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September/October 2018

About the Cover

Elwood Downey, WB@OEW, describes a GPS-stabilized RF signal generator that produces any frequency between 500 kHz and 40 MHz with an accuracy approaching one part billion (0.01 Hz at 10 MHz). It comprises an Arduino Nano, a GPS receiver, a digital encoder, a small TFT LCD color display, and a direct digital synthesizer. The author used the generator as the reference for a recent ARRL Frequency Measuring Test in which he tied for second place. He also measured the Doppler shift of WWV at 5 MHz, from which he calculated the change in the propagation path. Using a model of the path, he estimated the effective height change of the ionosphere over time.

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