

bipolar-return-to-zero-signaling

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```
[16]: import numpy as np
import matplotlib.pyplot as plt
```

```
[17]: N = 10
n = np.random.randint(0, 2, N)
n
```

```
[17]: array([0, 0, 0, 0, 1, 0, 0, 1, 1, 1])
```

```
[18]: t = np.arange(0, N, 0.01)
```

```
[28]: nn = [0 if bit==0 else 1 for bit in n]
nn = np.repeat(n, int(len(t)/N))
for i in range(len(nn)):
    if(nn[i] == 0):
        nn[i] = -1
#nn
```

```
[27]: y = np.zeros(len(t))
len(y)
#y
```

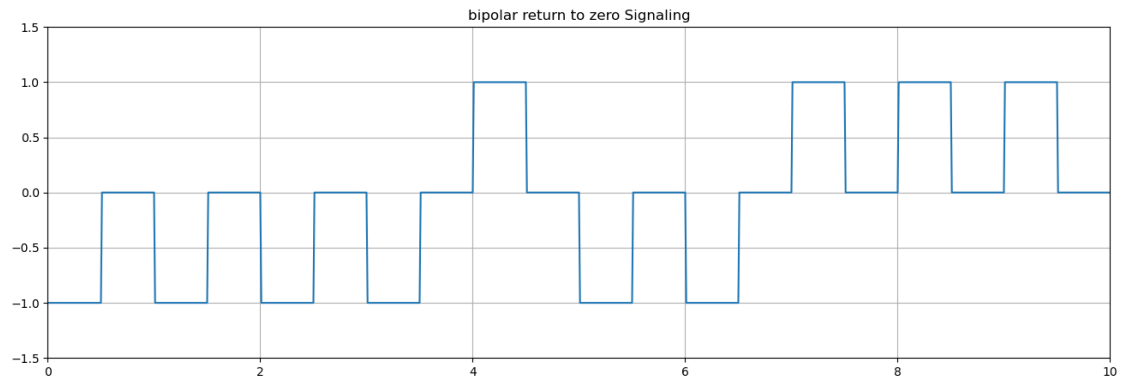
```
[27]: 1000
```

```
[23]: i = 1
a = 0
b = 0.5
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```
[24]: for j in range(len(t)):
    if t[j] >= a and t[j] <= b:
        y[j] = nn[j]
    elif t[j] > b and t[j] < i:
        y[j] = 0
    else:
        i = i + 1
        a = a + 1
        b = b + 1
```

```
[25]: plt.figure(figsize=(16, 5))
plt.plot(t, y)
plt.axis([0, N, -1.5, 1.5]) # Axis set-up
plt.grid(True)
plt.title('bipolar return to zero Signaling')
```

```
[25]: Text(0.5, 1.0, 'bipolar return to zero Signaling')
```



```
[26]: n
```

```
[26]: array([0, 0, 0, 0, 1, 0, 0, 1, 1, 1])
```

```
[ ]:
```