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Qubit coupling to superconducting whispering gallery mode resonator[1] Z.K. MINEV, I.M. POP, K. SERNIAK, M.H. DEVORET, Department of Applied Physics, Yale University — A protected quantum register composed of a high quality mode coupled to a quantum bit and a fast readout mode promise a hardware efficient and technically realizable module-based quantum network [Science 339, 1169 (2013); PRL 111, 120501 (2013)]. Such a module is designed in an integrated manner by embedding a quantum bit inside the clean environment of a superconducting whispering gallery mode resonator. Its two orthogonal modes can have a large asymmetry in coupling to a microwave transmission line, thus realizing a storage and readout mode.

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