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Abstract:The terahertz spectra of a rare-earth iron borate with the huntite structure are obtained for the first time. We study the low-temperature (4.0-90 K) alpha-polarized transmittance spectra of the EuFe3(BO3)(4) single crystal in the region 0.9-6.0 THz. Pronounced shifts of phonon frequencies and appearance of new phonon modes at the temperature T-S = 58 K of the R32 -> P3(1)21 structural phase transition are observed. Additional shifts of phonon frequencies occur at the temperature T-N = 34 K of the magnetic ordering of the Fe subsystem, thus evidencing the spin-phonon coupling in this multiferroic material. 
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