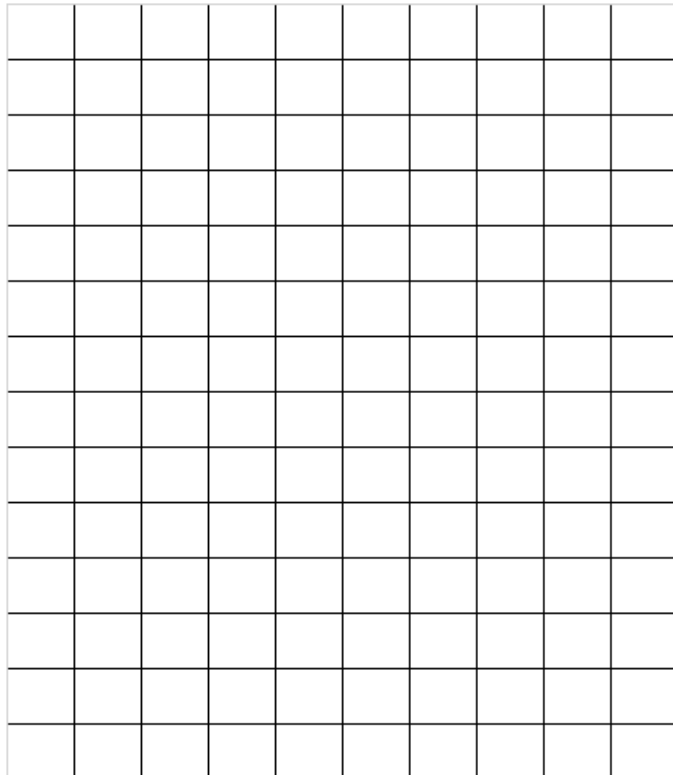


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Experiment 5
Amplitude Shift Keying

Part A- Generating an ASK signal

Proceed to step 12. Draw the digital signal (CH0) and the ASK signal (CH1). (10p)



Please write Vpp values of both signals and don't forget remark which signal is digital signal and ASK signal.

QUESTION1:

What is the relationship between the digital signal and the presence of the carrier in the ASK signal? (Write your comments comparing signals frequency values, dc component etc.) (10p)

QUESTION 2:

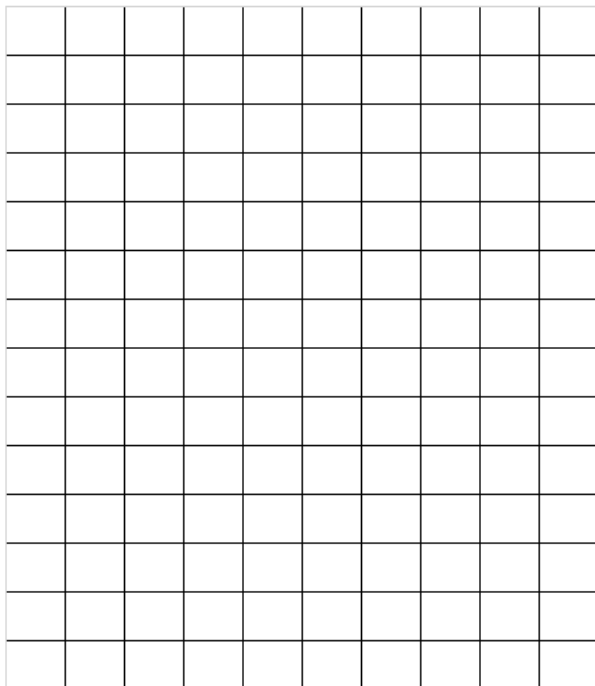
What is the ASK signal's voltage when the digital signal is logic-0? (5p)

QUESTION 3:

We want to demodulate ASK signal. Propose an alternative demodulation method using Emona Datex modules.

Draw the demodulation block diagram. Note that necessary values and properties.(15)

Proceed to Step-13. Draw the digital signal (CH0) and the ASK signal (CH1). (10p)



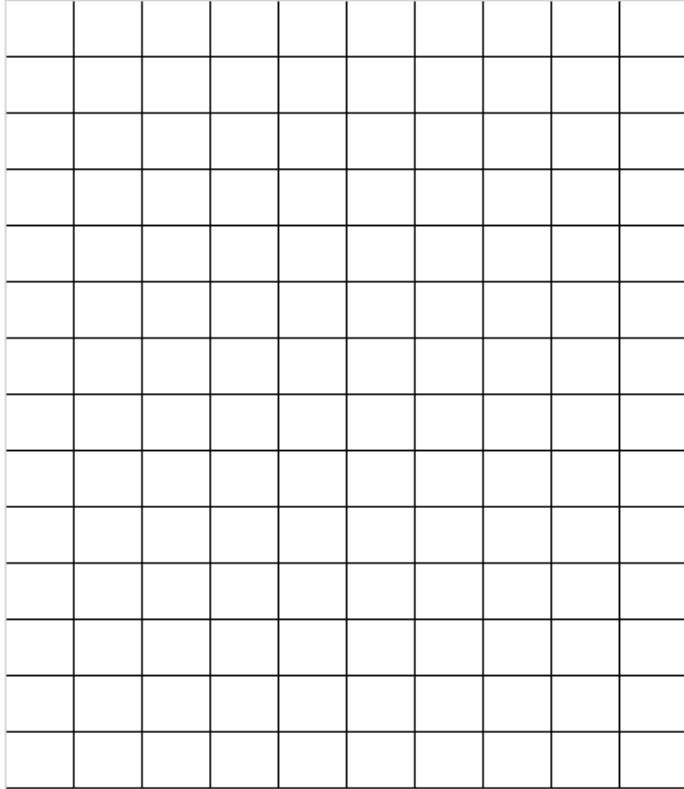
Please write Vpp values of both signals and don't forget remark which signal is digital signal and ASK signal

QUESTION 4:

What feature of the ASK signal suggests that it's an AM signal? Tip: If you're not sure, see the preliminary discussion. (10p)

Part B- Demodulating an ASK signal using an envelope detector

Proceed to Step-19. Draw the digital signal (CH0) and the demodulated ASK signal (CH1). (10p)



Please write V_{pp} values of both signals and don't forget remark which signal is digital signal and demodulated ASK signal

QUESTION 5:

Why is the recovered digital signal not a perfect copy of the original? (5)

Part C- Restoring the recovered digital signal using a comparator

Proceed to Step-23. Draw the original digital signal and the restored digital signal waveforms as below.(10p)

