Zauner’s conjecture asks whether $d^2$ complex equiangular lines exist in every $d$-dimensional complex vector space, a number which saturates known upper bounds. Such a set of lines is known in the quantum information literature as a SIC. In this talk, we will discuss a substantial strengthening of Zauner’s conjecture that makes surprising connections to explicit algebraic number theory. In particular, every known SIC family yields explicit unit generators for specific ray class fields of a real quadratic number field. The examples in low dimensions suggest a general recipe for producing unit generators in infinite towers of ray class fields above arbitrary real quadratic number fields, and we summarize this in a conjecture. arXiv:1604.06098. (Received January 22, 2018)