

ABSTRACT. In any dimension  $n \geq 3$ , we show that spherically symmetric bounded energy solutions of the defocusing energy-critical nonlinear Schrödinger equation  $iu_t + \Delta u = |u|^{\frac{4}{n-2}}u$  in  $\mathbf{R} \times \mathbf{R}^n$  exist globally and scatter to free solutions; this generalizes the three and four-dimensional results of Bourgain, 1999a and 1999b, and Grillakis, 2000. Furthermore we have bounds on various spacetime norms of the solution which are of exponential type in the energy, improving on the tower-type bounds of Bourgain. In higher dimensions  $n \geq 6$  some new technical difficulties arise because of the very low power of the nonlinearity.