IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 4, May 2022
Impact Factor: 6.252

Embedded System for Programmable MultiFunction Waveform Generator

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Abstract: *A function generator is one of the most important equipment in electronics testing. Industries are spending lots of money on measuring devices. However, it is required to generate waves of various frequencies. It could be sine, triangular, ramp, step, rectangular, and many more types of signals. In addition to that, engineers require variable amplitude and a huge frequency range in some applications. Naturally, all are buying function generators for the same, which is costly, full of maintenance, more power consumption, and more space consumption. The method of this research is the experimental method. Any electronic measurements laboratory needs signal generators capable to generate several types of signals with different shapes, frequencies, and amplitudes. The first thing began with a literature study of the components needed and then continues with the making of a system design to generate a smaller function generator that can display 4 waves, waves that can be displayed are sine waves, squares, triangles, and sawtooth. The wave generated by the function generator is not made from Analog circuits but is made from digital data stored on the Arduino and converted to Analog with DAC pins. DAC has a function as a transformer of digital data into Analog data capable of being used to create function generators. The results of the study showed that the function generator was successfully made with smaller dimensions so that it was easier to carry everywhere.*

Keywords: Function Generator, Experimental Method, Smaller Dimensions, Different Frequencies, Electronic Measurements Laboratory.

REFERENCES

[1]. Suratsavadee Korkua, Himanshu Jain, Wei-JenLee, Chiman Kwan "Wireless Health Monitoring System for Vibration Detection of Induction Motors" IEEE 2010.
[2]. A.S. Weddell, G.V. Merrett, S. Barrow, B.M. AlHashimi "Vibration-Powered Sensing System for Engine Condition Monitoring" Electronics and Computer Science, University of Southampton, Southampton, SO17 1BJ, UK.
[3]. Jingqiu Huang, Harutoshi Ogai, Chen Shao, Juanqing Zheng, Izumi Maruyama, Shinji Nagata, Hiroshi Inujima "On Vibration Signal Analysis in Bridge Health Monitoring System by Using Independent Component Analysis" SICE Annual Conference 2010 August 18-21, 2010, The Grand Hotel, Taipei, Taiwan. Field Programmable Gate Array. International Conference on Circuit, Power and Computing Technologies [ICCPCT], 339-344.
[4]. Android and MATLAB-based Function generator 1 Jigarkumar A. Gohil Mechatronics Engineering (Asst.Prof.) SAL college of engineering Ahmedabad, INDIA 2 Parth A. Shah Mechatronics engineering (Assistant Prof) Sal institute of technology & Engineering Research 3Ripal B. Modi 4Nikita Bavishi Mechatronics Engineering Mechanical Engineering (Asst.Prof.) (Asst Prof) SAL college of engineering Ahmedabad, INDIA Ahmedabad, India