SOUND.FMT

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PSIONICS FILE - SOUND.FMT
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Format of Sound files
Last modified 1995-07-26
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Sound files hold recorded sounds, and can only be used by the Series 3a. Thesound is played at
8000 entries per second. The file uses A-Law encoding.
A sound file begins with a 32 byte header of the following form:  Offset  0 (cstr):
"ALawSoundFile**"
  Offset 16 (word): format version number
  Offset 18 (long): number of samples in the file  Offset 22 (word): length of silence (in 1/32
seconds) to append on playback  Offset 24 (word): number of times to repeat on playback (0 and 1
both mean
                    play once)
The rest of the file is sound samples. Each byte represents a sound samplewith a value between -
4095 and +4095. This value is encoded in two steps:first the magnitude is reduced from 12 to 7
bits, and then alternate bits(including the least signficant one) are inverted. The most
significant bit
of the byte is set if the value is negative.
Values are thus encoded by:
    S0000000ABCDi -> S000ABCD -> S101APCQ
    S0000001ABCDi -> S001ABCD -> S100APCQ
    S000001ABCDii -> S010ABCD -> S111APCQ
    S00001ABCDiii -> S011ABCD -> S110APCQ
    S0001ABCDiiii -> S100ABCD -> S001APCQ
    S001ABCDiiiii -> S101ABCD -> S000APCQ
    S01ABCDiiiiii -> S110ABCD -> S011APCQ
    S1ABCDiiiiiii -> S111ABCD -> S010APCQ
and decoded by:
    S000ABCD -> S101APCQ -> S001APCQ10000
    S001ABCD -> S100APCQ -> S0001APCQ1000
    S010ABCD -> S111APCQ -> S1APCQ1000000
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    S011ABCD -> S110APCQ -> S01APCQ100000
    S100ABCD -> S001APCQ -> S0000001APCQ1
    S101ABCD -> S000APCQ -> S0000000APCQ1
    S110ABCD -> S011APCQ -> S00001APCQ100
    S111ABCD -> S010APCQ -> S000001APCQ10
(a bit shown as i is ignored; a bit shown as P is the inverse of the bit shownas B, and Q is the
inverse of D).
If the values are treated as fractions of full-scale deflection (by dividingthem by 4096), then
the following tables give mappings in each direction.
@@ TO BE PROVIDED
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