

## SOME OF MY FAVORITE TEST GEAR COMES FROM CHINA

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### 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

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## AAI N1201SA UHF-VHF Vector Impedance Analyzer



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

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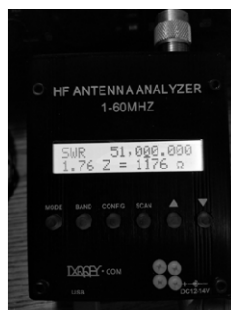
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## LXQQFHY MR300




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## LXQQFHY MR300

- ❑ An antenna analyzer that covers 6m and HF for \$60 (battery and power supply extra)
- ❑ Measures SWR, impedance, capacitance and inductance
- ❑ Manual is pretty complete
- ❑ Free Windows client is available
  - Author is still trying to get it to communicate
- ❑ Bluetooth version is available

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## RF Explorer Signal Generator



6 GHz for under \$200

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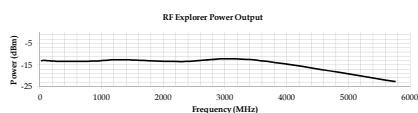
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## RF Explorer Signal Generator




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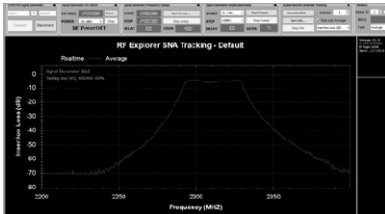
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## Why Get the Spectrum Analyzer ?

- ▣ Maybe the signal generator needs a buddy
- ▣ Real reason ... (and free Windows client)
- ▣ A network analyzer for \$500 !!




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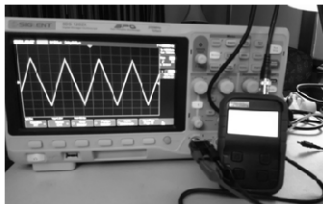
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## Velleman HPG1 1 MHz Pocket Function Generator




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## Yaeger FC-1 Handheld Frequency Counter



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

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## Excelvan Capacitor Meter



Up to 470 mf for \$30

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## Excelvan ESR Capacitance Ohm Meter

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




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## Surecom SF401 Plus



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

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## Circuit Specialists CSI-Premier-75w

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




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## 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

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## 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”

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## Acknowledgements

- ▣ Paul Wade W1GHZ
- ▣ Tom Frederiksen KA3FQS
- ▣ Roger Rehr W3SZ

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## DEMO

- ▣ Sweep 903 MHz filter can with RF Explorer Spectrum Analyzer and Signal Generator pair controlled by free Windows client
- ▣ Use the AAI antenna analyzer to check out a 1296 MHz yagi

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