

### tn0113: AP2 Data Transfer Rate

AP2 is capable of transferring data between AP2 and XBUS at a rate of 750,000 samples per second. However, this maximum rate implies that the AP2 is dedicated in accessing one play DAMA buffer (and one record DAMA buffer), using play and record commands. If any of the following commands is used, this rate will be greatly reduced (please refer to APOS Software Reference).

Sequenced play/record commands include seqplay, dplay, mplay, seqrecord, drecord and mrecord. When only these commands are used, AP2 data transfer rate is 400,000 samples per second.

When the AP2 data rate becomes a problem, one can always use simple play/record even multiple play/record channels are involved. For example, when 4 D/A channels are used, and four buffers are sent to them, each per channel, these four data buffers can be interleaved and saved to one DAMA buffer, and played from there via simple play command. While at the D/A side, four D/A channels are still set-up, and when data stream arrives, it will be distributed evenly among the prepared channels. If the number of D/A and A/D channels are even, APOS shuf and split commands will make this interleaving easy.