



Data Communication Tutorial 04

Digital Signal Coding

1. A signal is carrying data in which one data element is encoded as one signal element .
 - a. If the bit rate is 100 kbps, what is the average value of the baud rate if the average case factor=0.5?
 - b. sketch signal time domain for the following data stream [0 0 1 0 1 1 1], using polar-NRZ scheme, and bi-polar RZ.

2. What is the difference between polar-NRZL and polar-NRZI. Draw time domain signal for the following binary stream [0 1 0 0 1 1 1 0 0 0 1 0]

3. sketch the frequency domain of Polar-RZ coding scheme, then sketch time domain signal for the following binary stream [0 1 0 0 1 0 1 0 1 0 1 1 0 0]

4. sketch signal time domain of Manchester and differential Manchester scheme of the following binary stream [0 1 0 0 1 0 0 1 1 1]

5. we can use AMI scheme to send twice of data rate using the same band width polar RZ scheme. Justify with example.

6. in Multilevel: 2B1Q scheme, using the following transition table

Next bit	Next level (previous level is +ve)	Next level (previous level is -ve)
00	+1	-1
01	+2	-2
10	-1	+1
11	-2	+2

Sketch signal time domain of the following binary stream [00 11 01 10 01 11 00 10 10 01]