Oversampling

Normal SW = 6250 Hz (12.5 ppm) ^1H
dwell (DW) = 80 μs
digitization rate = 12500 Hz

Maximum digitization rate = 400 kHz
minimum DW = 2.5 μs
oversampling ratio = 32 x
calculated SW = 200,000 Hz (400 ppm)

for a 1-D spectrum (16K) acquire 512 K points

Simple processing:
average each group of 32 points
benefits: • sampling noise reduced by $\sqrt{32} = 5.66$
(improved S/N at low gain settings)
• digitizer resolution increased by 2.5 bits ($2^{2.5} = 5.66$)