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We show that if a weight  $w \in C_{2^t}^d$  and there is  $q > 1$  such that  $w^{2^t} \in A_q^d$ , then the  $L^2$ -norm of the  $t$ -Haar multiplier of complexity  $(m, n)$  associated to  $w$  depends on the square root of the  $C_{2^t}^d$ -characteristic of  $w$  times the square root  $A_q^d$ -characteristic of  $w^{2^t}$  times a constant that depends polynomially on the complexity. In particular, if  $w \in C_{2^t}^d \cap A_\infty^d$  then  $w^{2^t} \in A_q^d$  for some  $q > 1$ . (Received February 10, 2014)