

Tricks of the Trade - 2

I have been studying the phenomena currently called EVP (Electronic Voice Phenomena) since 1976. Back in those days it was known as a Raudive Voice, named for Dr. Konstantin Raudive, an early EVP researcher. Recently, due to advancing technology and some expendable income, I was able to determine just exactly what an EVP really is. But the story for me begins in 1978, when I rigged up my first Bell Jar, installed a small dynamic microphone inside it, ran the mic cable through a hole in a rubber stopper, sealed it with tub seal, evacuated the air, and captured an EVP in near vacuum. Since sound needs air to propagate, this was my first clue that EVP was NOT sound at all. And while I had my suspicions, it would take a long time before I could discover what it really was. That answer began to unfold in 2004.

Most people are familiar with the EMF meter or gauss meter. It basically gives you a read out of an electromagnetic field in milligauss. But what if you could see the frequency of that magnetic field? Well, you can. Not only can you see the waveform, you can know its exact frequency, or set of frequencies. This is the first step in how I discovered that EVPs are electromagnetic fields modulating in the audio frequency spectrum.

Here is the equipment I assembled to discover this:

The Sensor

Magnetic Sciences

MC95 Magnetic Field Sensor

(from the manufacturer's website)

- Converts an alternating magnetic field into an AC output voltage
- The AC output voltage is calibrated to the magnetic field strength
- The frequency of the AC output voltage is the same as frequency of magnetic field
- Output AC voltage is 1 mV per milliGauss, over a very wide frequency range
- 25 Hz to 3 kHz is the 3dB bandwidth
- Each sensor undergoes NIST traceable calibration to ensure accuracy:
- +/- 3% typical calibration tolerance (+/- 5% worst case) from 50 Hz to 1000 Hz
- Calibrated to ANSI Standard 644-1987. Certificate included.
- Sensor has practically no internal noise and no active components
- Minimum measurable magnetic field: sensor has no minimum
- Maximum measurable magnetic field: sensor may be damaged above 30 Gauss
- Sensor orientation shows magnetic field polarization direction
- Accurately measures through eleventh harmonic with ANSI Standard 644-1987
- BNC (f) connector is on the sensor. We recommend using a cable to connect to your display instrument; a BNC to dual-banana cable is available for \$15.
- No battery or power supply needed for this sensor
- Size & Weight: 2"x1.5"x1" (5cmx3.7cmx2.5cm). Weight approx. 3.3 oz (95g).
- Includes Operating Instructions

This Extremely Low Frequency (ELF) and Voice Frequency (VF) single-axis magnetic field sensor provides a flat frequency response over a wide frequency range, resulting in

superior accuracy for measuring fields from electrical and electronic equipment, building wiring, electric machinery, computer monitors, office equipment, fluorescent lights, TVs, appliances, dimmer switches, power lines and harmonics, pumps, ceiling tracks, aircraft (400 Hz), ships, subways, electric cars and rail. Display instrument resolution of 0.1 mV AC or better is recommended for most applications.

Cost: \$ 95.

The Monitoring Device

Vellman HPS10 Personal Scope

The Velleman Personal Scope is not a graphical multimeter but a complete portable oscilloscope at the size and the cost of a good multimeter. Its high sensitivity - down to 0.1mV/div - and extended scope functions make this unit ideal for hobby, service, automotive and development purposes. Because of its extreme value for money, the PersonalScope is well suited for educational use in schools and colleges. Suitable for measurements on audio equipment, mains voltage applications, digital signals, all kind of sensors, signal analysis in automotive applications, car stereo, etc... Its full auto setup function makes measuring waveforms very easy.

- 10MHz sampling rate
- 0.1mV sensitivity
- up to 2MHz analogue bandwidth
- 5mV to 20V/div in 12 steps
- 200ns to 1hour/div time base in 32 steps
- full auto set up
- trigger mode: run, normal, once, roll, slope +/-
- X and Y position signal shift
- DVM readout with x10 option
- audio power calculation (rms and peak)
- dBm, dBV, DC, rms ... measurements
- signal markers for Volt and Time
- frequency readout (through markers)
- recorder function (roll mode)
- signal storage (2 memories)
- LCD: 128x64 pixels / high-contrast
- up to 20h on alkaline batteries
- optional:
 - practical holster: BAGHPS
 - handcase: CASEHPS
 - adapter 9V / 500mA: PS905USA
 - power supply: 5 x 1.5V AA battery or Nicd / NiMH (not incl.)
 - includes battery charging circuit

Cost - \$189.99

I placed the sensor on the end of a non-conductive wand (I used a dowel for this, but any wooden or even plastic stick will do. My friend used a mop handle cut down to about a foot in length) ran the BNC cable down the length of the dowel and into the

scope. (Later, I would use a modified plastic D cell flashlight body to make a nice hand held package). By running a recorder and documenting the wave files a correlation was made between magnetic wave files and recorded audio wave files. (For the experiment I performed I used a scope that had a memory function so I could save the wave file and upload it to my laptop for comparison to the audio wave file). I would later use a much more detailed apparatus to record the wave forms and do a comparison to make an exact match of the EMF wave to the audio wave, and this is covered in the EMF-EVP Correlator article. BIG TIP!

Audio recorders are capable of recording EMF that ranges from 20 Hz to 20 KHz in Frequency. Audio recorders can therefore be a very inexpensive dual use data recorder.