On the generalization of Dedekind modules

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Let R be an integrally closed commutative domain with its quotient field K. Let M be a finitely generated torsion free R-module. We define first the concepts of v-submodules and study some elementary properties. Moreover, we introduce the notion of G-Dedekind modules, as the generalization of Dedekind modules. A module M is called a generalized Dedekind module (a G-Dedekind module for short) if any v-submodule of M is invertible. Furthermore, we show that under some conditions, if R is a Dedekind domain and M is an R-module, then M is a G-Dedekind module. We also give some results related to polynomial modules $M[X]$ as an $R[X]$-module.