A Three-Level Common-Emitter Current Source Inverter with Reduced Device Count

Publons ID	(not set)
Wos ID	WOS:000427968000014
Doi	
Title	A Three-Level Common-Emitter Current Source Inverter with Reduced Device Count
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Publish Date	2017
Journal Name	2017 4TH INTERNATIONAL CONFERENCE ON INFORMATION TECHNOLOGY, COMPUTER, AND ELECTRICAL ENGINEERING (ICITACEE)
Citation	3
Abstract	This paper presents a different configuration of a three-level current-source inverter (CSI). Using the proposed circuit configuration, the total number of the inverter device count is reduced. The gate or base drive power supplies are simpler than the conventional H-bridge current source inverter because almost all of the switching devices are connected at a common-emitter line. In addition, a perfect modified sine-wave operation can be achieved using this topology compared with the previous circuits. Some computer simulation test results are presented in this paper. The computer simulations were carried out using PSIM Software. The simulation results show that the circuit works well generating a three-level output current waveform, which proves feasibility of the proposed inverter circuits.
Publish Type	Book
Publish Year	2017
Page Begin	77
Page End	80
Issn	
Eissn	
Url	https://www.webofscience.com/wos/woscc/full-record/WOS:000427968000014
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