Topics

1. Probe multiplication and compensation
2. Floating ground vs non-floating ground
3. Terminated vs non-terminated output
4. AC vs DC coupling
5. DC offset

Today, we learned about using the Agilent oscilloscope and how to configure and set it up properly for the probe we are using. It was a 10:1 ratio, and initially, we had it at a 1:1 ratio so when we provided an input of 1V but it was only measuring 100mV but when we changed the ratio, this was fixed. We also learned that because different probes have different ratios, you have to compensate for the signal that the oscilloscope makes by compensating the signal to look nice and square using a square wave. This way we make good and accurate measurements using the probe. With regard to floating vs non-floating ground, non-floating ground would be a ground that is connected to the Earth, so it is important to use non-floating ground or floating ground consistently or else you'll most likely end up with funky results. Terminated vs non-terminated output refers to telling the oscilloscope what resistance it needs to account for from the probe. What we learned from looking at the description of the probe was that it has a 10MΩ resistanc, so we need to set the oscilloscope to high-z when using it rather than 50Ω like some probes. We also learned that DC coupling measures both DC and AC, but AC coupling blocks the DC signal to help measure AC signals. A DC offset can be useful when using the oscilloscope because you can shift the AC signal vertically. According to a user on Quora, the DC offset is important to pay attention to because it can distort the audio signal. "Most audio programs have an option to remove DC offset. If they don't, you can generally run a highpass filter as a very low frequency (sub audible - maybe 10hz?) and that will remove the dc offset."

Https://Www.Quora.Com/What-Is-the-DC-Offset-in-Audio#:~:text=A%20DC%20offset%20is%20generally,The%20power%20from%20the%20mix.