

QAM & QPSK - Preparation

• Name:

Lab Date:

• Student No.:

Day of the week:

Time:

1. Draw a block diagram for the 16-QAM transmitter, from an A/D converter to the quadrature amplitude modulated signal to be input to a channel. Give details on how to operate on the baseband signal prior to mixing with the carriers.

2. Explain the purpose of splitting the signal into an in-phase component and a quadrature component. Does this explanation apply to both modulation schemes?

3. Now draw a block diagram of the QAM receiver (for the transmitter you presented above). Assume that the received signal is not corrupted at all. Sketch the signal constellation and the eye pattern.

4. Sketch the signal constellation if there is a small amount of phase noise as well as AWGN (white noise) added to the signal.

5. Give examples of systems that utilize QAM and QPSK.