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Kelly L. McKinnie* (klmckin@math.utexas.edu), The University of Texas at Austin,
Department of Mathematics, 1 University Station C1200, Austin, TX 78712. *Indecomposable
 p -algebras*. Preliminary report.

Let G be a finite abelian p -group of rank ≥ 2 , K/F a G -extension of characteristic p and (u_{ij}) a non-degenerate matrix for K/F . In this case the Amitsur-Saltman generic abelian crossed product defined by G , K/F , and (u_{ij}) contains no non-trivial p -power central elements and hence is non-cyclic. We prove that these p -algebras do not contain any non-trivial p -power central elements after tensoring by any prime to p extension, hence they remain non-cyclic. This result is used to construct indecomposable p -algebras of exponent p and index p^n for all $n \geq 2$ and odd primes p . This can be interpreted as an algebraic proof, in the specific case of an abelian crossed product p -algebra, of a result of Karpenko's which states that all such generic algebras of exponent p are indecomposable. (Received September 27, 2005)