

**Minutes of TC-10 Waveform Recorder Subcommittee Meeting of
May 19, 2003 in Vail, Colorado**

Attendance:

Steve Tilden	Texas Instruments
Tom Linnenbrink	Q-Dot
Bill Boyer	Sandia National Laboratories
Sol Max	LTX Corporation
David Bergman	NIST
Phil Green	Sandia
Dave Howe	NIST
Jerry Blair	Bechtel Nevada
Tom Meyer	Iowa State University
Antonio Cruz Serra	University of Lisbon

1. Agenda

Bill Boyer handed out an agenda and Tom Linnenbrink requested the addition of an item concerning the write up on equivalent-time sampling that appears in standards 1057 and 1241. Bill pointed out the significant work that Dan Kien had done in rearranging and reformatting the draft.

2. Review of writing assignments:

- 2.1 *Sections 4.2.2 – 4.2.4, Signal Sources.* Dan Kien is still working on this and was not at the meeting.
- 2.2 *Section 4.5.7, Non--idealities of sine wave sources.* David Bergman is continuing work on measurement and control of non-idealities. I will write an overview for this section. Steve Tilden, Sol Max and Nick Paulter will review the section.
- 2.3 *Section 4.7.7 Equivalent noise in recorder.* Bill Boyer will write an introduction and Nick Paulter and Jerry Blair will review it.
- 2.4 *Section 4.7.7.2, Filtering settling region of step..., and Section 4.7.8.4 .* Copies of David Bergman's previous submission were handed out. They included sections: 4.7.7.2, 4.7.8.3, 4.7.8.4, 9.1, 9.1.1 – 9.1.6. They were reviewed in the meeting. A number of minor changes and additions were suggested. David will make these, and Sol Max will review them. They will then be put in the next version of the draft.
- 2.5 *Section 4.6.1.2, Test Setup.* Bill Boyer rewrote this to eliminate duplication. Sol MAX reviewed it and thought too much was eliminated. He supplied a marked up version to Bill. Sol will work on doing more on this. This has to do with determining transition levels and there are differences between ADC and waveform recorder setups. Antonio Cruz Serra will review Sol's work.
- 2.6 *Sections 7.7 and 8.1.3.* Steve Tilden completed this and it was reviewed in a previous meeting. He will make sure it gets incorporated into the draft.

- 3 *Section 4.6.3, Ramp Histogram Testing.* Sol Max had converted the approach of Antonio Cruz Serra into the format and notation of the standard. There was a discussion between Antonio and Sol about Antonio's work. They will work together to get it into a form suitable for 1057.
- 4 **Effective Bits Issues.** This was not discussed. There is ongoing work being done by Istvan Kollar
- 5 **Other Business**
 - 5.1 **Equivalent Time Sampling.** Tom Linnenbrink pointed out that an employee of his thought there was disagreement between the text and the figure in this part of 1057 and 1241. Jerry Blair reviewed this and found that there was an error; He will correct this.
 - 5.2 **Waveform Simulation Software.** We discussed an email from Marty Miller of LeCroy proposing production of open source software. It is a good idea and we should encourage them to do this. There are some questions such as what he means by open source. Linnenbrink will respond to him with our official position, and Jerry Blair will be the technical contact.
 - 5.3 **IEC Standard for DAQ.** Tom Linnenbrink pointed out that this standard will be described in this conference. The subject matter is very close to that of standard 1057. Antonio Cruz Serra gave some background on this. He tried to get much of standard 1057 included, but the US representative wanted more elementary tests than 1057.
- 6 **Detailed Review of the Draft.** There was only time to review the items listed above.
- 7 **Review action items.** All were reviewed in the previous topics.
- 8 **The meeting was adjourned.**
- 9 **Next Meeting.** This topic was discussed at a later meeting, but is included here for convenience. The current schedule is to have the next meeting of TC-10 on November 4 & 5 at NIST in Gaithersburg, Maryland.