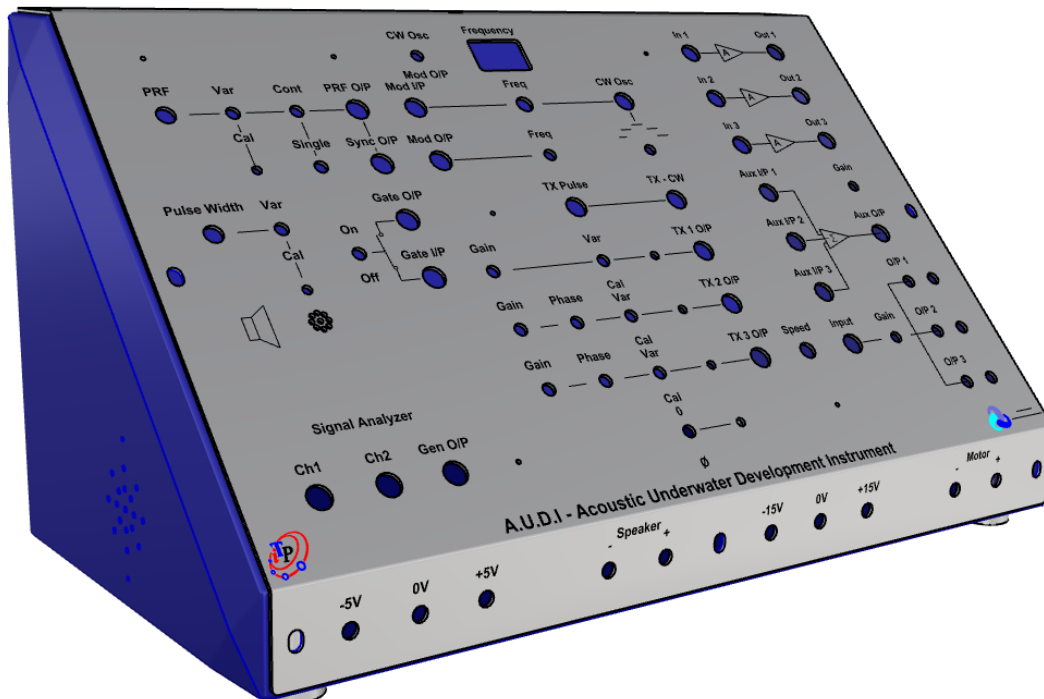




A.U.D.I – Acoustic Underwater Development Instrument

A complete Test /R&D solution for Hydrographic and Marine engineering.



Brief Description:

The **A.U.D.I - Acoustic Underwater Development Instrument** was designed for R&D work at the request of University marine engineering departments, and hydrographic underwater research establishments. The **A.U.D.I** provides access to a wide range of transducer drive signals which can be pre-set (Cal), or continuously variable (Var).

A built-in **USB** or **WiFi** (option) connected instrument, provides a dual channel, high resolution data acquisition **Signal Analyzer** with an **Arbitrary Waveform Generator (AWG)** and enables all signals to be monitored/analyzed. The new **A.U.D.I Multi Channel Software** creates a full range of virtual instruments – **Oscilloscopes, Spectrum Analyzers, Multimeters, Data logger** - on a Windows 10 OS PC/laptop.

The **A.U.D.I** can also be used for **SONAR/ASW** training, as a demonstrator, and to give students hands-on experience with **real-time** Active/Passive SONAR configurations.

A.U.D.I can work with the Acoustic Tank and all accessories associated with the '**Acoustic Systems Trainer-SONAR**' - see <http://itp101.com/acoustic-systems-trainer/>

A.U.D.I Features:

- Integrated high resolution PC Data Acquisition Signal Analyzer & AWG.
- Variable/Calibrated Pulse Repetition Frequency (PRF) - <.5 meter and >6 meters.
- Variable/Calibrated Pulse Width (PW) Continuous or Single shot - <10 µsecs and >2 msecs.
- Variable/Calibrated CW Oscillator frequency - <35 kHz and >300 kHz.
- Frequency display.
- FM Modulation input – dc to 100Hz.
- Switched Gate & Sync Output
- Three transducer drive amplifiers Tx1, 2, 3 with variable Gain.
- Variable Phase, plus cascade Phase on Tx 2 and Tx 3, referenced to Tx 1 Output.
- Three High Voltage parallel outputs - 60 volts pk-pk max.
- Auxiliary Amplifier with three inputs and Gain control.
- Three fixed gain (x 5) general purpose amplifiers 'A'.
- Motor Speed control voltage – 0 to 12volts dc at 1 amp.
- Access to +5, -5, +15, -15 volts dc for external R&D, custom circuitry.

USB powered Signal Analyzer:

This function of the **A.U.D.I** is independent of the rest of the panel, and can be used for signal analysis/generation, without power being applied to the **A.U.D.I**

Signal Analyzer in brief:

- PC/laptop, dual channel Data Acquisition Signal Analyzer – USB 2.0 -3.0
- Sample rate – 500 Ms/sec with 14 bit dual channel resolution
- Resolution selectable – 12 to 16 bit (6 µV)
- Windows OS 10
- ASCII data files for exporting to other applications
- Oscilloscope, Spectrum Analyzer, True RMS Voltmeter
- Data Logger – 21 minutes to 750 days
- Spectrum lin/log and volts/dB axis
- FFT Windows – Rectangle, Hanning, Hamming, Blackman, Bartlett
- FFT points – 16 to 32,768
- Distortion calculations – 1 to 100.
- Arbitrary Waveform Generator (AWG) – 14bit resolution
 - Frequency range – dc to 40 MHz with .01 Hz frequency step
 - Output impedence - 50 Ohms
 - Output signal amplitude - >20 volts pk-pk
 - Sine, Square, Triangle, Noise, DC, and User Defined waveforms
 - Variable Symmetry (Mark to Space ratio)– 1 to 99% in 1% steps
 - Frequency Sweep control Lin/Log.
 - Unique 'Object Tree' programming