- Watt/SWR Meter (4 channel Peak/Average on forward and Reflected).
- Modulation Scope.
- Modulation Spectrum Analyser.
- Station Voltage/Current Monitor.
- Auxiliary voltage Inputs.
- Digital Input/Output Monitors.

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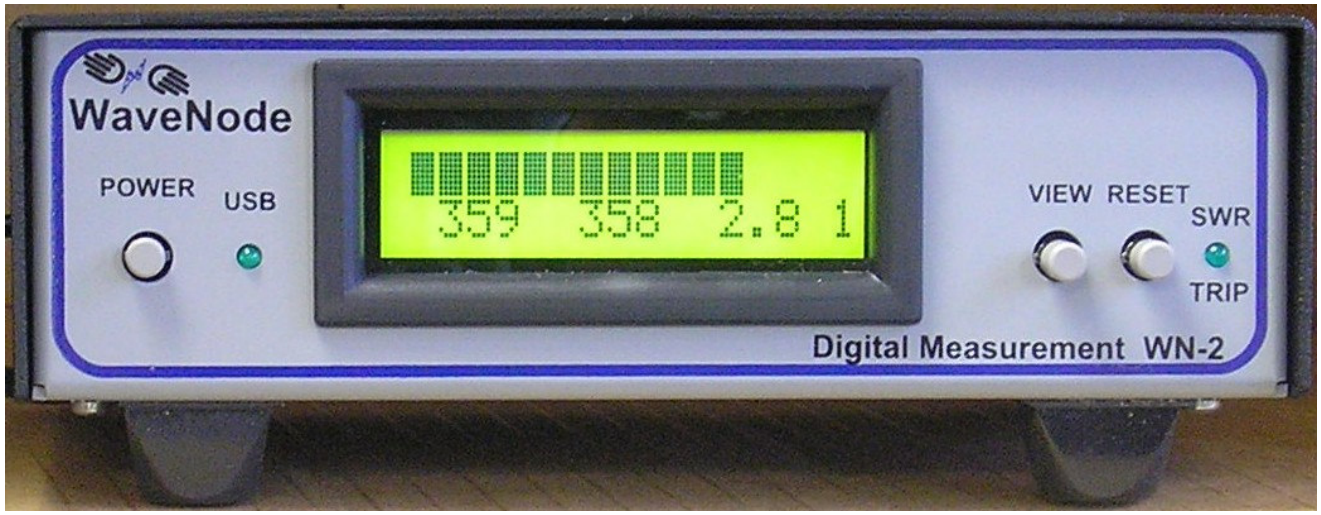
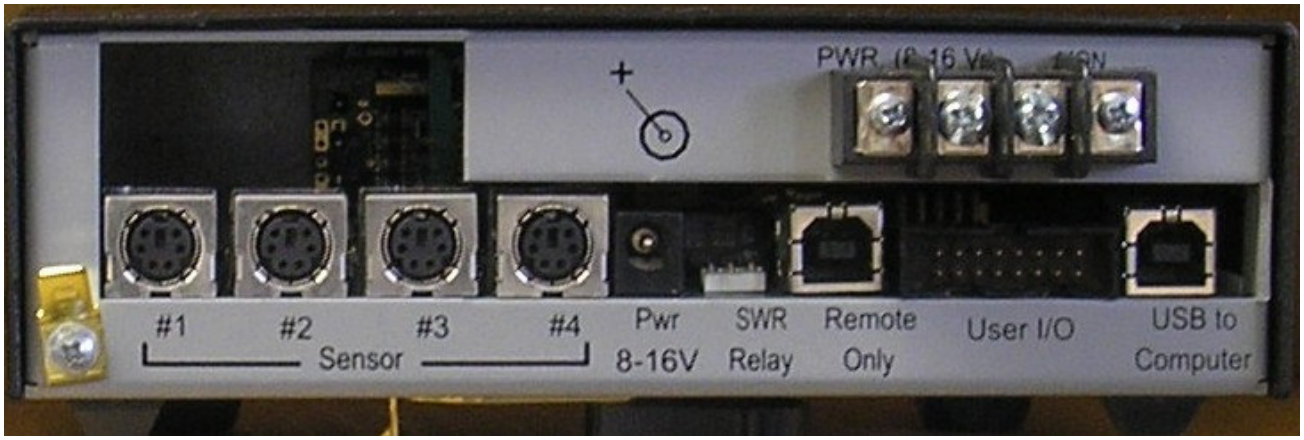
WaveNode WN-2

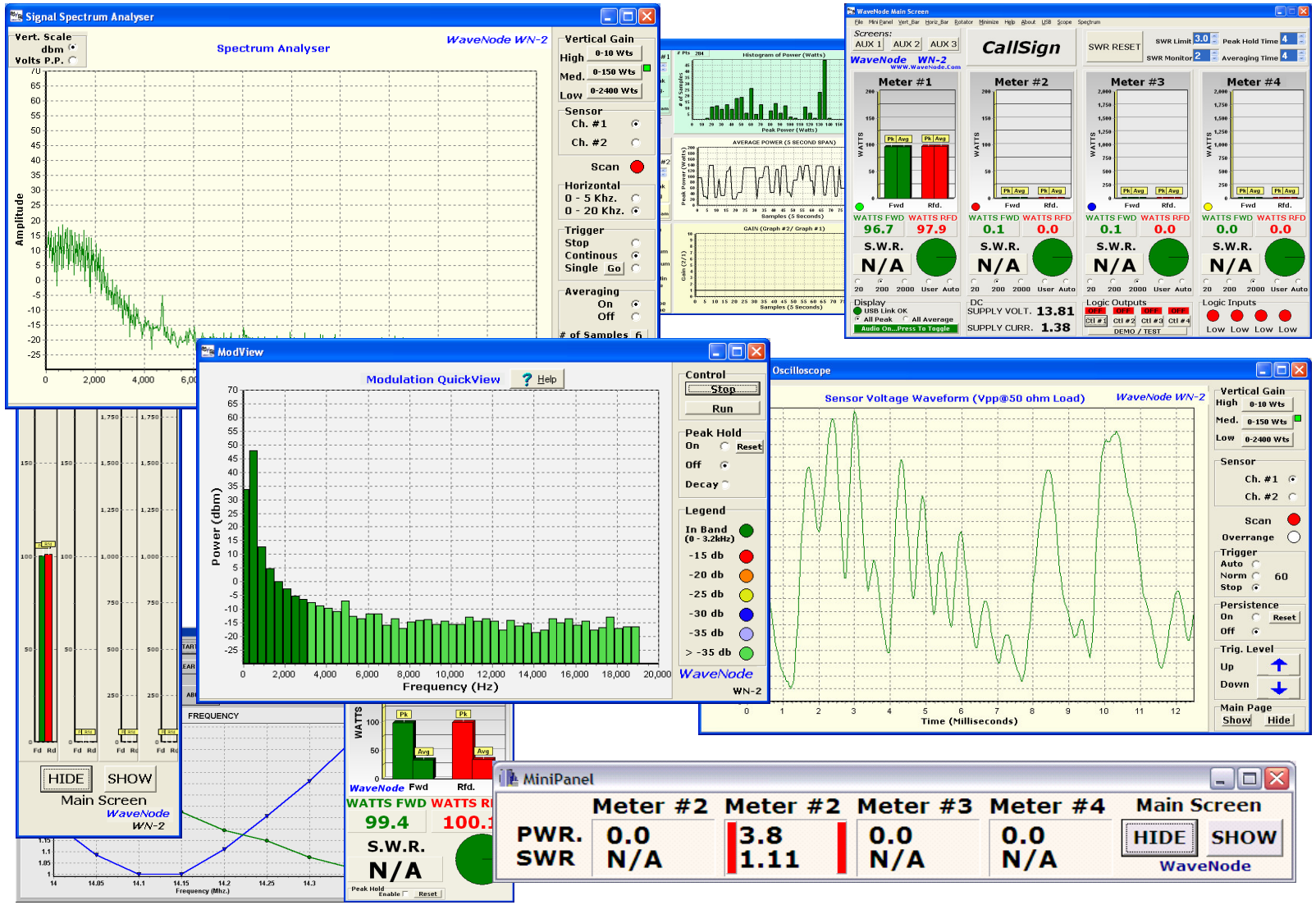


- Front View with RF present showing bargraph and Peak, Average and SWR



- Rear View showing coax sensor inputs
- Other connections for power input, SWR relay connector, Remote serial port, User I/O and USB port

Graphical Views Optimized for You



WN-2 Fills the gap between laboratory R.F. Instruments and “Digital Wattmeter”

- Simultaneous monitoring of RF power/SWR on four separate coax sensors.
- Calculates SWR, peak and average power for display on the built-in LCD display. A bargraph display of peak power is shown when the RF power exceeds 2 watts.
- Full-speed USB 2.0 computer interface.
- 16-bit RISC microprocessor, 12-bit A/D converter, and precision peak/ average detection circuitry for each sensor.
-
- 40 Khz sampling of the RF envelope provides a digital Oscilloscope view of the modulation envelope
- Spectrum Analysis monitors the data content and bandwidth of the modulation speech or data stream. Monitor Intermod and splatter real-time as you operate.
- Additional monitoring circuitry is provided for station DC voltage/current.
- Four digital inputs and four digital outputs allow monitoring and control with remote PC.
- Four additional analog inputs allow real-time monitoring on the local LCD display or remotely through USB interconnect to a host PC.
- Relay provided to trigger on excess SWR for equipment protection.
- All data viewing and control can be done locally or remotely via PC.

Sensor Selection

Choice of SO-239 or "N" type RF Connectors

- HF-1: 0-2,000 Watts (1.6-60 MHz.)
- LP-1: 0-80 Watts (1.6 - 60 MHz.)
- 8KW: 0- 8,000 Watts (1.6- 40 MHz.)

(Optional RFView port on All HF Sensors)

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- UHF-1: 0-300 Watts (140-470 MHz.)
- UHF-2KW: 0-2000 Watts (120-170 MHz.)

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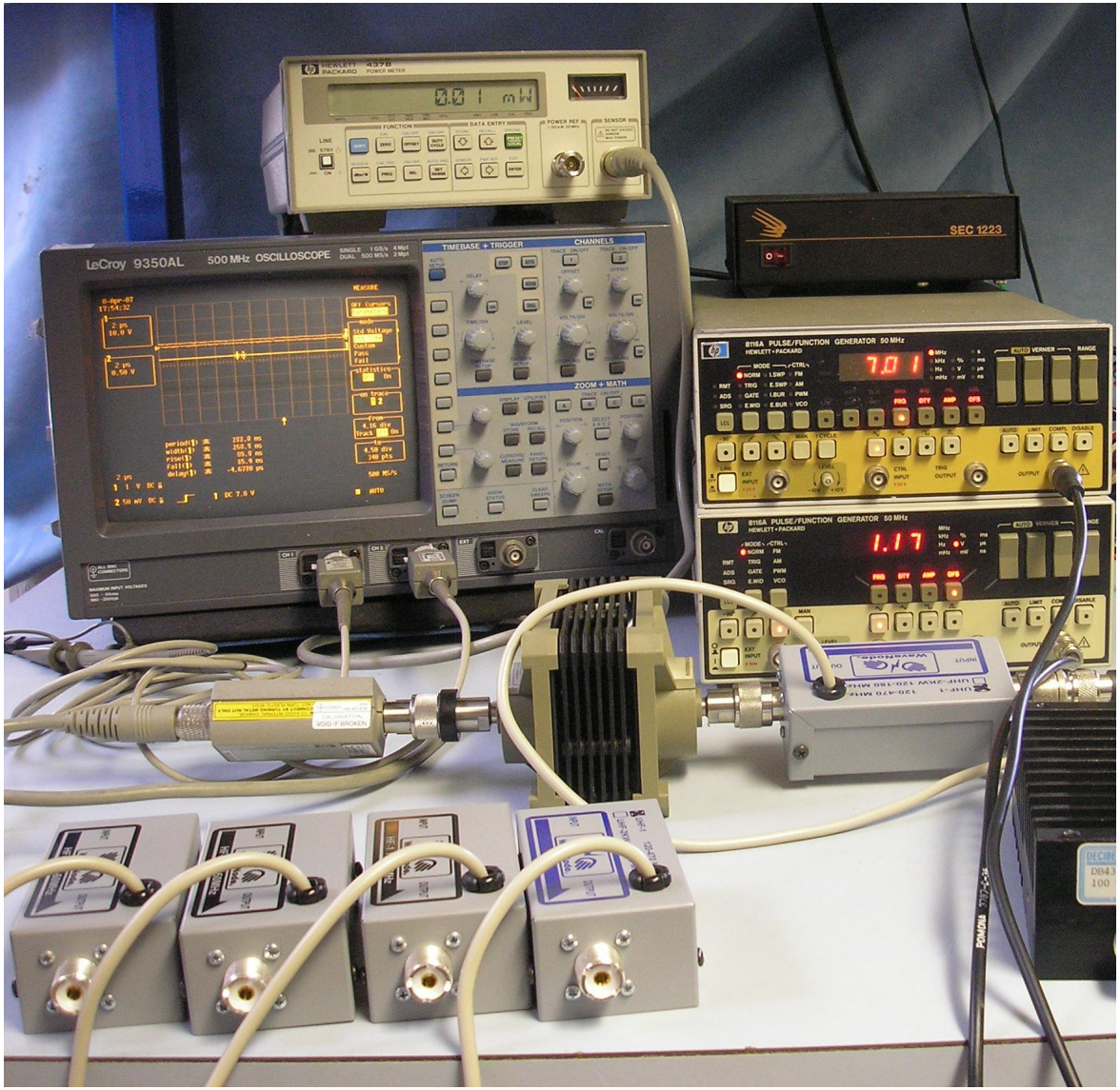
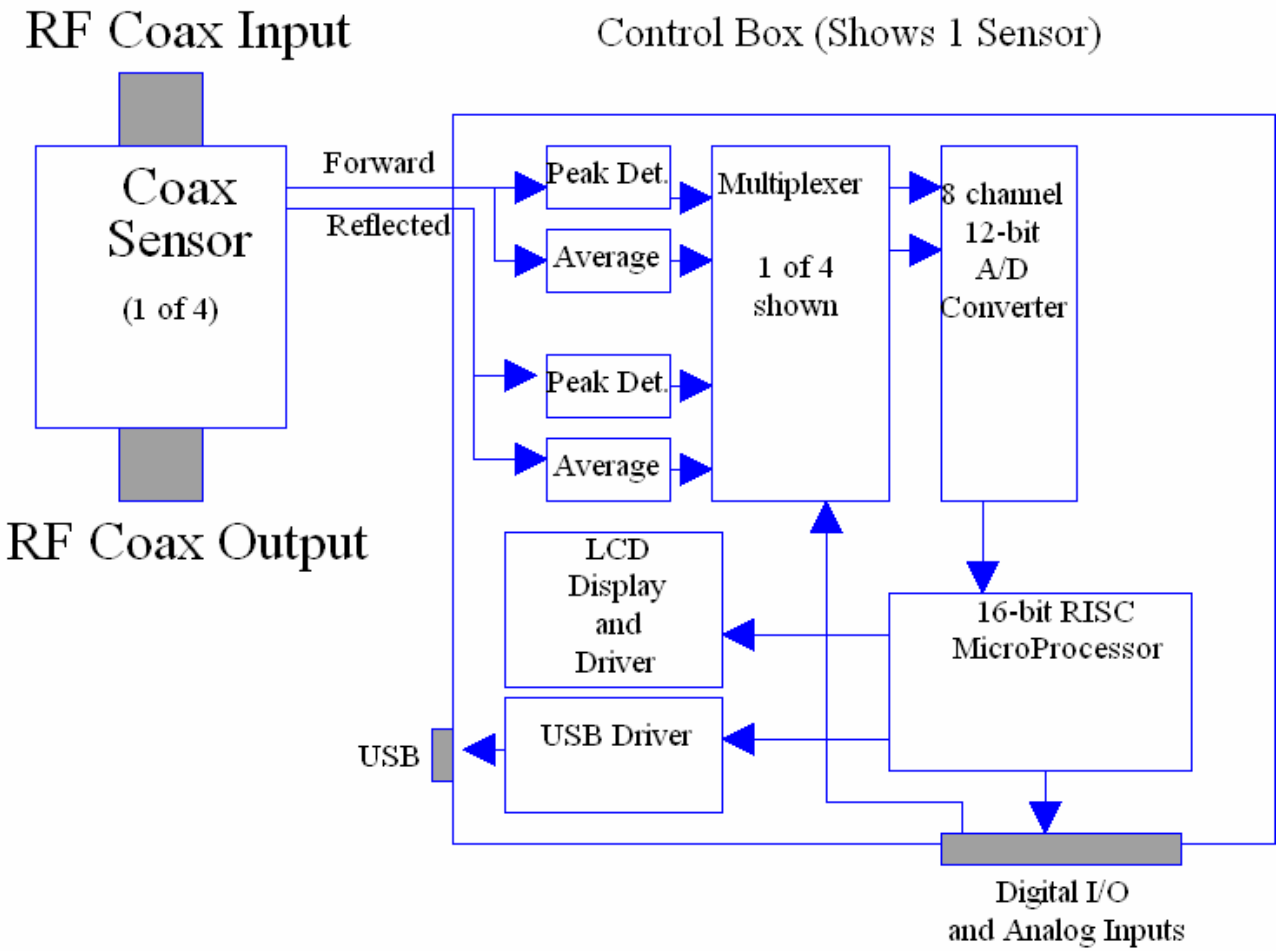
WaveNode Test/Calibration

- 3rd Order Polynomial Wattmeter Calibration Curve-fit.
- NIST traceable Calibration with HP Model 437B power meter and matching 8482B Detector with 30 db attenuator. Every WaveNode sensor is measured and calibrated on this system.
- LeCroy 9350AL Digital Scope and FET probe used for cross-check.

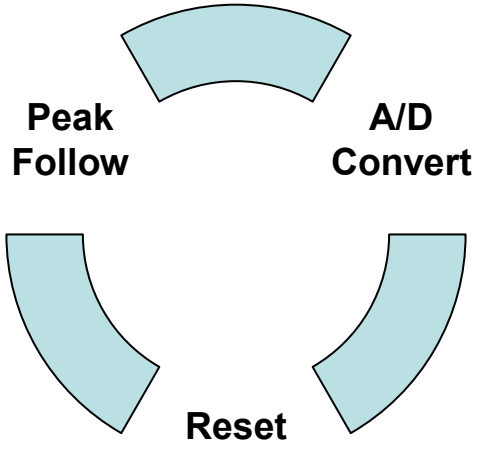


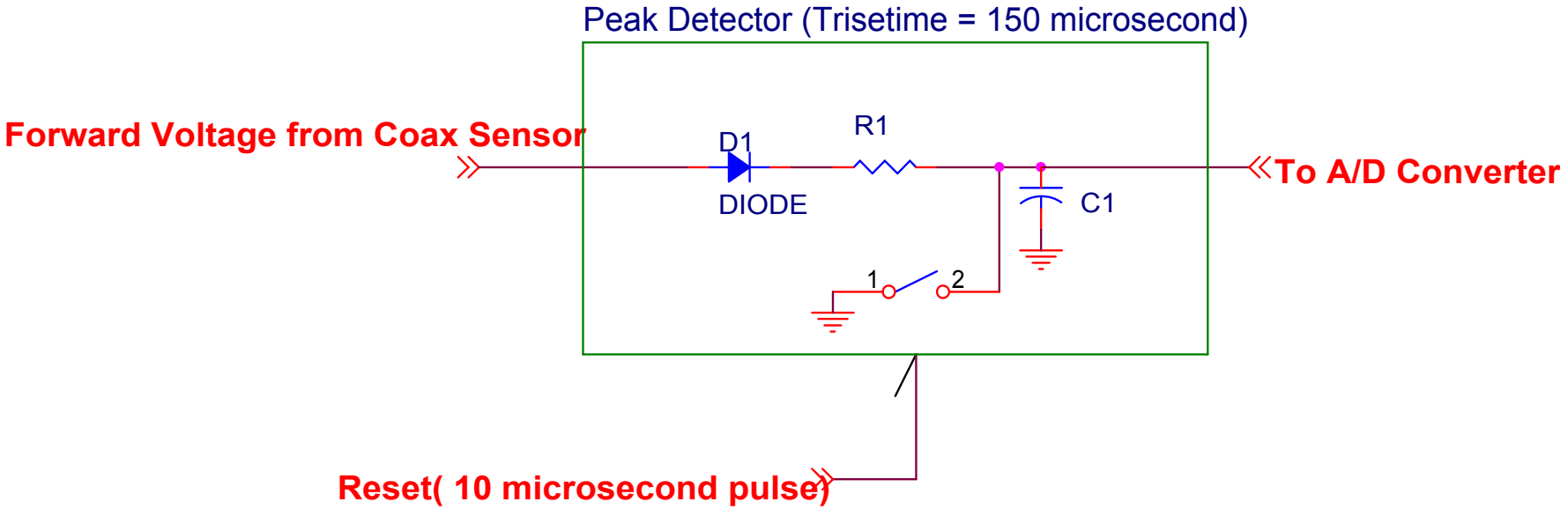
WN-2 Block Diagram



Peak Detection

- Peak capture, conversion, Reset 20 times per second.
- Each Sample is Independent of the Previous.

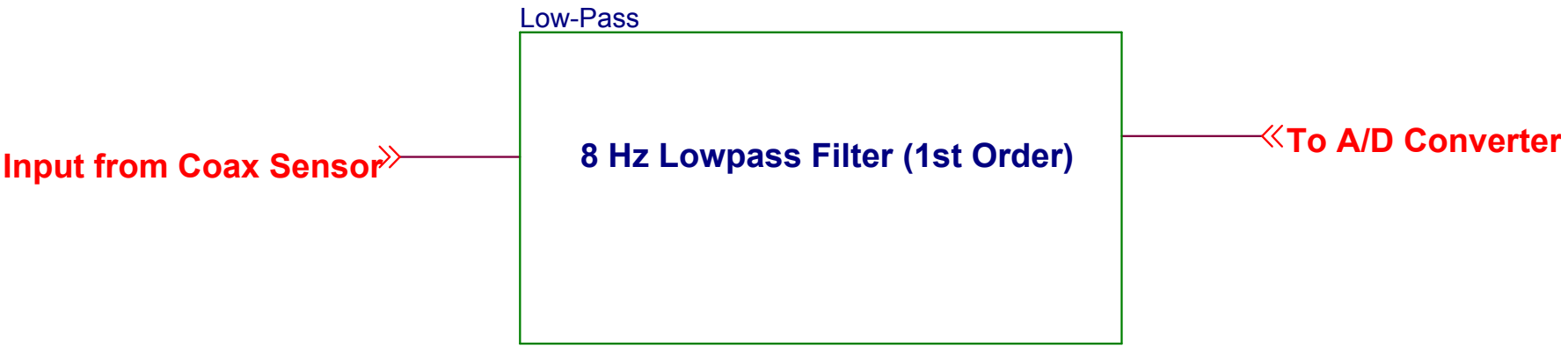




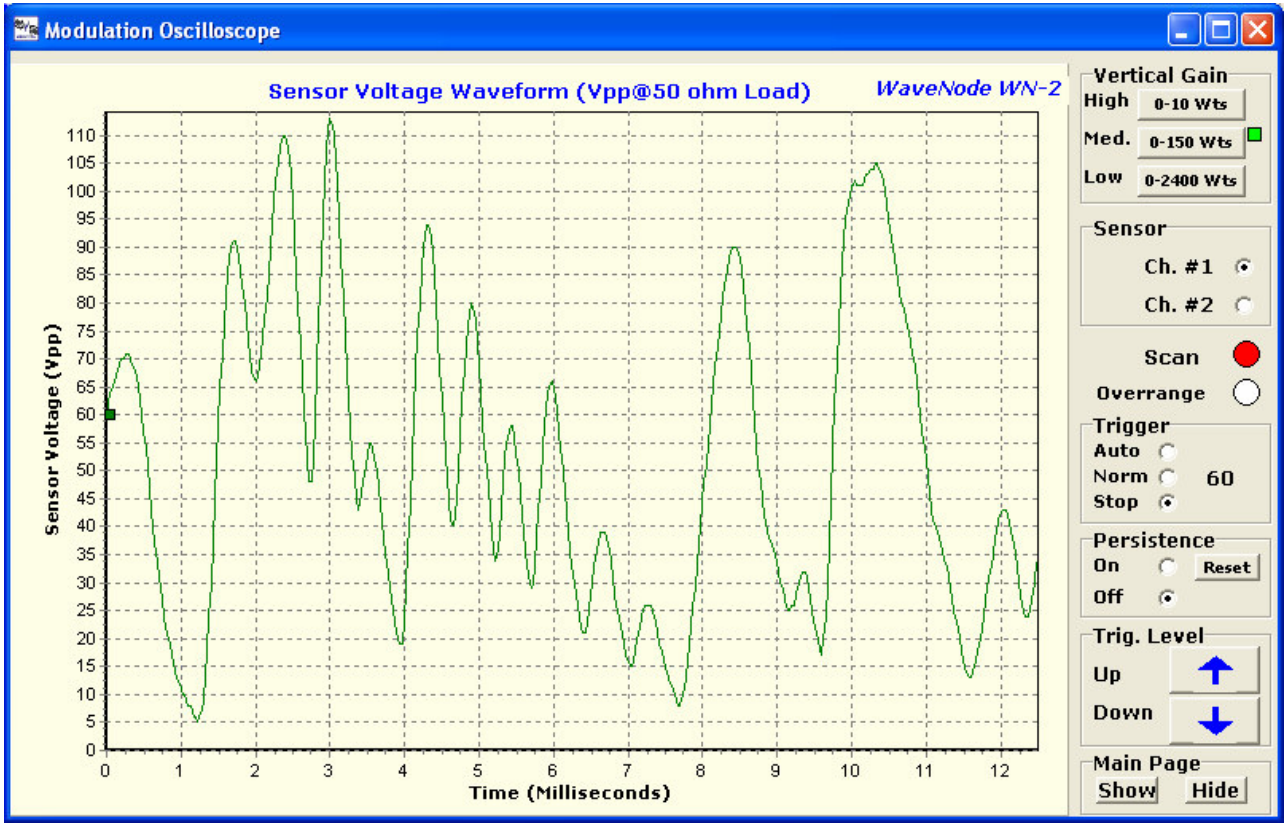
•Simplified schematic of Peak Detector.

Average Power Measurement

- 8 Hz Lowpass filter.
- 20 Sample/second f_s.
- **Basic Rule:** Don't violate Nyquist sampling criteria to obtain accurate results.



Modulation Scope

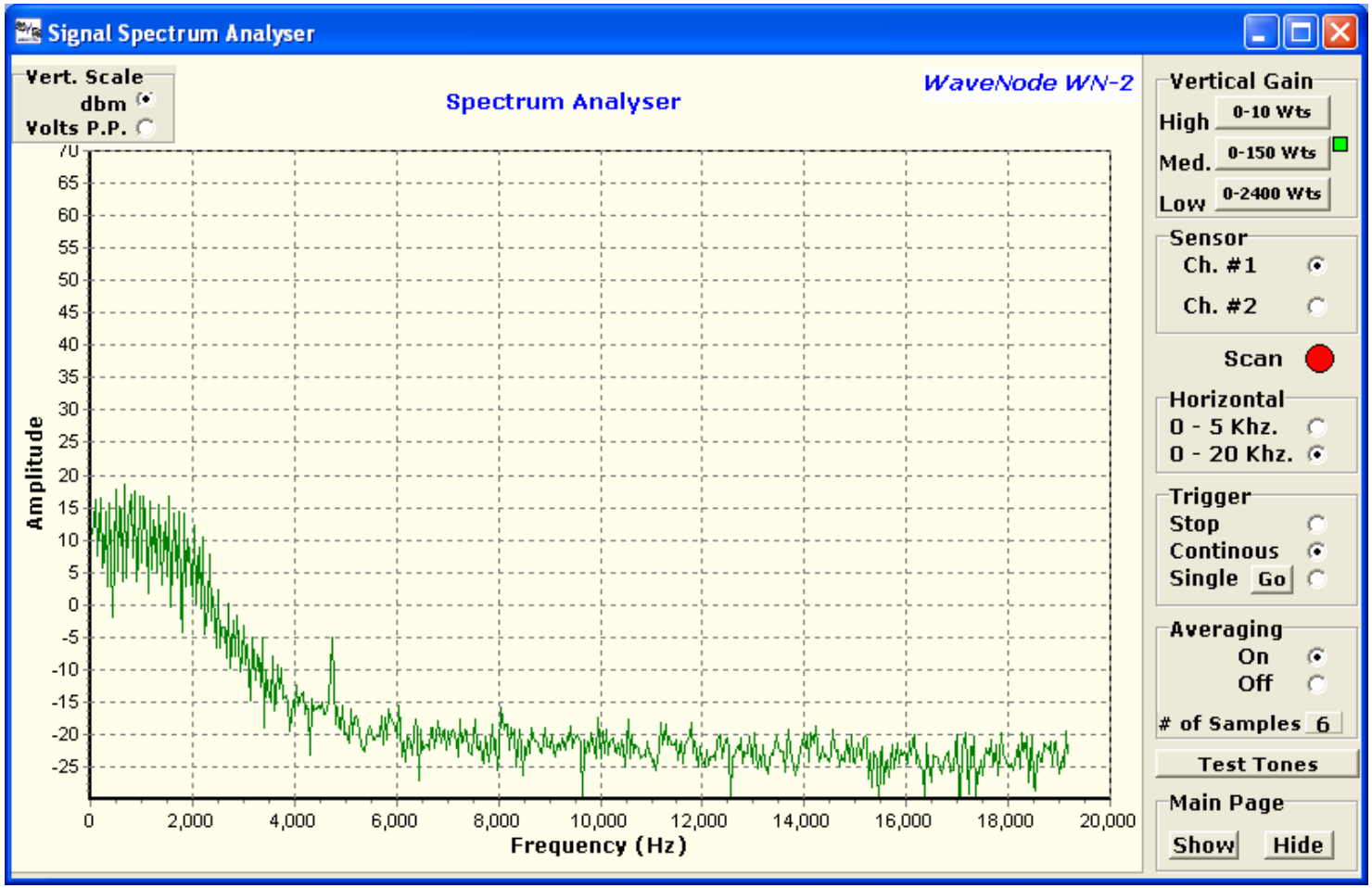


Modulation pattern on SSB.

Scope shows actual RF Voltage at the coax in Volts Peak-Peak.

The scope hardware/software is in the WN-2. Your soundcard is NOT used.

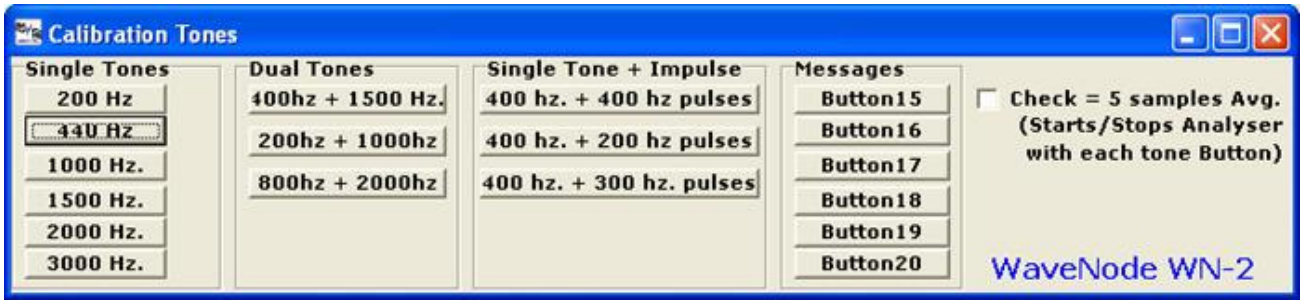
Spectrum Analyser



The Spectrum Analyser uses FFT algorithm of 1024 samples @ 40Khz.

Has the features found in a laboratory Instrument for sound/distortion Analysis

Test Tones Menu



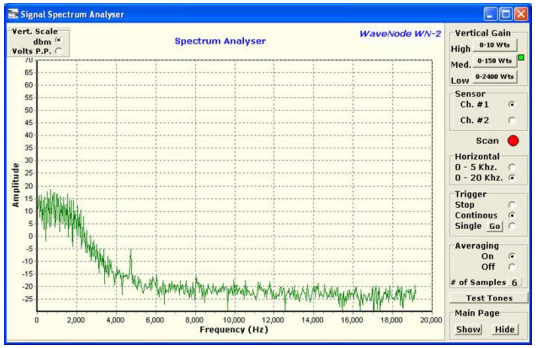
• Uses your sound card and Rigblaster (or equivalent) to provide Sine, Pulse+Sine, Dual Tones for measuring IM, transmitted bandwidth, and Messages.

•Pressing the button activates the tone for 3 seconds, and the results can be viewed on the Spectrum Analyser or Oscilloscope.

•Perfect for observing Linear Amplifier output without the use of a function generator.

Question: Why pulse+sine Modulation?

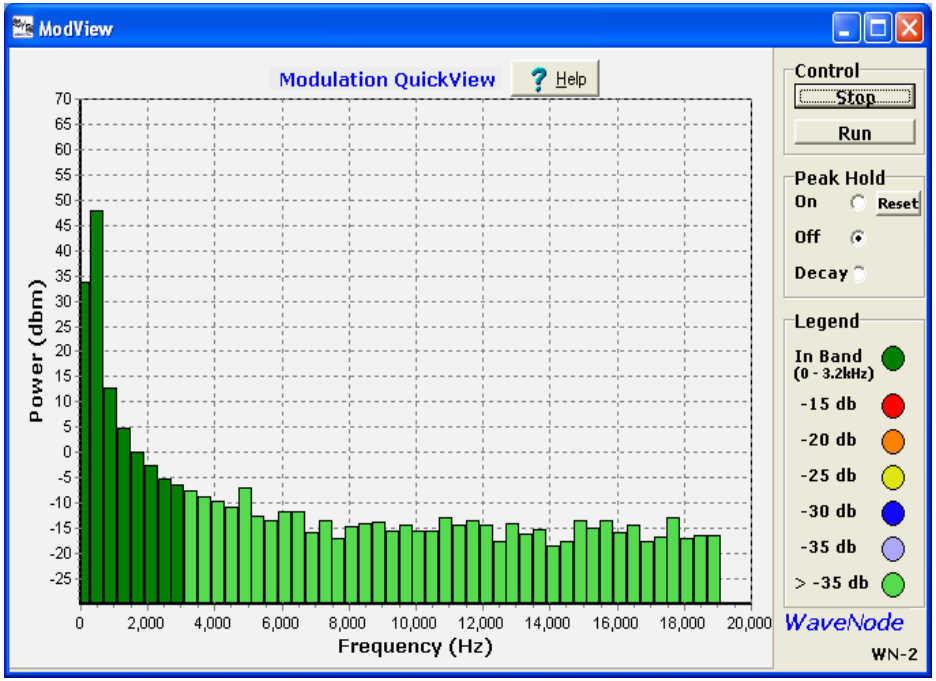
Answer: The pulse energy spreads audio energy from 0-20Khz into the input, and allows observation of the transmitter bandwidth immediately with the Spectrum Analyser.



Pulse + Sine function Input

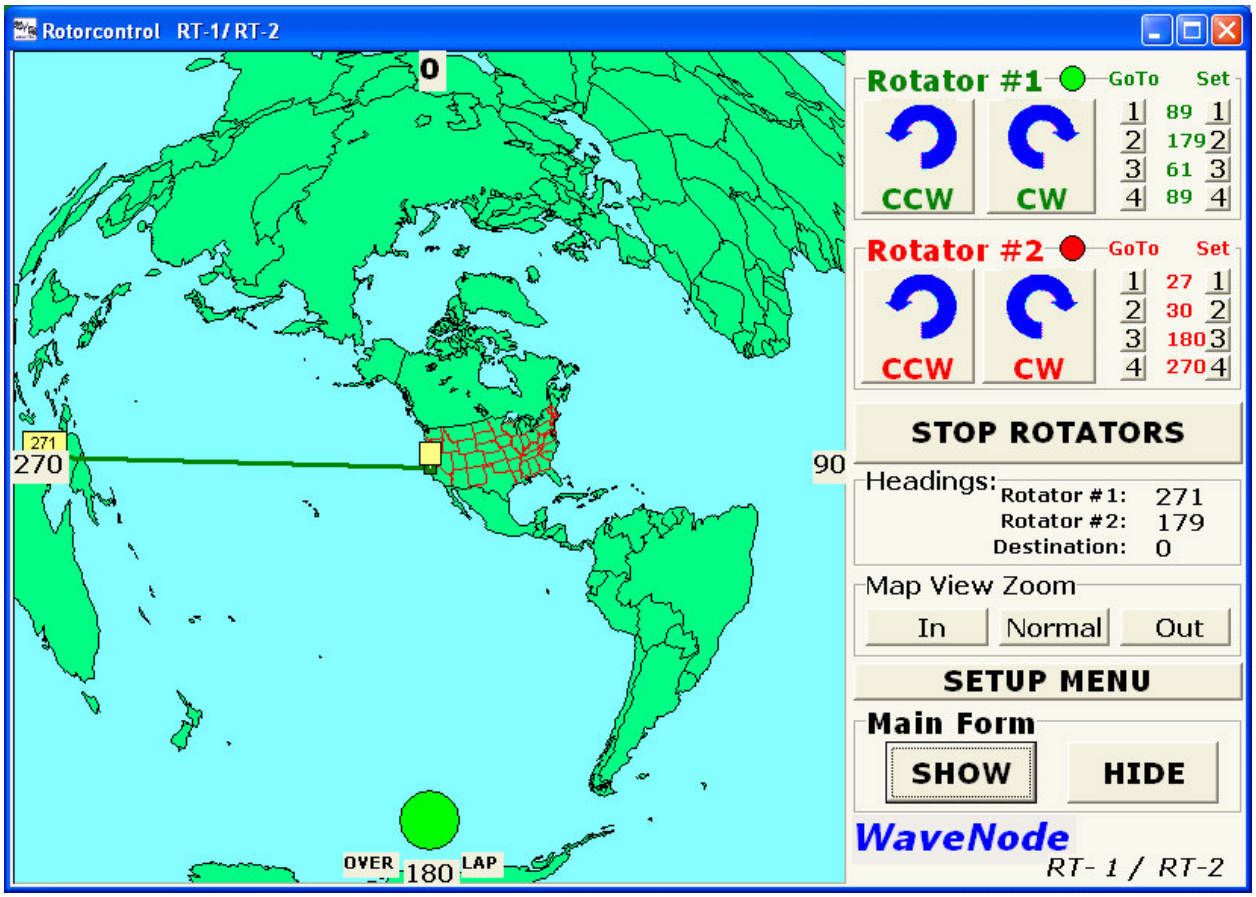
QuickView Modulation Spectrum

- **The one you'll use with every QSO:**
- Fast ,continuous viewing of IM and Splatter components into adjacent frequencies.
- The energy is divided into 400Hz segments and compared to DC -3 KHz energy.



A typical SSB energy spectrum

Optional Yaesu Rotator Control



- **Single/ Dual Rotator Control and View**
- **Map View Customized to your QTH**
- **No Alignment necessary.**
- **Click on Map to Send your Rotator to a new Position**

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Review

- Expandable
- Real-time R.F. Diagnostic and Monitor tools
- Commercial, rugged construction.
- Software upgrades are always provided free of charge on our website.
- Add sensors, rotator controller, or other accessories as you need them.