Unipolar RZ & NRZ:

EC Academy

RZ → Return to zero

NRZ → Not Return to zero

Polar → Polarity uni → one (+ve)

Waveform will have single polarity

T_b → one bit duration.

Unipolar RZ:

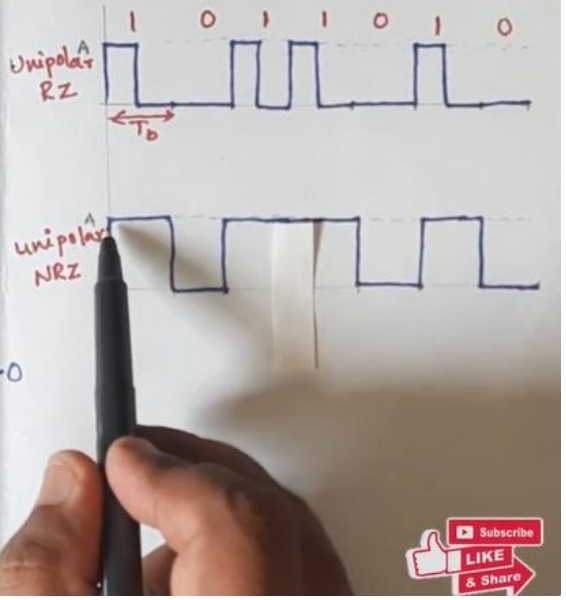
Symbol 0 → 0 → Complete T_b

Symbol 1 → A → for $T_b/2$ period & remaining $\frac{T_b}{2}$ period → 0

Unipolar NRZ:

Symbol 0 → 0 Complete T_b

Symbol 1 → A Complete T_b



Polar RZ | NRZ, Bipolar NRZ & Split phase Manchester:

EC Academy

Polar RZ:

Symbol 0 → $-\frac{A}{2}$; $\frac{T_b}{2}$

0 ; $\frac{T_b}{2}$

Symbol 1 → $+\frac{A}{2}$; $\frac{T_b}{2}$

0 ; $T_b/2$

Polar NRZ:

Symbol 0 → $-\frac{A}{2}$; T_b

Symbol 1 → $\frac{A}{2}$; T_b

Bipolar NRZ:

Successive 1's → alternative polarities

Symbol '0' → no pulse.

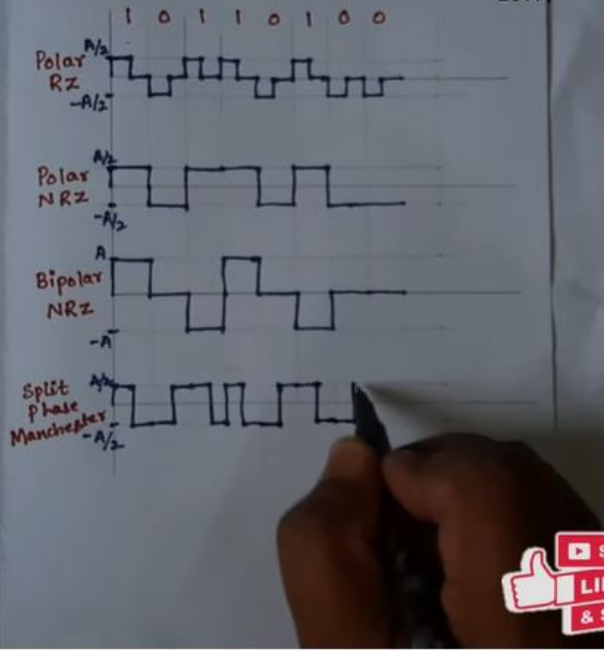
Split phase Manchester:

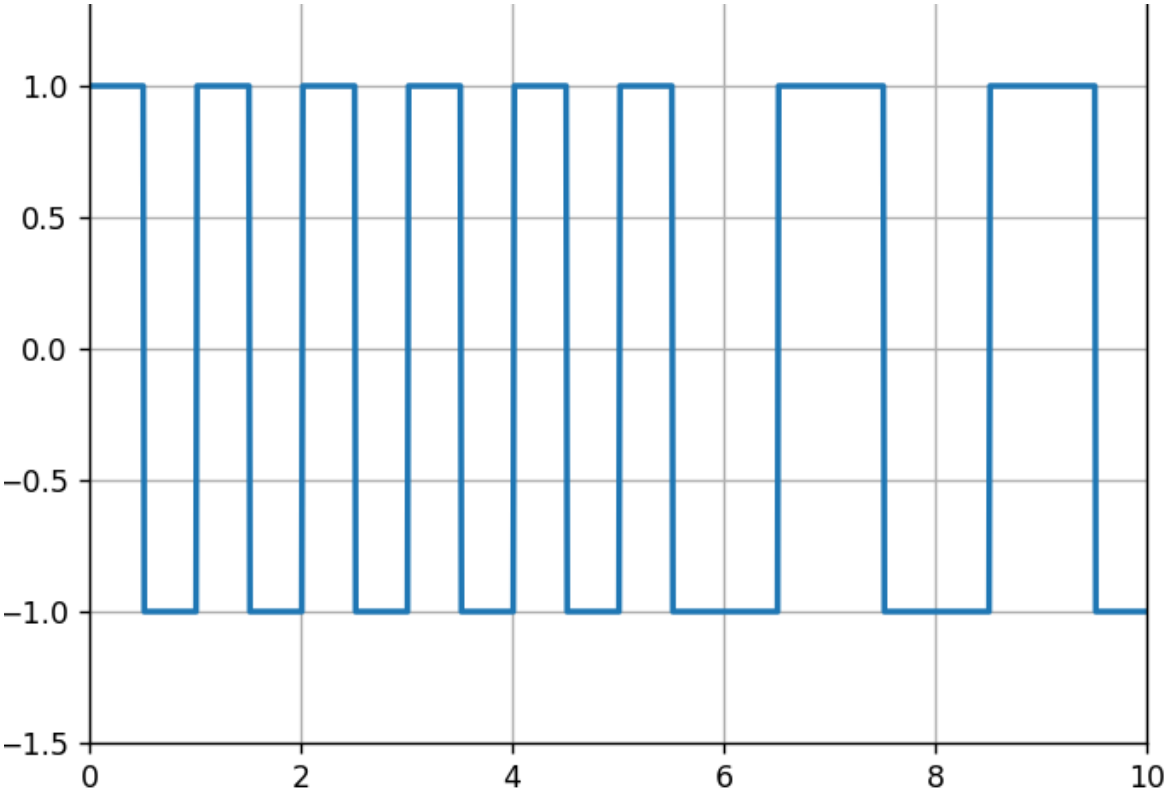
Symbol 1 → $+\frac{A}{2}$; $T_b/2$

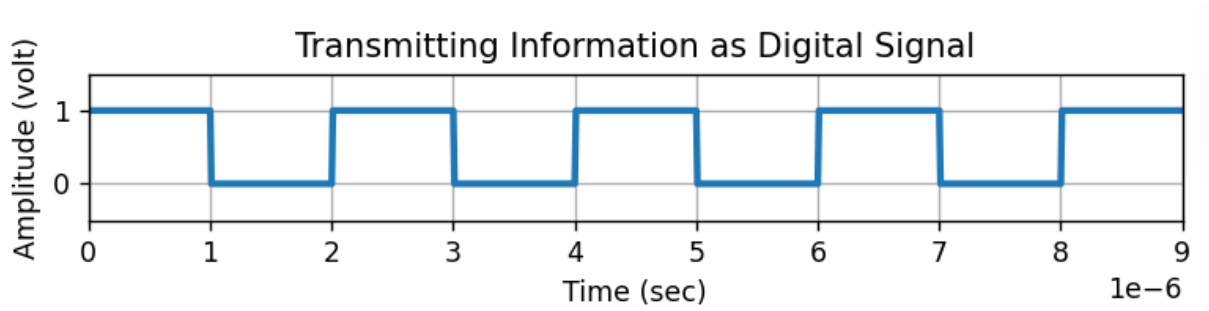
$-\frac{A}{2}$; $T_b/2$

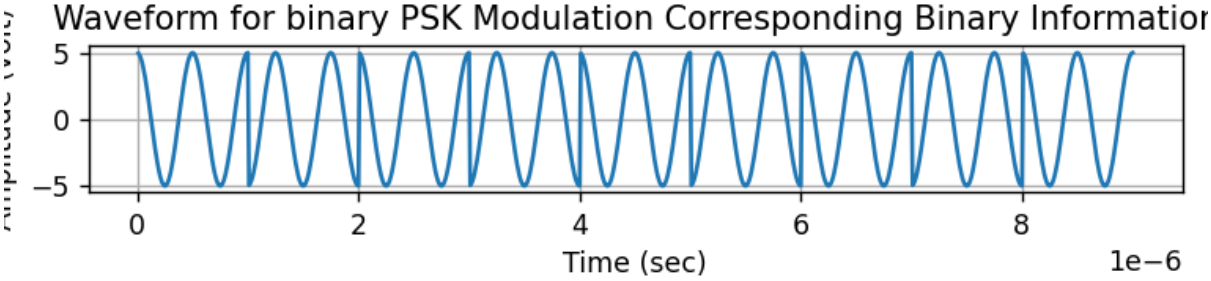
Symbol 0 → $-\frac{A}{2}$; $T_b/2$

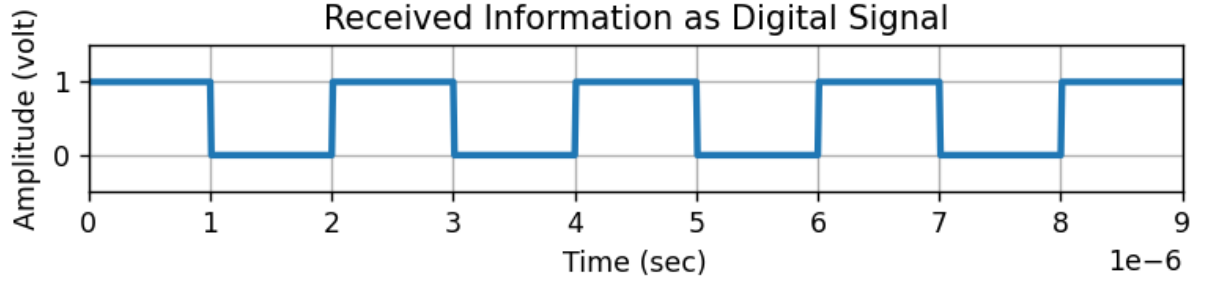
$\frac{A}{2}$; $T_b/2$




1.0
0.5
0.0
−0.5
−1.0
−1.5
0
2
4
6
8
10


Transmitting Information as Digital Signal
Amplitude (volt)
1
0
0
1
2
3
4
5
6
7
8
9
Time (sec)
1e−6


Waveform for binary PSK Modulation Corresponding Binary Information
5
0
−5
0
2
4
6
8
Time (sec)
1e−6


Received Information as Digital Signal
Amplitude (volt)
1
0
0
1
2
3
4
5
6
7
8
9
Time (sec)
1e−6