

DOI: <https://doi.org/10.15407/techne2016.03.085>

MATHEMATICAL MODEL OF HIGH VOLTAGE DAC FOR ESTIMATION OF DISTORTION OF THE OUTPUT SINUSOIDAL SIGNAL

Journal	Tekhnichna elektrodynamika
Publisher	Institute of Electrodynamics National Academy of Science of Ukraine
ISSN	1607-7970 (print), 2218-1903 (online)
Issue	№ 3, 2016 (May/June)
Pages	85 – 90

Authors

Yu.F. Tesik, R.N. Moroz

Institute of Electrodynamics National Academy of Science of Ukraine,
Pr. Peremogy, 56, Kyiv-57, 03680, Ukraine,
e-mail: moroz320@yandex.ru

Abstract

Two simplified mathematical models for calculate the change in the output impedance and distortion sine wave output of the high-DAC for different types of switching reference sources are proposed. The advantages of the circuit with switching transistors by help of the mathematical modeling is provided. References 7, figures 8.

Key words: reproduction, metrological equipment, electricity, high voltage digital-analog converter.

Received: 05.02.2016

Accepted: 24.03.2016

Published: 25.04.2016

References

1. Rovdo A.A. Semiconductor diodes and circuits with diodes. Moskva: LaitLTD., 2000. 288 p. (Rus)
2. Taranov S.G., Karasinskii O.L., Tesik Yu.F., Moroz R.N. Development of principles of construction of switching reference voltages of high-voltage DAC. *Tekhnichna Elektrodynamika*. 2014. No 4. P. 64–66. (Rus)
3. Tonkal V.E., Lipkovskiy K.A., Melnichuk L.P. Ways to improve the quality of the output voltage of the autonomous inverters. Kiev: Institut Elektrodinamiki Akademii Nauk USSR, 1972. 93 p. (Preprint AN of Ukraine, Institute of electrodynamics; 49) (Rus)
4. Fedorov V.T., Telets V.A. Microchips DAC and ADC: functioning, parameters, application. Moskva: Energoatomizdat, 1990. 319 p. (Rus)
5. Bakshi U.A., Bakshi A.V. Electrical measurements and measuring instruments. Technical Publications, Pune. 2009, 716 p.
6. Petkovsek M., Zajec P., Nastran J., Voncina D. Multilevel bipolar high voltage pulse source – interlock dead time reduction *EUROCON 2003*
Computer as a Tool. The IEEE Region 8. 2003. Vol. 2. P. 240–243.
7. Svensson S. Verification of a calibration system for power quality instruments. IEEE Instrumentation and Measurement Technology Conference, St. Paul, Minnesota, USA. 1998. P. 1271–1275.

[PDF](#)