

QEX

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March/April 2024

About the Cover

Gary Johnson, NA6O, bases a laboratory RF power meter on modern versatile demodulating logarithmic amplifier ICs, which offer wide dynamic range and reasonable accuracy. The goal for bench use was to roughly emulate the basic features of commercial power meters including interchangeable external sensors, multiple displays with various scales, and computer control. By changing sensors while sharing a common data acquisition and control unit, it's possible to cover a wider frequency and/or power range. All of this is achieved at a tiny fraction of the cost of commercial equipment. The controller is based on a Raspberry Pi 3B+. Analog and digital I/O are supported by a custom interface board built on a pre-etched prototyping board. An ADS1115 ADC provides 16 bit resolution, differential input, and a sample rate up to 860 Hz for data acquisition. A 16 Hz rate was selected, which automatically includes digital filtering that is very effective at rejecting noise well beyond the audio range.



In This Issue:

2 Perspectives

Kazimierz "Kai" Siwiak, KE4PT

3 Methodically Predicting Accurate Crystal Filter Performance

Steve Geers, KA8BUW

11 Parametric Study of a Vertical Antenna with a Spiral Counterpoise

Greg Hebner, AG5FE

15 Morse-Coded Binary Over CW (MCB/CW)

Mark R. Titchener, ZL4CDE

18 Upcoming Conferences

19 Add Matching Networks, Attenuator Pads and Transformers to Your 4nec2 Model

Richard Place, WB2JLR

22 Laboratory RF Power Meter

Gary Johnson, NA6O

28 Self-Paced Essays — #21 Midterm Exam

Eric P. Nichols, KL7AJ

Index of Advertisers

DX Engineering: Cover III

ICOM America: Cover IV

Kenwood Communications: Cover II