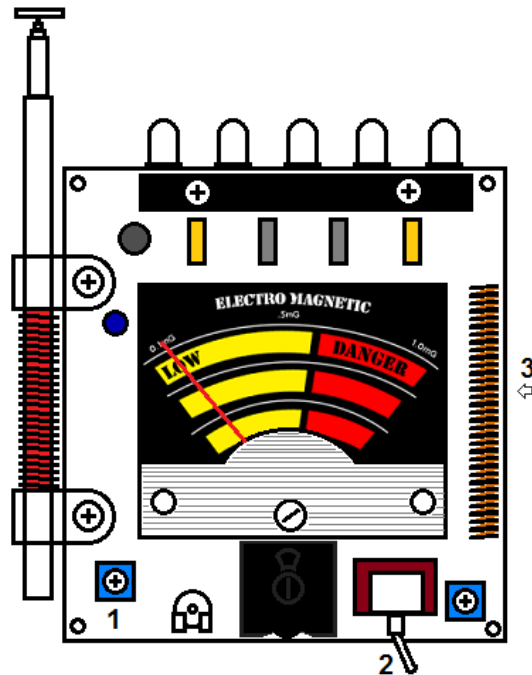# EMF Reader Mode Selection

Thanks for purchasing the EMF Reader prop. This manual will outline what modes the EMF Reader is capable of, how to access them, and maintenance notes.

Circuit Outline

1. **Needle Calibration Screw Wheel**, Sets high position
2. **Toggle Switch**: Three-position toggle is used to switch between modes.
3. **Hidden Button**: Located on the back of the EMF Reader, use this button to override normal EMF operation and force a high event.

How to Enter	Primary Modes	Alternate Modes*
Prop Modes Change toggle switch to the right position.	Pressing the hidden button will activate the sound and light pattern.	Sound and light pattern will run in a loop, cycling between high and low readings.
Interactive Modes Change the toggle switch to the left position.	Press the hidden button to activate the meter. Meter and lights stay high until the button is released.	EMF Reader will always read as high until the hidden button is pressed.

*Hold the hidden button while power cycling to enter an alternate mode.

**In modes that do nothing until the button is pressed, lights will blink every few seconds to indicate the meter is on.

Meter Calibration

Left blue screw wheel calibrates the analog meter needle high position. Place the EMF Reader in interactive mode, and hold the hidden button. This will hold the meter needle high. While holding the button, use a screwdriver to adjust the needle's high position.

Adding Sounds

Adding new sound effects to the EMF Reader is simple. Just plug into the usb port to a pc. The EMF Reader will mount as flash storage on the pc. Drag and drop the new .wav or .ogg file, then "eject" to safely remove the usb device.

Sources:
https://learn.adafruit.com/adafruit-audio-fx-sound-board/copying-audio-files
https://learn.adafruit.com/adafruit-audio-fx-sound-board/creating-audio-files

Next step is selecting the new sound on the EMF Reader. The EMF Reader reads the first 5 files in storage and maps them.

To select the new sound, turn on the EMF Reader then move the mode select toggle switch to the center position. There is no center position, so you will have to balance it there. When you have correctly set the center position, the light on the back of the reader will rapidly flash.

With the EMF Reader in setup mode; press the button on the back to cycle through any of the first 5 files. When the correct file plays, flip the toggle switch to exit setup mode.

Troubleshooting

Meter does not sweep or sweeps too high

1. Needle is touching the back. Use a tweezers to push away, bending slightly out.
2. Meter potentiometer needs calibration. Turn the left blue screw wheel with a screwdriver until the potentiometer operates properly.
3. Debris has gotten stuck in the meter's electromagnet. Gently spin the magnet and ensure that it doesn't "catch" anywhere. Even something as small as a hair can prevent free spinning.

Sound is garbled and sounds bad

1. Voltage to the speaker amp is too low. Replace the batteries.

Note: Be sure to use good batteries. Recommend: Energizer Ultimate Lithium.