

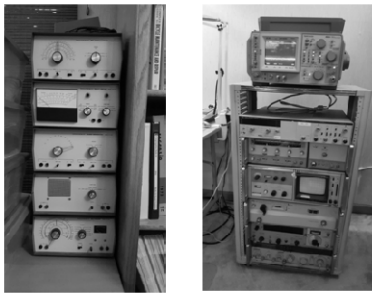
SOME OF MY FAVORITE TEST GEAR COMES FROM CHINA

Michael Davis, KB1JEY
 Phil-Mont General Meeting
 March 14, 2018

Introduction

- ▣ Idea came from N.E.W.S. Friday Workshop, *Microwaves Without a Wheelbarrow of Dollars*
 - *Inexpensive VHF-UHF "Antenna Analyzer"*
 - *RF Explorer Spectrum Analyzer, Signal Generator*
- ▣ Some of KB1JEY's test gear already from China
- ▣ Interest in test gear started with Heathkits
- ▣ Acquired HP and Tek gear for test bench
 - Problem is finding the gear in good condition for less than the price of your car
 - Alternative is new Chinese gear not lab-grade but good enough for amateur use

Heathkit "5280" Gear KB1JEY Test Rack



What Gear Do I Need ?

- ▣ Power meter or at least a detector
- ▣ Frequency counter
- ▣ Signal generator or signal source
- ▣ Attenuator
- ▣ Spectrum analyzer
- ▣ Network analyzer
- ▣ Noise Figure Meter
- ▣ Digital oscilloscope

AAI N1201SA UHF-VHF Vector Impedance Analyzer



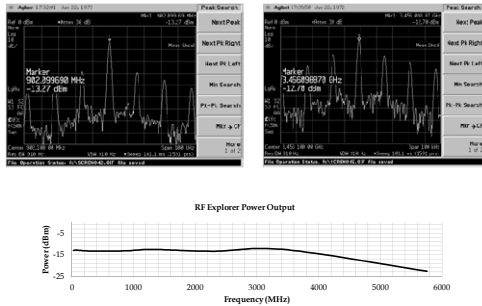
*Cheap Enough to Drop from a Tower
 And graphs too*

RF Explorer Signal Generator



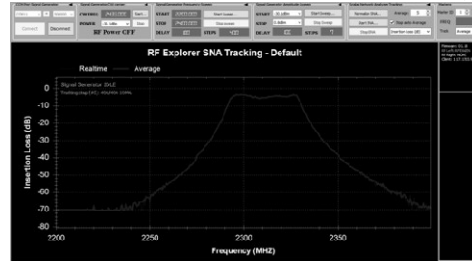
6 GHz for under \$200

RF Explorer Signal Generator

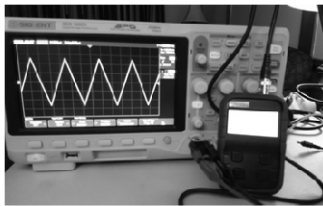


Why Get the Spectrum Analyzer ?

- ▣ Maybe the signal generator needs a buddy
- ▣ Real reason ... (and free Windows client)



Velleman HPG1 1 MHz Pocket Function Generator



Yaeger FC-1 Handheld Frequency Counter



- 10 Hz to 2.6 GHz
- Signal Strength Calibrated in Power Ratio in dBm

Excelvan Capacitor Meter



Up to 470 mf for \$30

Excelvan ESR Capacitance Ohm Meter

- ▣ ESR = Equivalent Series Resistance
- ▣ Reading high? Not filtering ripple properly
- ▣ Test all capacitors in circuit before failure



Surecom SF401 Plus



- Useful range 100 MHz to 3 GHz
- Can use with both analog and digital radios

Circuit Specialists CSI-Premier-75w

- Very solid soldering station for less than \$60
- 5% discount on first order



Coming Attractions

- ▣ Signal source from 137 MHz through 4.4 GHz with LCD display for \$65 on eBay. Harmonics take it into 10-24 GHz range
- ▣ Power meter covers up to 8 GHz , -55 to -5 dBm with OLED display on eBay for \$34
- ▣ Bare-bones Digital Inductance-Capacitance Meter with instructions for \$30 from MPJA.com

Cautions

- ▣ Instructions may be skimpy and menus sometimes cryptic
- ▣ Have to wait for some items to be shipped from China
- ▣ Thin instructions and engineering increase the possibility of releasing the “magic smoke”

Acknowledgements

- ▣ Paul Wade W1GHZ
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