

**Minutes: TC-10 Subcommittee on ADCs**  
Tucson, AZ – March 29-30, 1999

Attendance:      Eric Blom                      Tom Linnenbrink                      Philip Green  
                         Tom Meyer                      Steve Tilden

Monday, March 29, '99:

- Phil Green, Steve Tilden, and Tom Linnenbrink met and discussed the Computer Standard and Interfaces journal paper. It's deadline is March 30 but we expect to have a week to ten days to complete this.
- Decision was made to avoid having the paper be repetitive. Steve will gather up data for a couple of different examples on two different ADCs.
- We rewrote the abstract and some of the paragraphs. Steve will provide the rewrite on new examples for:
  - Example 1: Video
  - Example 2: Telecommunications
  
  - More descriptive discussion of elements of the standard:
    - Step response
      - Setup C
      - Parameters: Overshoot, recovery time,
    - Frequency response
      - Aperture effects
      - Step response

Tuesday, March 30, 1999:

- Equation numbering scheme has to be addressed. In Standard 1057, the heading format is identical to what we are currently using in 1241. The equations, figures, and tables are sequentially numbered throughout the text. We will do the same when completing 1241, but have been using a hybrid scheme to associate equations, figures, and tables with sections.
- We went through David Hansen's review. Many textual inconsistencies were modified.
- Steve Tilden submitted a written list of edits which the editor will include.
- Tom Meyer rewrote 4.1.6.1 to be much simpler with the intention of referencing Sol's published work. We added a few small edits.
- Eric Blom discussed some results from doing frequency response and bandwidth testing. He advocates that the discussion of step response and frequency response testing is inadequate. There are modifications that need to be made. Also, there needs to be reference to traditional sine wave testing. Eric will write something for 4.7.1 and 4.7.2.
- Eric Blom also pointed out the deficiency of listing power bandwidth as a relevant parameter. He suggests introducing "Usable Large Signal Bandwidth." This avoids obscuring the fact that an ADC could have significant non-linearities in performance (spurious codes, missing codes) and yet still have a well defined 3 dB gain loss point well above the point where nonlinearities appear. Eric Blom is going to rewrite 4.7.1 and 4.7.2 to include reference to traditional frequency response and bandwidth testing, but also to distinguish power bandwidth from usable large signal bandwidth.
- Dynad Feedback review:
  - Tom Meyer will come up with "caveat" section in 4.1 to caution the user on what is required in testing to compare results.
  - They wanted more explanation of equation A4. Steve will ask Jerry Blair to clarify this equation.

- Project EUPAS feedback review:
  - We went through the review and generated responses or made assignments for each review element. **These notes will be distributed as a separate report.**
- Preparing for IMTC99:
  - Steve Tilden will coordinate with Jerry Blair for the ADC demonstration setup.
  - The Dan Kien/Fred Irons paper was “dis-included” in the conference proceedings because it consisted of Viewgraphs-only. Tom Linnenbrink will try to make sure we still are able to make the presentation.
  - Others papers are submitted and have numbers.

#### EUPAS Feedback Review:

This feedback consisted of General Comments (1.-10.), General Technical Remarks (1. – 12.), particular remarks related to the text (approximately 10 pages in tabular form), followed by a list of 9 references and contact information for 9 reviewers. We went through this material and either took an action or assigned the item to a TC-10 member. In order for the assignments to be completed, members of the ADC subcommittee receiving assignments must have a copy of the IMEKO TC-4 EUPAS feedback.