

Aculab DSP65 Firmware Module

Conference –2

Two Party Conferencing + Additional Tone

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RECORD OF REVISION

Rev	Description	Date
2	Issue of Conference-2 algorithm	21-Nov-1995
3	Revised version of the conf2 algorithm, renamed dconf2, with the simple addition of the inputs to form the conferenced output instead of halving the inputs before addition. Assumes only one speaker at any one time during the conference, thus there's no reduction in the loudness of the speakers during conferencing.	04-Apr-1996
3.01	New Layout and production of Dconf2.pdf	17-Nov-1997
3.02	To include PCI downloading	16-Mar-2001
3.03	Revised version for DSP65 firmware types ONLY	12-Jan-2005

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1 Introduction

The Conference-2 application is designed to generate fifteen 2-party conference lines per DSP. The fifteen 2-party conference lines each possess a conference of the two speakers and a conference speaker + warn tone.

A typical application that uses this conference-2 algorithm could be:

General use in the stock exchange during two party transactions and the need to verify the speakers agreement to a certain sale or purchase of shares at an agreed price, say. The speaker + warn tone would be recorded on tape somewhere for later verification.

The two party conference output may be used, and the added warn tone conference output may be omitted, if desired.

The general format of the inputs and outputs are as follows:

```
Input timeslot = Party A   Output timeslot = (Party A + Party B)
Input timeslot = Party B   Output timeslot = Party B + warn tone
```

2 The Conference-2 Algorithm Structure

The Conference-2 algorithm provides 15 conference lines of two speakers each (party A + party B) and 15 conference lines with (speaker B + warn tone). Note that the warn tone is generated internally with the frequency and cadence settings as described below:

```
Input timeslot [2N]   Output timeslot [2N]   = Input [2N] + Input [2N+1]
Input timeslot [2N+1] Output timeslot [2N+1] = Input [2N+1] + "warn tone"
```

for N = 0 to 7

Input timeslot 16 reserved for signalling

```
Input timeslot [2N+1] Output timeslot [2N+1] = Input [2N+1] + Input [2N+2]
Input timeslot [2N+2] Output timeslot [2N+2] = Input [2N+2] + "warn tone"
```

for N = 8 to 14

warn tone = 1400 Hz @ -6 dBm0 for a duration of 400 ms every 15 s.

3 External Interface

3.1 User Interface

The procedure for download utilises the program, fwdspldr.exe. It's used in the following manner:

```
Fwdspldr -t65 <dsp_pos> <dsp_firmware.b65> <port_no> <pm4_filename>
```

```
dsp_pos           = dspa OR dspb
dsp_firmware      = any firmware title with the extension .b65.
                   For passive monitoring: conf2a.b65 for A-law
                   For passive monitoring: conf2u.b65 for mu-law
port_no           = 0, 1, 2,...n. As many ports as supported with DSP65s
pm4_filename      = any pm4 filename with ZAP loader
```

Note Refer to the DSP firmware guide for information on Card types, DSP's and their associated streams

3.2 Program types Available

There are two types of program available:

conf2a.b65 (for A-law)

conf2u.b65 (for u-law)

For passive monitoring

4 Configuration

Timeslot	Input	Output
0	party A1	party (A1+B1)
1	party B1	party(B1+warn)
2	party A2	party (A2+B2)
3	party B2	party(B2+warn)
4	party A3	party (A3+B3)
5	party B3	party(B3+warn)
6	party A4	party (A4+B4)
7	party B4	party(B4+warn)
8	party A5	party (A5+B5)
9	party B5	party(B5+warn)
10	party A6	party (A6+B6)
11	party B6	party(B6+warn)
12	party A7	party (A7+B7)
13	party B7	party(B7+warn)
14	party A8	party (A8+B8)
15	party B8	party(B8+warn)
16	reserved	reserved
17	party A9	party (A9+B9)
18	party B9	party(B9+warn)
19	party A10	party (A10+B10)
20	party B10	party(B10+warn)
21	party A11	party (A11+B11)
22	party B11	party(B11+warn)
23	party A12	party (A12+B12)
24	party B12	party(B12+warn)
25	party A13	party (A13+B13)
26	party B13	party(B13+warn)
27	party A14	party (A14+B14)
28	party B14	party(B14+warn)
29	party A15	party (A15+B15)
30	party B15	party(B15+warn)
31	-	rec.tone out

5 Additional notes for T1 users

These notes are for users of dconf2u on an Aculab T1 card. The file still provides 15 conferenced lines on timeslots 0-15, 17-30 with timeslot 31 generating the warn tone.

In a T1 situation there are only 24 timeslots available (timeslots 0-23). Thus, the following connection configuration is suggested to provide 12 conferenced outputs.

If the user is connecting conferenced inputs or outputs from or to Network port 0 on a PCI card, Port 0 DSP A is assumed.

Example stream connections::

Conference #1:

Connect Net 0,0 to stream 17,0 (HDLC 0,0) = Input A1
Connect Net 0,1 to stream17,1 (HDLC 0,1) = Input B2
Connect stream17,0 (HDLC 0,0) to Net 0, 0 = Conferenced Output (A1+B1)
Connect stream17,1 (HDLC 0,1) to Net 0, 1 = Conferenced Output (B1 + warn tone)

Conference #2:

Connect Net 0,2 to stream17,2 (HDLC 0,2) = Input A2
Connect Net 0,3 to stream17,3 (HDLC 0,3) = Input B2
Connect stream17,2 (HDLC 0,2) to Net 0, 2 = Conferenced Output (A2+B2)
Connect stream17,3 (HDLC 0,3) to Net 0, 3= Conferenced Output (B2 + warn tone)

And so on.....

Conference #11:

Connect Net 0,20 to stream17,21 (HDLC 0,21) = Input A11
Connect Net 0,21 to stream17,22 (HDLC 0,22) = Input B11
Connect stream17,21 (HDLC 0,21) to Net 0, 20 = Conferenced Output (A11+B11)
Connect stream17,22 (HDLC 0,22) to Net 0, 21 = Conferenced Output (B11 + warn tone)

Conference #12:

Connect Net 0,22 to stream17,23 (HDLC 0,23) = Input A12
Connect Net 0,23 to stream17,24 (HDLC 0,24) = Input B12
Connect stream17,23 (HDLC 0,23) to Net 0, 22 = Conferenced Output (A12+B12)
Connect stream17,24 (HDLC 0,24) to Net 0, 23 = Conferenced Output (B12 + warn tone)