

P1658 Digital to Analog Standard Meeting, November 15, 2007
Hosted by WebEx - 12:00 Noon to 4PM EST

Please see: Notes from chair at the end. – SJT – 26 Nov 07

Attendees:

Steve Tilden, Texas Instruments (Chair) tilden_steve@ti.com
Robert Graham, Sandia National Labs., Albuquerque, NM USA rmgraha@sandia.gov
Richard Liggiero, LTX Corporation, Norwood, MA USA Richard_Liggiero@ltx.com
Fang Xu, Teradyne, Boston, MA USA fang.xu@TERADYNE.COM
Tom Linnenbrink, Hittite, (Chair, TC-10) linnenbrink@hittite.com
Solomon Max, LTX Corporation, Norwood, MA USA (Secretary) sol_max@ltx.com
Pasquale Daponte, University of Sannio, Benevento, Italy daponte@unisannio.it
Niclas Björsell, University of Gävle, Gävle, Sweden niclas.bjorsell@hig.se

Introductions were made for all attendees.

The changes in section 4.11 were accepted, although it was noted that the section (“Differential gain and phase”) was not relevant to modern video processing.

Section 4.12 was accepted with significant modifications. Among the items modified were;

- V_{cc} and V_{ee} were deleted from the text on the grounds that the terms were overly specific.
- “shall” replaced “should” in several paragraphs per IEEE recommendations.
- The term PSRR was discussed. The consensus was that the previous definition;
$$PSRR = \frac{\Delta V_{out}/FSR}{\Delta V_{PS}/V_{PS}}$$
 should be replaced by $PSRR = \frac{\Delta V_{out}}{\Delta V_{PS}}$ since most device data sheets used the second definition. It was noted, however, that there is an argument for the first definition, because it more clearly connects the change in Power Supply voltage to the significance of the change in the output. If the output is a current output, the second definition becomes incorrect. Both definitions have been left in the draft until the issue is discussed further.
- It was noted that “pk-pk” was not a defined term. It was suggested that it be spelled out as “peak to peak” when referred to in the standard.

It was recommended that the chairman determine whether it is possible to get a two-year extension of the date of completion of the DAC standard. We must finish the standard by the summer of 2008 if we are to get the standard approved within the current schedule.

Bob Graham will edit the current revision of the standard. When he is finished with the changes they will be added to the web site.

Another 4 hour WebEx meeting is tentatively scheduled for Tuesday December 11, 2007 at 10:00 AM EST. Further details will follow. It was felt that this would permit European participation in the meeting.

A summary of the assignments that were defined in the previous minutes is shown below. Notes have been added to clarify the current states of the assignments. Superscript numbers in the table refers to the notes 1-6.

The rules for modifying the sections are listed below;

The chairman and secretary will determine the sections that will be given to each person for careful editing, as well as the people who will review the changes. The following procedure should be followed;

1. Copy the specific sections that have been assigned for editing into a word document.
2. Manually correct the section numbers and equation numbers in the sections being reviewed.
3. Edit the word document in the “highlight changes” mode of Word.
4. Send the fully revised sections to the section reviewer.
5. Submit the revised sections to the editors in Sannio for inclusion in the draft.
6. Submit the revised sections to the Secretary for inclusion on the web sites.

Assignments

Assigned Checker	Section	Assigned Reviewer	Comment
David Bergman ¹	1.1.1	Fang Xu ²	Analog-to-digital and digital-to-analog converters differences and similarities
Solomon Max ⁴	1.2	Niclas Björzell ⁵	Digital to Analog Converter Background
Jerry Blair ¹	1.3.2.1	David Bergman ²	Adjustment range
David Bergman ¹	3.1.18	Fang Xu ²	dynamic range
Francisco Alegria	3.2	Pasquale Daponte ²	symbols
Richard Liggiero ¹	4.2.2	Solomon Max ²	Clock and data feedthrough Figure
Solomon Max ³	4.1.2	Fang Xu ³	Dynamic Testing & Static Testing
Solomon Max ³	4.4.5	David Bergman ³	dynamic range
Steve Tilden ¹	4.5.1.1	Solomon Max ²	Static gain and offset test method
Pasquale Daponte ¹	4.5.3	Solomon Max ²	Dynamic gain and offset
Richard Liggiero ¹	4.6.4 4.9	Solomon Max ^{*2}	Spurious Free Dynamic Range** Multichannel DAC parameters**
Solomon Max ³	4.7	Richard Liggiero ^{*4}	Noise**
Fang Xu ¹	4.10 4.13	David Bergman ^{*2}	Frequency Response Parameters** Data Dependent Parameters**
Niclas Björzell ³	4.11 4.12	Francisco Alegria ^{*3}	Differential Gain and Phase** Power Supply Parameters**
David Bergman ¹	4.8	Jerry Blair ^{*2}	Step response parameters**
Francisco Alegria ⁶	Annex A	Fang Xu [*]	DAC Architecture**
Jerry Blair ¹	Annex B	Niclas Björzell ^{*2}	Software Considerations**

¹ This section was previously assigned, but has not as yet been completed.

- 2 This review was not completed since the original changes were not completed.
- 3 This section was completed, and is currently on the web site.
- 4 The section was written, but the review was not completed. The section will be added to the web site without review.
- 5 The review was not completed.
- 6 This section was added to the draft standard

** These items are a general review of the specified sections. Please implement the following steps;

1. Copy the specified sections into a Word document named "Sectionx.x.x.mod.doc", Accept all changes. (x.x.x refers to the specific section number)
2. Set word into the mode of Track Changes, Highlight Changes.
3. Edit the document carefully to correct technical errors, or clarify the wording.
4. Send the document to the reviewer.
5. Implement this before November 8, 2007

*The reviewer should proceed through the following steps.

1. Review the document
2. Edit the document in the mode of Track Changes, Highlight Changes.
3. Send the reviewed document to sol_max@ltx.com with the filename "Sectionx.x.x.mod1.doc" (x.x.x refers to the specific section number). The secretary will post the document on the web site. Complete this by November 12, 2007.

NOTES from chair:

- 1) **The draft received the morning of the meeting was not the latest from the October meeting. I'm not sure how this happened, but thanks to Bob Graham we have now fixed it, including a broken Table Of Contents that showed every page as page 3.**
- 2) **Idea's how to schedule a better WebEx to allow better participation from our European colleagues are welcome and desired. The problems connecting from Italy continued as the past 2 meetings did not allow Italy to attend the WebEx and teleconference.**
- 3) **I have applied for a 2 year extension to the PAR through the IEEE website. It will be voted on at their next scheduled meeting.**

Regards, Steve