/email/msg00184.html
  - Discussion regarding noise measurements from Thomas Hogenmueller
- Minutes were sent to the reflector

  http://www.ieee802.org/3/RTPGE/email/msg00186.html

Workplan summary

- **First phase**
  - Agree on ingress and egress model methodology
  - Solicit contributions with data to build models
  - Build consensus on ingress and egress models
  - Build consensus on egress limits
- **Second phase**
  - Build consensus on tests for susceptibility, using ingress models
  - Develop text for standard

Second teleconference

- Held January 18th 2013
- Discussed Stefan Buntz's slides re: 'Possible inputs from automotive industry'
  http://www.ieee802.org/3/RTPGE/email/msg00198.html
- Discussion of presentations to be submitted at Phoenix interim meeting

- Relatively small attendance due to travel etc.
  - Next time we will not hold ad hoc so close to the face-to-face meeting

Teleconferences – future plans

- Planning to hold teleconference calls every 2 weeks following January meeting
  - Meeting time TBD

Tasklist – next steps

	Task	Notes	Immediate tasks	Note
1	**Define operating environments**	Is there just one environment (automotive with a single defined cable) or several?	Y	Need contributions
2	**Define ingress model methodology**	Should we separate channel transfer function and noise sources? Or directly model background noise levels? Or both?	Y	Likely both; need contributions
2a	Define ingress block diagram			Needs 2)
	answer 2b-2f for each environment			
2b	Define noise sources			Needs 2)
2c	**Define channel transfer function measurement/modeling methodology**	Coordinate with channel ad hoc	Y	see tazebay_01242013_rtpge.pdf for an initial proposal
2d	**Define background noise measurement methodology**		Y	see buntz draft presentation http://www.ieee802.org/3/RTPGE/email/msg00198.html
2e	Propose background noise level for PHY development			Needs 2d
2f	Define impulse noise model			some discussion regarding Thomas Hogenmueller's data on ad hoc conference call, waiting for contribution
3	**Define egress model methodology**		Y	Some coverage in tazebay_01242013_rtpge.pdf, to be refined after further discussion
3a	**Block diagram for PHY to emissions**		Y	See tazebay_01242013_rtpge.pdf
3b	Define measurements to be made			
4	Define end-to-end EM ingress model (based on 2)			
5	Define end-to-end EM egress model (based on 3)			

Items for discussion

- Definition of operating environments
- Reach consensus on noise modeling
  - Background noise and external noise sources with channel transfer function?
- Further definition on background noise measurement methodology
  - Measurement parameters, modes
- Follow up on tazebay_01242013_rtpge.pdf

December attendees

Gavin Parnaby, Marvell
Stefan Buntz, Daimler
Gary Yuko, TE Connectivity
Ronnie Sanford, Commscope
Jens Wuelfing, TE Electronics
Thomas Mueller, Rosenberger
Mehmet Tazebay, Broadcom
Todd Herman, Comscope
Rich Boyer, Delphi
Todd Herman, Commscope
Xiaofeng Wang, Qualcomm
Thomas Hogenmueller, Bosch
Iain Ballingall, The Cable Clinic / Linkz Industries
George Zimmerman, CME/Commscope