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January/February 2017

### **About the Cover**

Scott Roleson, KC7CJ, found that non-functioning and obsolete equipment can be relatively inexpensive, and can be easily re-purposed as rugged and attractive enclosures for new projects.





# Features



**Perspectives** Kazimierz "Kai" Siwiak, KE4PT

First Issue of QEX



**Re-Purposing an Obsolete Instrument Enclosure** Scott Roleson, KC7CJ



A Study of Long Path Echoes Flavio Egano, IK3XTV



Measuring the Ionosphere at Vertical Incidence using Hermes, Alex and Munin Open HPSDR and Gnuradio Tom C. McDermott, N5EG



A Different Approach to Yagi-Uda Antenna Design Robert J. Zavrel, W7SX

**Pi Networks with Loss** Bill Kaune, W7IEQ



Letters to the Editor



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