

UK GTEM User Group

Minutes of the meeting held at Measurement Technology Ltd on 15th November 2006

Present

Roger Dixon (RD)	Sponsored by Aeroflex Ltd [Chairman]
Ian Alderman (IA)	Consultant [Secretary]
John Wombwell (JW)	EMC Hire
Howard Chetwin (HC)	MTL
Farquhar Galbraith (FG)	The EMC Centre (Paisley) Ltd
Richard Marshall (RM)	Consultant
Neil Coote (NC)	Nokia
Tim Hague (TH)	EMV
Steve Cobb (SC)	Aeroflex

Apologies

Michael Davies	HMGCC
Martin Wiles	ETS Lindgren
Richard Neyton	Apollo
Ivan Yallup	Ampy Automation
Stuart Bright	Echelon
Andy Perkins	Schaffner EMC
Alan Hutley	Nutwood UK Ltd
Martin Alexander (MA)	NPL
Joe Wilkinson	The EMC Centre (Paisley) Ltd
Derek Barlow	DB Technology Ltd
Eddie Veater	UKAS
Martin Wright	BT
Angela Nothofer	Nottingham University

1. Chairman opens meeting

The Chairman (RD) opened the meeting and welcomed all attending.

2. Apologies

Apologies were noted. Referring to the apologies given he mentioned that Martin Alexander had raised the issue of the frequency of the GTEM UG meetings and it was agreed to time the next meeting to the availability of NPL's program of work when this is published.

3. Mailing List

The ML was circulated for changes. RD stated that about one third of the members attend the meetings and suggested that the other two thirds could be contacted to find out their views to see if they wish to continue to be involved or disconnected from the group. It was generally agreed in the meeting that the responsibility for contacting those members currently not attending could be divided up around the table.

4. Minutes Of The Last Meeting

The minutes of the last meeting were circulated on the 26th July 2006. A post meeting note was added to the last minutes at item 7 ref RM's paper is now downloadable from his web site. www.design-emc.co.uk with this change the minutes were accepted.

5. Matters Arising

- 'EMC Work Book' the chairman brought 18 copies to the meeting for disposal. The books are now 11 years old but if any members would like a copy (free) then please contact the chairman.
- Web Site – the costs for space and registration are £41-22 and these will recur every two years. John Wombwell kindly agreed to fund this for the group.
- Three papers were circulated from NPL with reference to revisiting high frequency (>1GHz) measurements.
 - (i) *'The influence of cables on the uncertainty of EMC radiated emission measurements above 1GHz.'*
 - (ii) *'A method to minimise emission measurement uncertainty of electrically large EUT's in GTEM cells and FARs above 1GHz.'*
 - (iii) *'GTEM three position E-Field formulation'*

With regard to paper (ii) Nokia are orientating their phones to maximise a particular frequency and then do the formal tests on the worst orientations. They were using Schaffner s/w and these results compare well with FAR measurements.

The papers show and experience suggests that when measurements are needed >1GHz then rotation of the EUT is needed to ensure that the narrow lobes are picked up.

How best can users put together information from these papers to the standards bodies? Discussion of problems associated with the frequency break at 1GHz, ie., whether one process can be used, or if it has to be split into above and below.

Reverb chambers are not without their own problems especially paddle rotation time/frequency.

RM discussion about MA's paper (ii) and the conclusion about whether the cable is or is not more like an RF antenna – RM felt that this remained to be proved.

- Angela Nothofer – Nottingham University 3 year work program
Looking initially for examples of cable layouts from typical EUT's. Request made at last meeting for information on cable layouts used in GTEM cells by users. Aeroflex had prepared details.

6. Web Site

HC has constructed the GTEM UG's web site and comments were invited from around the table for improvements/changes. After discussion a list of changes were put forward. ETS Lindgren will have dimensions of GTEM's available, and TH will obtain this data. Andy Perkins could do the same for Schaffner.

RM will assist HC to get the web site link put on the IET web site and provide another calculator. TH will also put a link to our web site on EMV's web site.

A vote of thanks to Howard for the work he has put into establishing the group's web site.

7. JTF Papers

- IEC CISPR A TC77-JTF Emission and immunity testing in TEM waveguides. – membership of Joint Task Force on TEM Waveguides
- List of papers that the committee has worked on – this is available on the York EMC website www.emc.york.ac.uk/temjtf/

- From the IEC web site the maintenance cycle of documents for IEC61000-4-20 am1 Ed. 1.0 showing the current stages of the cycle from approval to publication by 2009.
- IEC CISPR A TC77-JTF Emission and immunity testing in TEM waveguides. – General Changes to IEC61000-4-20. January 2006 – new chapter added 5.1.3 on ‘Calibration of Fields’
- IEC CISPR A TC77-JTF Emission and immunity testing in TEM waveguides. – subject: An example of the field calibration by using the document “TEM06-03 Field Homogeneity Changes to IEC61000-4-20” August 2006 – this paper provides a practical experiment attempting to qualify the statistical statements made in the paper above on field calibration.
- Round Robin (RRT) Measurement Investigation above 1GHz status report – see document 06-10 in the York EMC web site list. The presentation sections are as below:-

- New pattern of the EUT
- Measurement of the output voltage
- Start position and uncertainties
- Measurement in the centre position
- Measurement at the edge of test volume
- Final measurement
- Measurement in RVC and TEM wave guide

8. NPL Work Program

NPL has funding for a 3 year program looking at cables in the GTEM - this will provide important information for the group.

9. CISPR32 Annexe Document

The chairman circulated the Draft Annex he had prepared with assistance from HC. The document describes the use of the GTEM cell for the purpose of emissions measurements and shows practical examples of the EUT configurations, termination of cables, using good practice based on practical experience as well as research from scientists and engineers working in this field. RD then invited members around the table for comments and criticisms prior to submission.

10. Close

The Chairman thanked Howard Chetwin and Measurement Technology Ltd for kindly hosting the meeting once again.

Next Meeting is to be timed to coincide with NPL's work program.

[POST MEETING NOTES: 1) The next JTF meeting will be on 22nd and 23rd of February 2007. Our next meeting would be some time after this – to suit both Angela and NPL – maybe April? 2) If you are interested in safety matters you may like to know that the new LVD is now in force. See our website ‘NEWS’ page] End.