



IEEE EMC Society
Technical Committee 4 – EMI Control
<http://emcs.org/committees/tc04/index.html>
Meeting Minutes

Place: Shaw Convention Center, Ottawa Canada

Date: 27 July 2016

1 Welcome & Introductions

The meeting called to order at 1203 by Mr. John Kraemer, TC-4 Chair. The Chair briefly described the requirements for membership vs observer, for the sake of correctly signing the attendance sheet. Attendees introduced themselves. The attendance sheet was passed around for signatures; it is attached (Appendix A).

2 Review of Draft Agenda

Reviewed and approved without changes

3 Approval of the Aug 19, 2015 Meeting Minutes

http://www.emcs.org/committees/tc04/reports/tc4minutes2015_08.pdf

Minutes from the 2015 meeting in Dresden, Germany were reviewed and accepted without changes.

4 Review of TC-4 Charter and Membership Criteria

Mr. Kraemer read the TC-4 Charter and described the purpose of the TC. He also reviewed the requirements for TC membership:

- Attend one (1) meeting of the TC every two (2) years, or comparable participation.
- Review assigned papers in support of the yearly EMC Symposium(s).

The current TC-4 membership list is attached (Appendix B). It includes attendance information with respect to past TC-4 meeting, to include the August 19, 2015 meeting. It also notes which members are willing to review papers for the next EMC Symposium

Two questions were asked inquiring if TC4 was the correct place for discussion:

- 1) Is TC4 the correct committee to handle PCB design?
 - Due to the large scope of PCB design it would overlap with TC10, the specific scope of the work would determine which TC would be appropriate.

2) Does TC4 deal with wire coupling?

- It is determined that if the discussion was based on the model or analysis of wire coupling then it would fall under the range of TC4.
- If the discussion is based around signal integrity then it would fall under the TC10 category.

5 Review of the Committee Membership

The current officers are:

- Chairman: John Kraemer
- Vice-Chairman: Ross Carlton
- Secretary: William Wantz

Committee members who are willing to review papers are requested to provide an updated resume to aid in distributing papers for review.

6 Review of the Committee Website

Mr., John Kraemer reviewed the status of the TC-4 web site. The web has been updated since the last meeting. It includes the draft minutes from the Dresden meeting in 2016 as well as the agenda.

ACTION: TC-4 secretary will continue to update the TC-4 web site. [In Process]

7 TAC Performance Guidelines for Technical Committees

TC-4 performance scores were in good standing according to the TAC meeting on 7/25/2016. The TC continues to score well due to the number of technical papers reviewed and the acceptance of TC-sponsored workshops and tutorials.

8 Program of Work Discussion

Current works

- P2716 - Guide for the Characterization of the Effectiveness of Printed Circuit Board Level Shielding
 - Headed by Mr. Davy Pissoort
- P2715 - Guide for the Characterization of the Shielding Effectiveness of Planar Materials
 - Headed by Mr. Alpesh Bhobe
- P1302 - Guide for the Electromagnetic Characterization of Conductive Gaskets in the Frequency Range of DC to 40 GHz
 - Headed by Mr. Davy Pissoort

- P2710 - Electromagnetic Shielding Performance of Enclosures for Portable Electronic Devices
 - Headed by Mr. Alistair Duffy
- P299.1- IEEE Draft Standard Method for Measuring the Shielding Effectiveness of Enclosures and Boxes Having All Dimensions between 0.1 m and 2 m
 - Finished in 2014

9 Subcommittee Update

9.1 SC1: Grounding and Bonding ~ closed in 2015

9.2 SC2: Gaskets

Absorbed into the IEEE-STD 1302-2008 revision group in 2015

9.3 SC3: Materials

Mr. Mark Montrose, the chair of this committee, gave an update on the recent activities.

- Mr. Mark Montrose lead a workshop in Santa Clara, Ca in May of 2015
- A workshop was proposed for Dresden in August of 2015 but was not accepted
 - The scope of the workshop was worked into the debugging workshop in Dresden

10 Summary of 2016 Symposium Activities (Chair)

Mr. Kraemer reviewed the TC's activities in support of the 2016 IEEE EMC Symposium in Ottawa. The TC plans to support the Symposium in the following ways:

- Reviewed 28 technical papers, 17 were accepted
 - 7 accepted first round, 7 were rejected
 - 14 needed second review
 - 10 accepted papers and 4 rejected
 - 61% acceptance rate
- Held annual meeting.
- Chaired 4 Technical Sessions

11 Plans for 2016 Symposium in Washington DC

Mr. Kraemer reviewed the TC's activities in support of the 2017 IEEE EMC Symposium in Washington DC. The TC plans to support the Symposium in the following ways:

- Review papers.
- Hold annual meeting.
- Chair Technical Sessions.
- Sponsor at least one Session, Workshop or Tutorial. Suggested activities were as follows:

- A workshop organized by Mr. Montrose on the topic of “Properties of Materials.”
 - The workshop will consist of about 4 speakers with a 20-30 minute discussion followed by open session
 - Topics covered by this workshop should include
 - P.C.B. materials and their properties
 - Absorbers
 - Conductive plastics
 - Buried capacitance in materials
 - **ACTION ITEM** Write proposal for the workshop, with speakers due by Jan 1, 2017 (Mr. Mark Montrose)

- “Filter Design” tutorial lead by Mr. John Kraemer
 - Topics covered by this tutorial should include
 - How they Work
 - Material Selection
 - Transient condition
 - Effects of a filter on stability
 - Use of a filter with audio frequency susceptibility
 - Trouble shooting
 - **ACTION ITEM** Write proposal for the workshop, with speakers due by Jan 1, 2017 (Mr. John Kraemer)

- A workshop on the topic of “System Design”
 - Topics covered by this workshop should include
 - Interactions between components
 - **ACTION ITEM** Write proposal for the workshop, with speakers due by Jan 1, 2017 (Mr. Huadong Li)

12 Election of Officers, if needed

The TC4 officers have been in their position less than the two year rotation time and none needed to excuse themselves from the position. No new election is needed.

13 New business

No new business was suggested to discuss.

Closing

Meeting was adjourned at 1315

Minutes submitted by: William Wantz, Secretary, TC-4 (William@Spira-emi.com)

APPENDIX A July 27, 2016 TC4 Meeting Attendance

TC4 Membership List 25 May 2016 & 27 July 2016 Attendance

NAME	AFFILITATION	EMAIL	WILLING TO REVIEW PAPERS? (NOTE 1)	TC-4 MTG ATTENDANCE (NOTE 2)	JULY 27, 2016 ATTENDANCE	MEMBER OR OBSERVER
Archambeault, Bruce	IBM	bruce.arch@ieee.org	Yes*	12, 15S		
Bull, Christian	Schlegel	christian.bull@schlegelemi.com	No	13, 14, 15S, 15D	<i>[Signature]</i>	M
Berger, Phil	Harman/Becker Automotive	bergerphi@mst.edu		12, 13, 14		
Burnham, Karen	Ford Motor Company	karen.burnham@gmail.com	Yes*	13, 15S	<i>[Signature]</i> ✓	M
Carlton, Ross	National Instruments	ross.carlton@ieee.org	Yes	12, 13, 14, 15S, 15D	<i>[Signature]</i>	M
Crowder, Michael	IBM	michaelc@us.ibm.com		13, 14		
Davis, Bob	Lockheed Martin	robert.h.davis@lmco.com	Yes*	12, 15S		
Demharter, Robert	Würth Elektronik	Robert.Demharter@we-online.de	No	15D		
Faraji, Parisa	Graitech Int'l	parisa.faraji@graftech.com		12, 13, 14		
Fenical, Gary	Laird Technologies	gary.fenical@lairdtech.com	No	12, 13, 14, 15S, 15D		
Gren, David	ARC Technologies	dgreen@arc-tech.com		14		
Todd Hubing	Clemson University	hubing@clemson.edu	Yes*	14, 15S, 15D		
Inman, David	Chomerics	dinman@parker.com	No	13, 14, 15D	<i>[Signature]</i>	M

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NAME	AFFILITATION	EMAIL	WILLING TO REVIEW PAPERS? (NOTE 1)	TC-4 MTG ATTENDANCE (NOTE 2)	JULY 27, 2016 ATTENDANCE	MEMBER OR OBSERVER
Kerns, Donald	Dayton T. Brown	drkerns@ieee.org		12, 14		
Kraemer, John	Rockwell Collins	jkraeme@rockwellcollins.com	Yes*	12, 13, 14, 15S, 15D	✓	M
Kunkel, George	Spira	george@spira-emi.com		12, 13, 15S	✓	M
Larrabee, David	NIST	david_a_larrabee@yahoo.com	Yes	15S*		
McCallum, Ian	Graitech Int'l	ian.mccallum@graftech.com		14		
McInerney, Mike	IEEE	mkmcinerney@ieee.org	Yes*	15S,		
Monsen, Monrad	Oracle	monrad.monsen@oracle.com	Yes	15S	<i>[Signature]</i>	M
Montrose, Mark	Montrose Compliance	m.montrose@ieee.org	Yes*	12, 13, 14, 15S	<i>[Signature]</i>	M
O'Connor, Fin	Alion	foconnor@alionscience.com	Yes*	12, 13, 15S	<i>[Signature]</i>	M
Pissoort, Davy	KU Leuven	davy.pissoort@kuleuven.be	Yes	13, 14, 15S, 15D	<i>[Signature]</i>	M
Roch, Anne	TU Eindhoven	a.Roch@tue.nl	Yes*	15D		
Scully, Bob	NASA	robert.c.scully@nasa.gov	Yes*	15S		
She, Brian	Laird Technologies	brian.she@lairdtech.com		12, 13, 14		
Steffka, Mark	General Motors	mstefka@ieee.org	Yes*	15S		
Tazi, Aziz	Transport Canada	Aziz.tazi@tc.gc.ca		14		

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NAME	AFFILIATION	EMAIL	WILLING TO REVIEW PAPERS? (NOTE 1)	TC-4 MTG ATTENDANCE (NOTE 2)	JULY 27, 2016 ATTENDANCE	MEMBER OR OBSERVER
Wantz, William (Will)	Spira Mfg	William@Spira-emi.com	No	15S, 15D	✓	M
Wegrzyniak, Pawel	Laird Technologies	Pawel.wegrzyniak@lairdtech.com		14		
Williams, Kimball	IEEE	k.williams@ieee.org		14		
Zeng, Hua	Hitachi Automotive	hua.zeng@hitachi-automotive.us	Yes	12, 15S		
Ed Hare	ARRL	w1rfi@arrl.org	Yes	—	✓	O, but willing to renew
Rafik Stephanian	ITG ELECT	ITG RAFIKS@ITG-ELECTRONICS.COM		—	✓	MEMBER
Paul Rosensteel	Mantech International 2 US Coast Guard	paul.rosensteel@mantech.com				OBSERVER
SHAFIE, JAMAL	UTC Aerospace Systems	jama@shafii@utas.utc.com	Yes		✓	member
Huadong Li	Mstex	huadong.li@mstex.com	Yes		✓	member observer
GHANEH, ALI	JPL	ALI.R.GHANEH@JPL.NASA.GOV			✓	Member
Mike Oliver	MAJR Products Corp	emi@majr.com	Yes		✓	member
Chris Semanson	R.F.A	csemanson@gmail.com	Y			

NOTES:
 (1) * indicates member completed round 1 and round 2 reviews for Ottawa Symposium.
 (2) 15S indicates Santa Clara TC-4 meeting, 15D for Dresden meeting attendance.

APPENDIX B

TC4 Membership List 20 AUGUST 2015

NAME	AFFILITATION	EMAIL	WILLING TO REVIEW PAPERS? (NOTE 1)	TC-4 MTG ATTENDANCE (NOTE 2)
Archambeault, Bruce	IBM	barch@us.ibm.com	Yes	12, 15S
Berger, Phil	Missouri University of Science & Technology	bergerphi@mst.edu	Yes	12, 13, 14
Brull, Christian	Schlegel	christian.brull@schlegelemi.com	No	13, 14, 15S, 15D, 16
Burnham, Karen	Northrop Grumman	karen.burnham@gmail.com	Yes	13, 15S, 16
Carlton, Ross	National Instruments	ross.carlton@ieee.org	Yes	12,13, 14, 15S, 15D, 16
Crowder, Michael	IBM	michaelc@us.ibm.com		13, 14
Davis, Bob	Lockhhed Martin	robert.h.davis@lmco.com	Yes	12, 15S
Demharter, Robert	Wurth Elektronik	Robert.Demharter@we-online.de	No	15D
Faraji, Parisa	Graftech Int'l	parisa.faraji@graftech.com		12, 13, 14
Fenical, Gary	Laird Technologies	gary.fenical@lairdtech.com	No	12, 13, 14, 15S, 15D
Ghaneh, Ali	JPL	Ali.R.Ghaneh@JPL.NASA.gov		16
Grrren, David	ARC Technologies	dgreen@arc-tech.com		14
Todd Hubing	Clemson University	hubing@clemson.edu	Yes	14, 15S, 15D
Inman, David	Chomerics	dinman@parker.com	No	13, 14, 15D,16
Kerns, Donald	Dayton T. Brown	drkerns@ieee.org		12, 14
Kimmel, William	Kimmel-Gerke Assoc.	bkimmel@emiguru.com		14
Kraemer, John	Rockwell Collins	jgkraeme@rockwellcollins.com	Yes	12, 13, 14, 15S, 15D, 16
Kunkel, George	Spira	george@spira-emi.com		12, 13, 15S, 16
Larrabee, David	NIST	david_a_larrabee@yahoo.com	Yes	15S
Li, Huadong	Molex	Huadong.Li@Molex.com	Yes	16
McCallum, Ian	Graftech Int'l	ian.mccallum@graftech.com		14
McInerney, Mike	IEEE	mkmcinerney@ieee.org	Yes	15S,
Monsen, Monrad	Oracle	monrad.monsen@oracle.com		15S, 16
Montrose, Mark	Montrose Compliance	m.montrose@ieee.org		12, 13, 14, 15S, 16
O'Connor, Fin	Alion	foconnor@alionscience.com	Yes	12, 13, 15S, 16
Oliver, Mike	MAJR Products Corp.	EMI@MAJR.com	Yes	16
Pissoort, Davy	KU Leuven	davy.pissoort@kulueven.be	Yes	13, 14, 15S, 15D, 16
Roch, Anne	TU Eindhoven	a.Roch@tve.nl	Yes	15D
Scully, Bob	NASA	robert.c.scully@nasa.gov	Yes	15S
Shafii, Jamal	UTC Aerospace Sys.	Jamal.Shafii@utas.utc.com	Yes	16
She, Brian	Laird Technologies	brian.she@lairdtech.com		12, 13, 14
Steffka, Mark	General Motors	msteffka@ieee.org		15S



NAME	AFFILITATION	EMAIL	WILLING TO REVIEW PAPERS? (NOTE 1)	TC-4 MTG ATTENDANCE (NOTE 2)
Stepanian, Rafik	ITG Electronics	RafikS@ITG-Electronics.com		16
Tazi, Aziz	Transport Canada	Aziz.tazi@tc.gc.ca		14
Wantz, William (Will)	Spira Mfg	William@Spira-emi.com	No	13, 14, 15S, 15D, 16
Wegrzyniak, Pawel	Laird Technologies	Pawel.wegrzyniak@lairdtech.com		14
Williams, Kimball	IEEE	k.williams@ieee.org		14
Zeng, Hua	Hitachi Automotive	hua.zeng@hitachi-automotive.us	Yes	12, 15S

NOTES:

- (1) * indicates member reviewed papers for Ottawa Symposium.
- (2) 15S indicates Santa Clara TC-4 meeting, 15D for Dresden meeting attendance.