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USB POWER SENSORS

Old Style Meters

- Good Points
  - Thermistor Sensor could cover a wide frequency range. The HP 8487A= 10mhz- 50ghz
  - 50DB range
  - Accuracies of <1% in some cases
  - Very simple and portable

Bad Points

- Meter and sensor have to be calibrated and zeroed.
- Sensor has to be calibrated for frequency
- No data management easily done.

So What are They

- The new HP model is pretty typical
- Good points
  - Internal calibration for zero, temperature and frequency
  - Wide dynamic range -60 to +20 DBM
  - All RF and A/D done in the head
  - Extensive data management
  - Can be remoted
  - Can run for days recording power measurements.
  - Can be integrated into other test gear- only a software problem.

More

- Bad Points
  - More limited frequency ranges available
  - Won't work without a computer
  - Expensive and not surplus yet. About $5K
  - >2% accuracy

How do they work?

- Added multiple sensors for greater power range on the same chip
- At least one CPU and EPROM in the head.
- The head zeros, offsets for temperature, selects frequency range and digitizes the output level.
- Cal. data is stored in non volatile memory.

Then What?

- The computer program receives the reading or stream (20samples/sec)
- Displays the results in a scalable analog display, a digital display and a continuum display
- Readings can be averaged, stored displayed and exported.
- The meter can take and store measurements over time.

Conclusions

- Older power sensors are cheap and very usable in most circumstances. They offer a wide frequency range and need considerable set up time.
- Newer sensors are more plug and play, can record data over time, and digitize results.
- Which one? Depends on your applications.

The Beginning

- Resources:
  - Hp Sensor
  - Anritsu Sensor