

Modulador e demodulador BPSK

Circuitos de Rádio Frequênciа - 22 de Julho de 2025

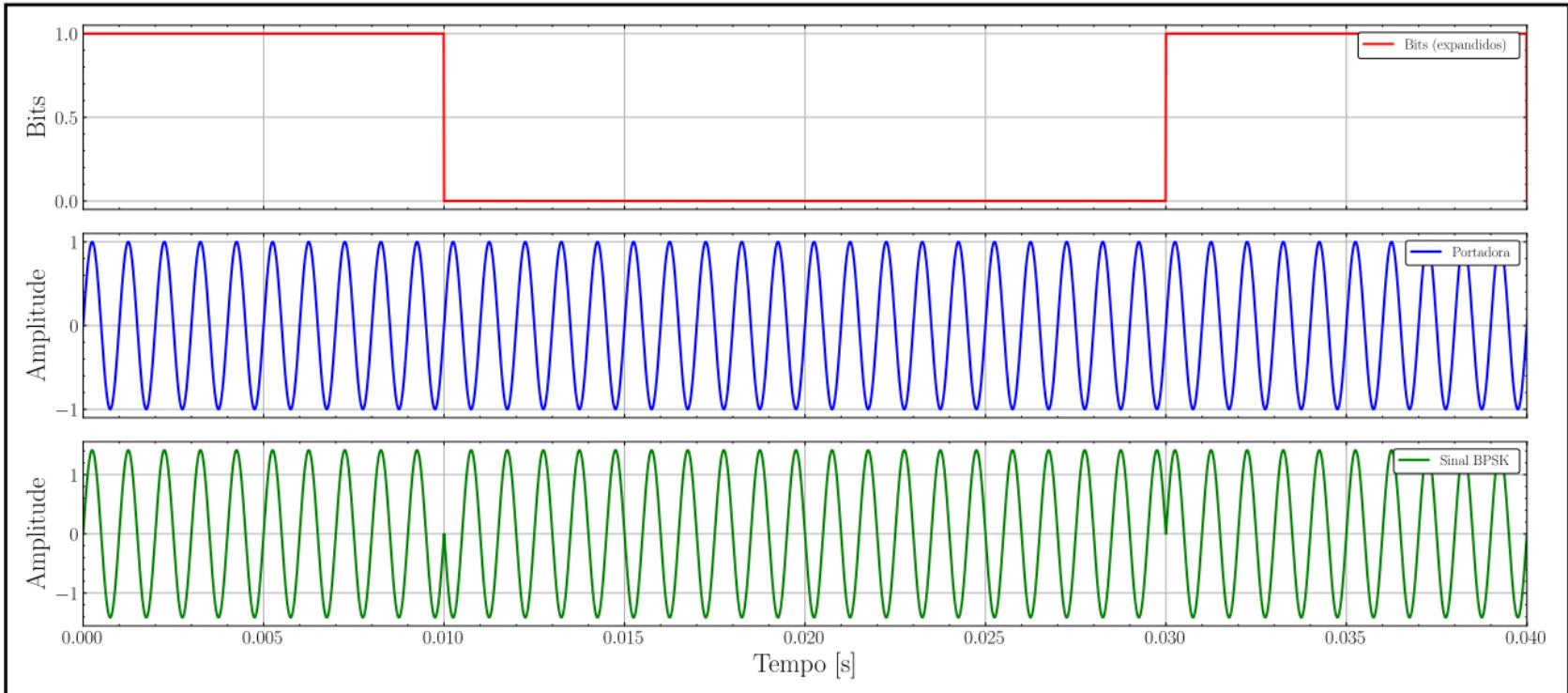
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Sumário

Sinal BPSK	3
Modulador	8
Demodulador	16
Cadeia de modulação e demodulação	24
Conclusão	27

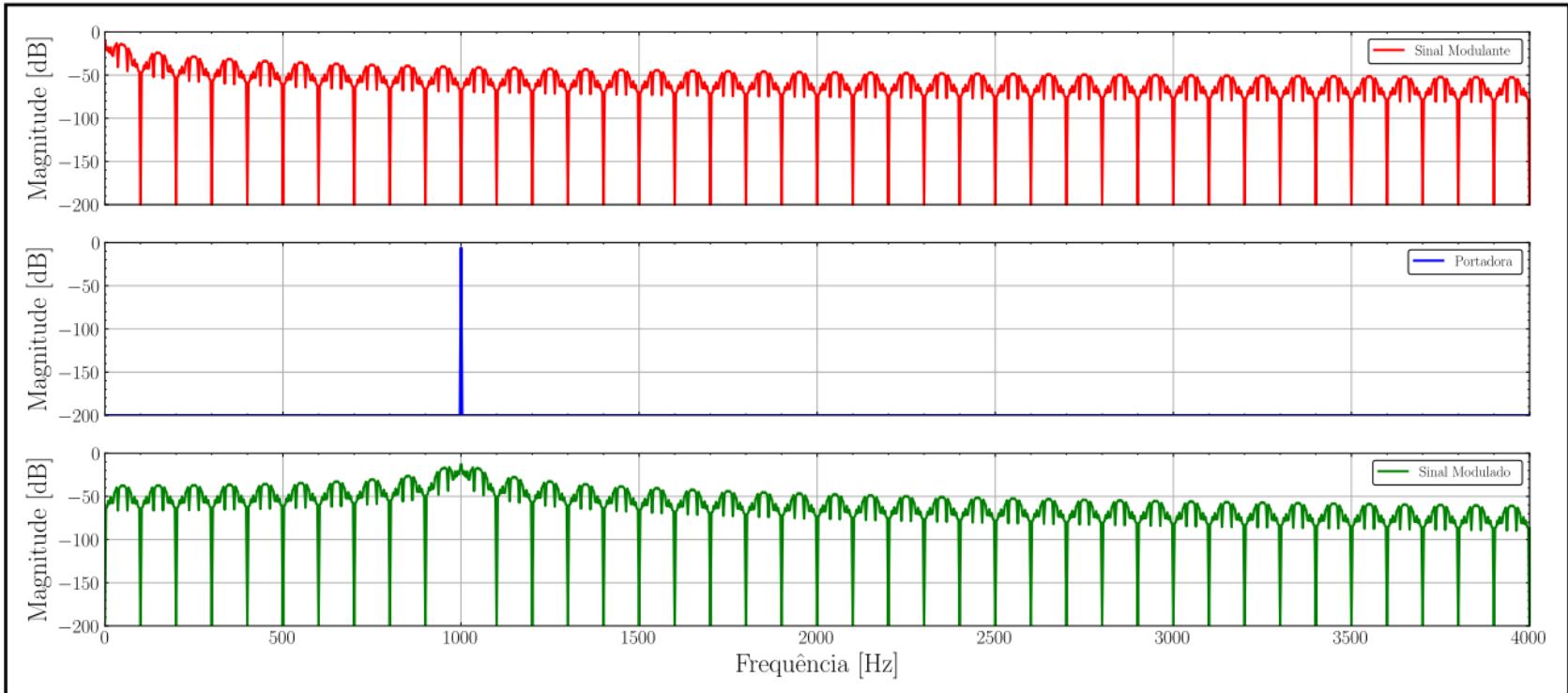
Sinal BPSK

Formato do sinal



Modulador

FFT do sinal

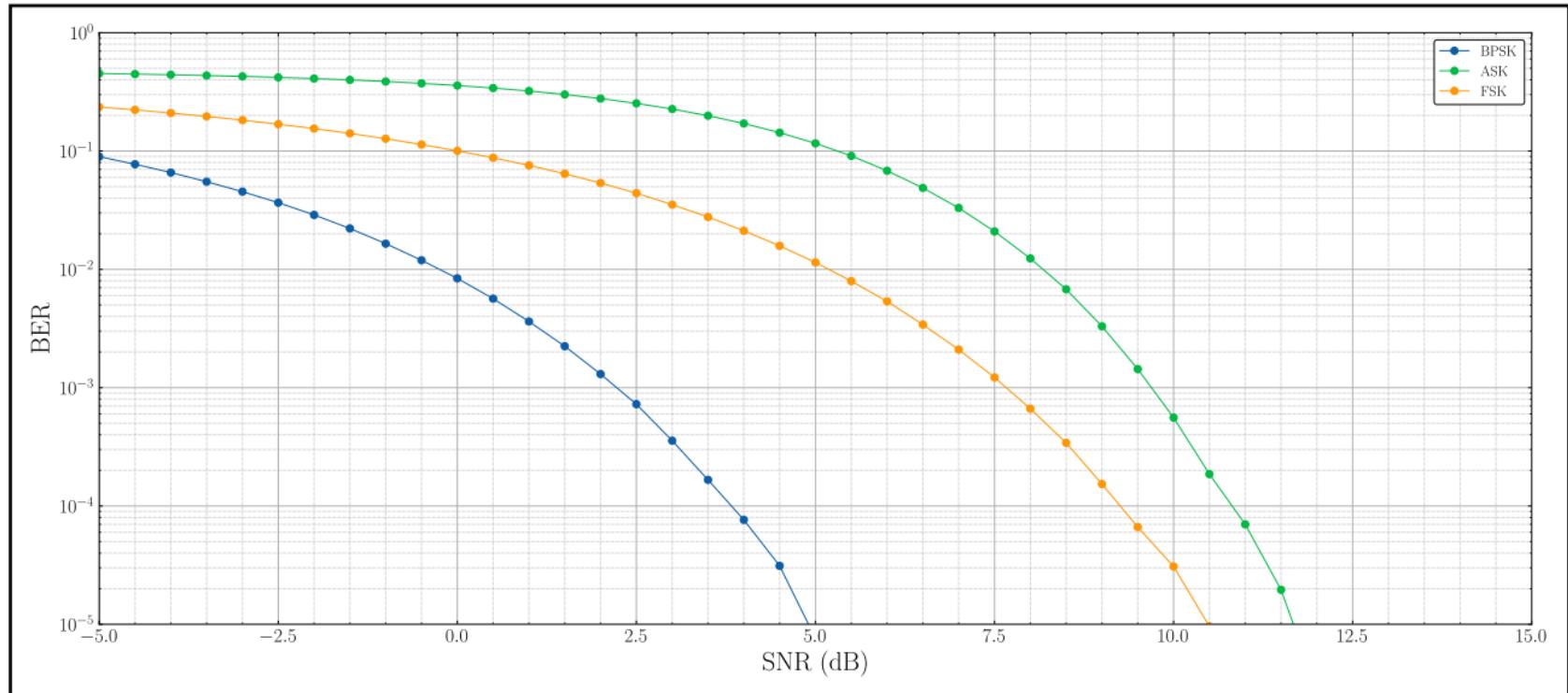


FFT do sinal

Aplicações

- Simulação do sinal BPSK
- Simulação do demodulador
- Simulação da curva BER vs SNR

Curva BER vs SNR

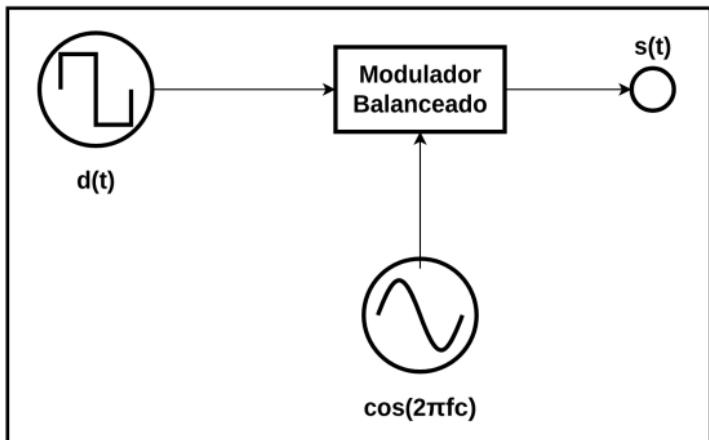


Curva BER vs SNR

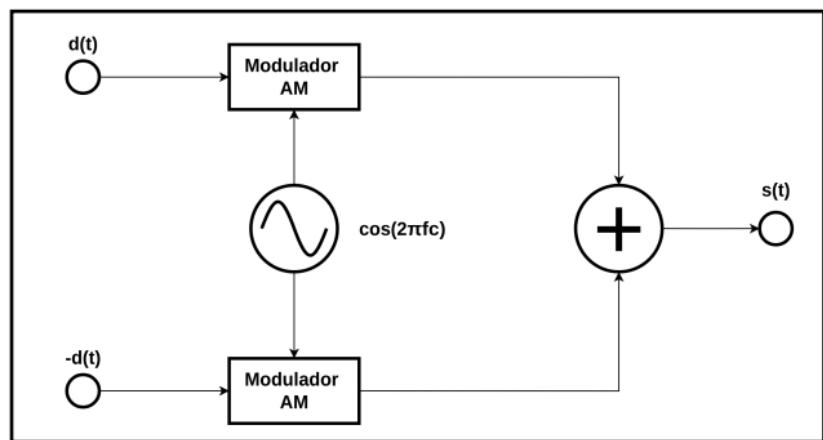
Modulador

Diagrama de blocos modulador

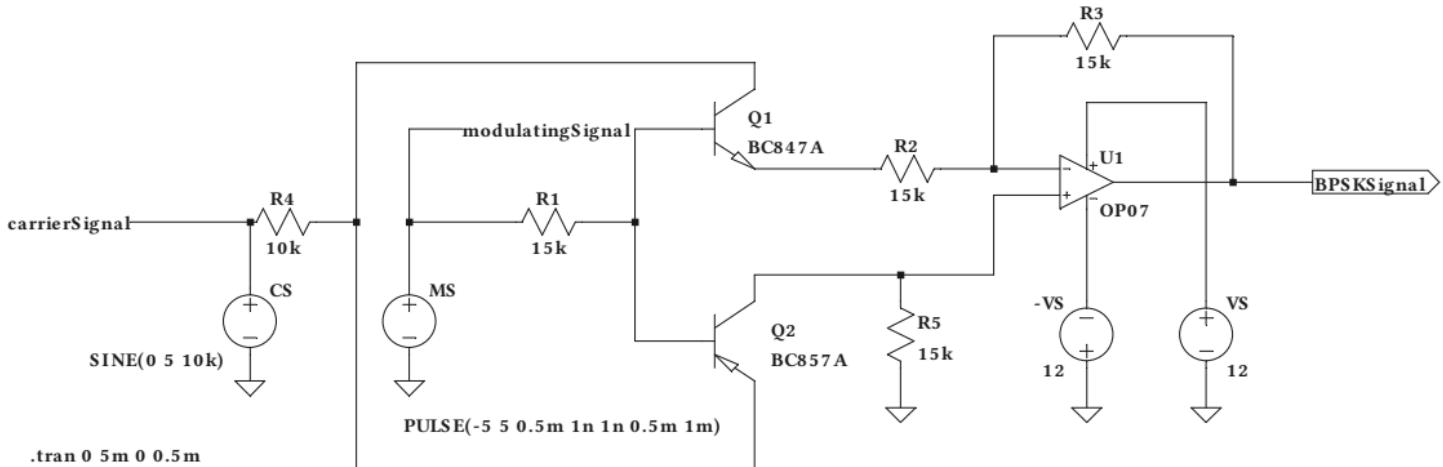
Modulador BPSK



Modulador Balanceado

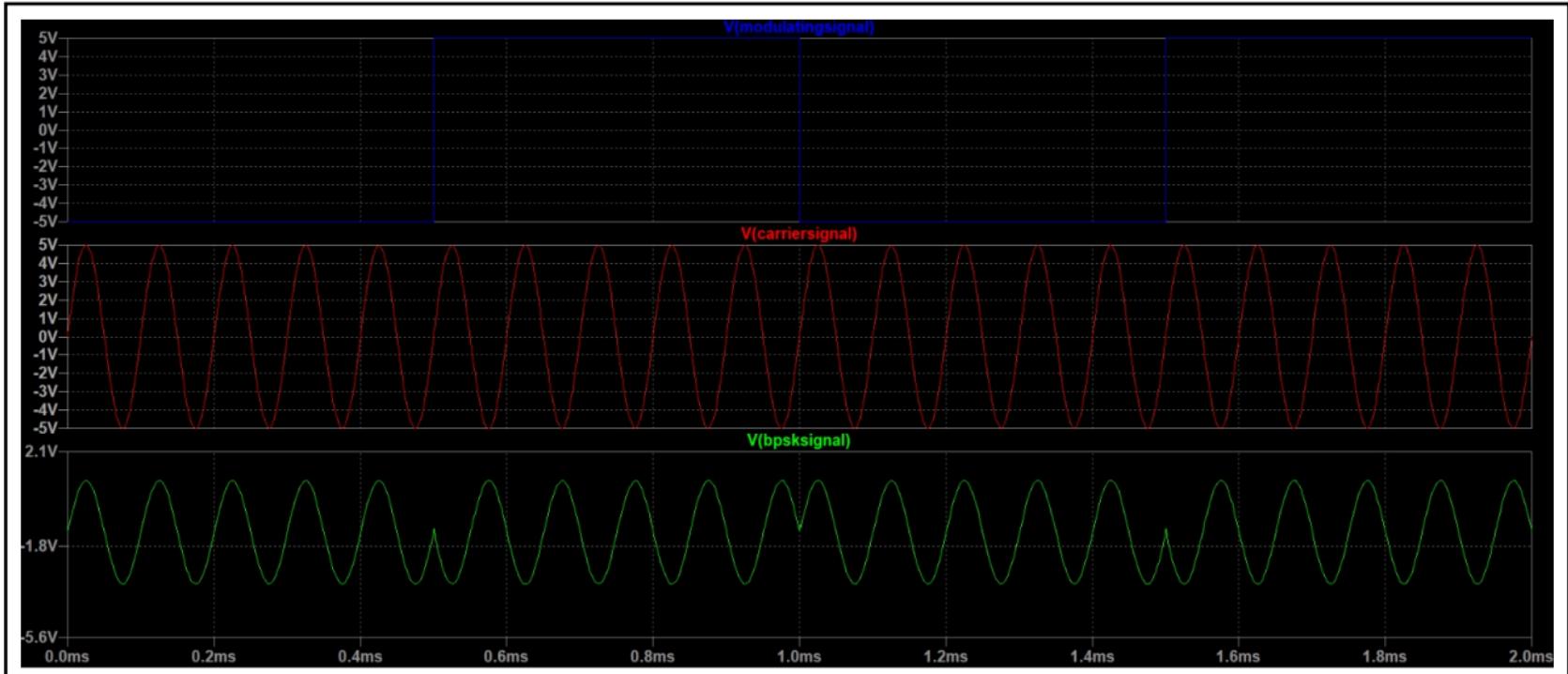


Esquemático do modulador



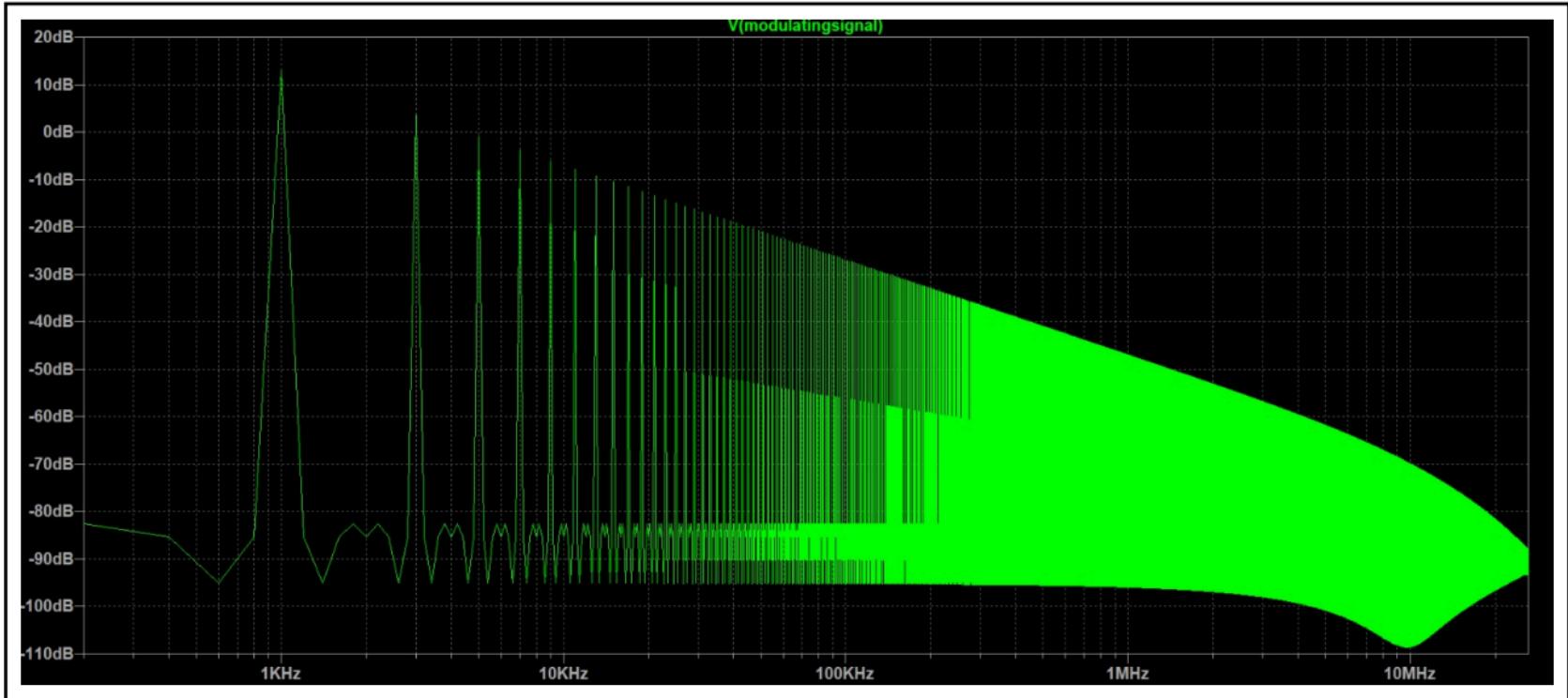
Circuito Modulador

Simulação do modulador



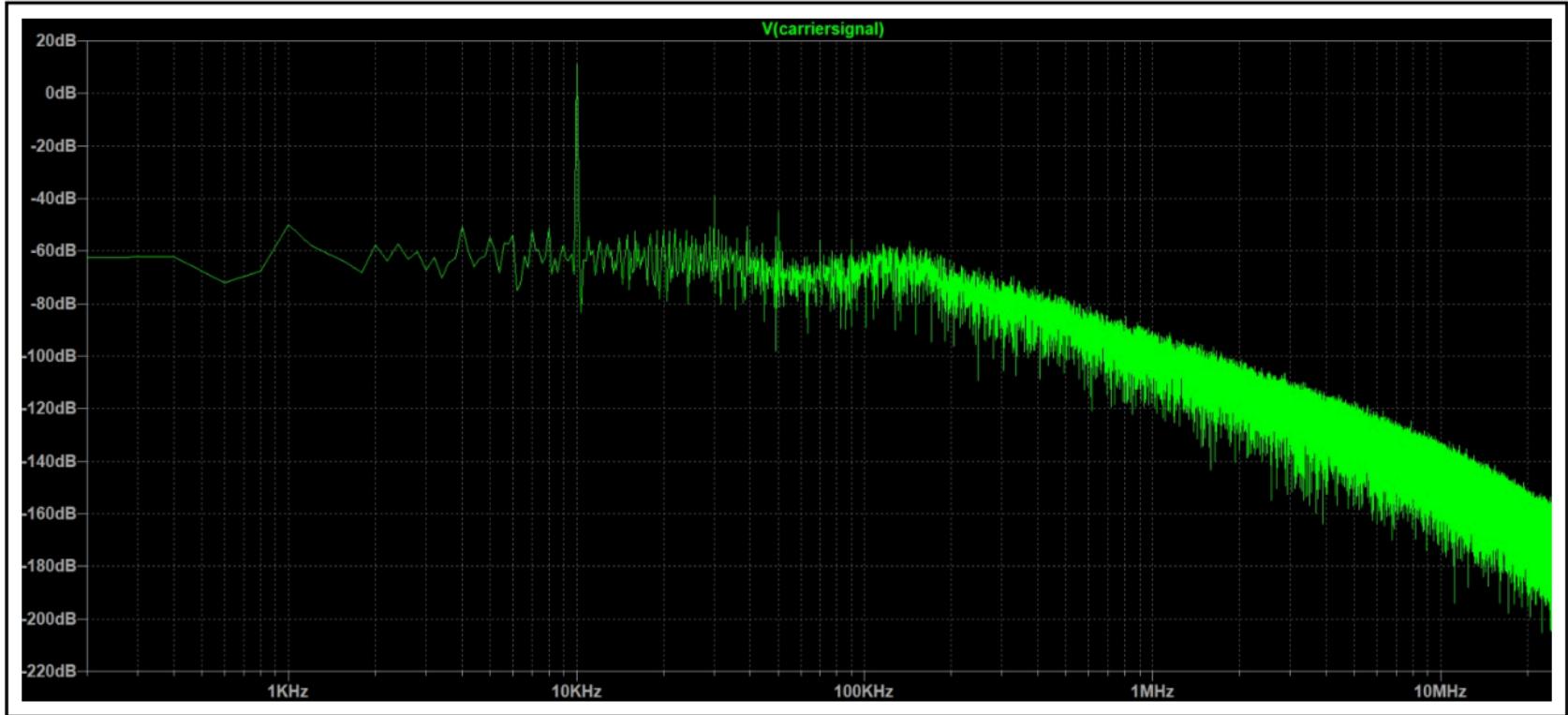
Sinal Modulado no tempo

FFT Modulante



FFT modulante

FFT Portadora



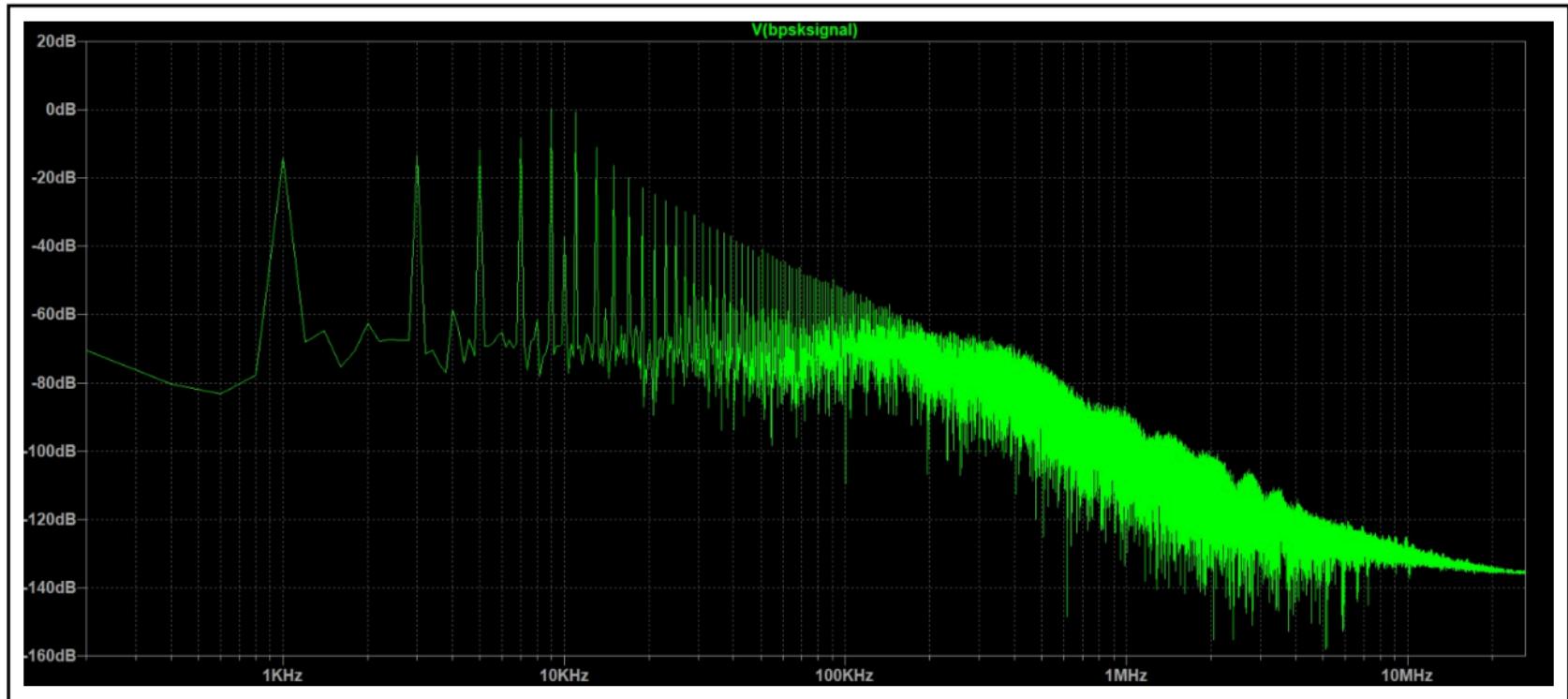
FFT portadora

Sinal modulado



Sinal modulado

FFT Sinal Modulado



FFT sinal modulado

Demodulador

Diagrama de blocos do demodulador

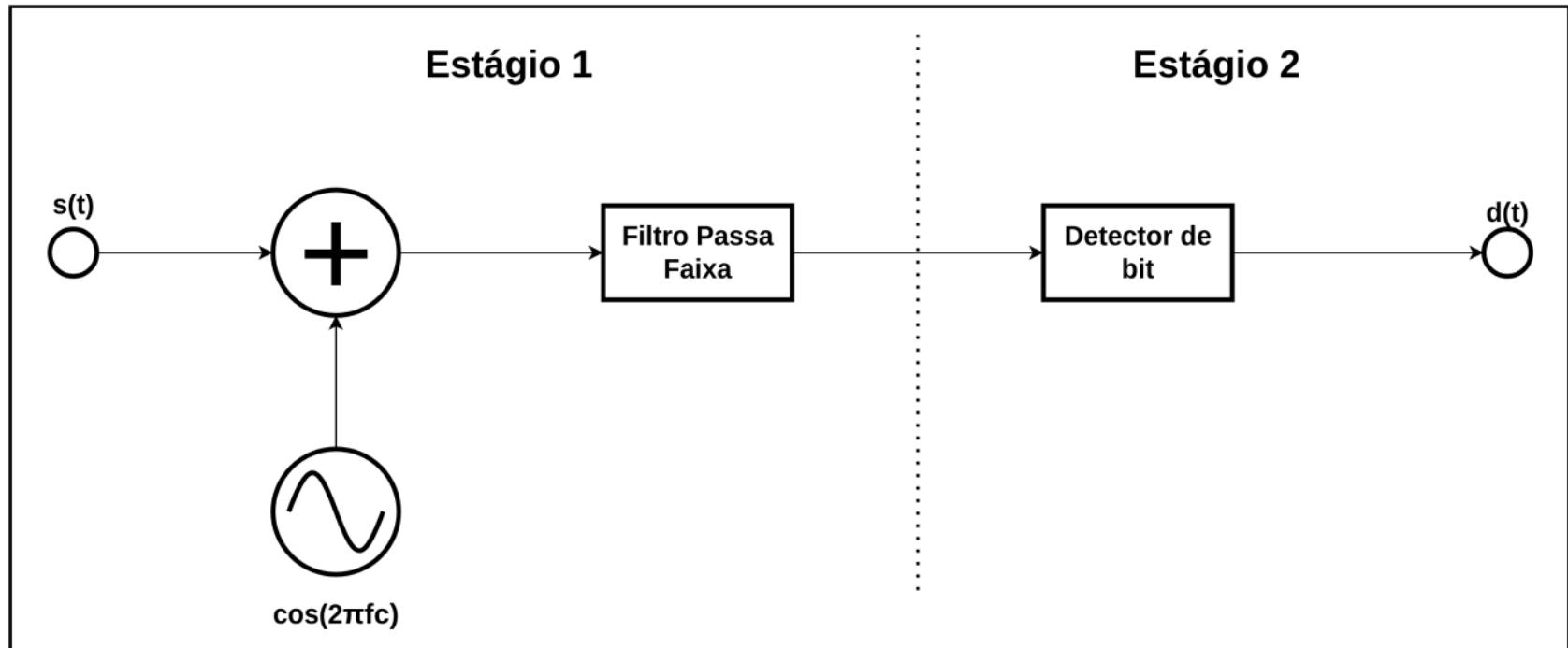
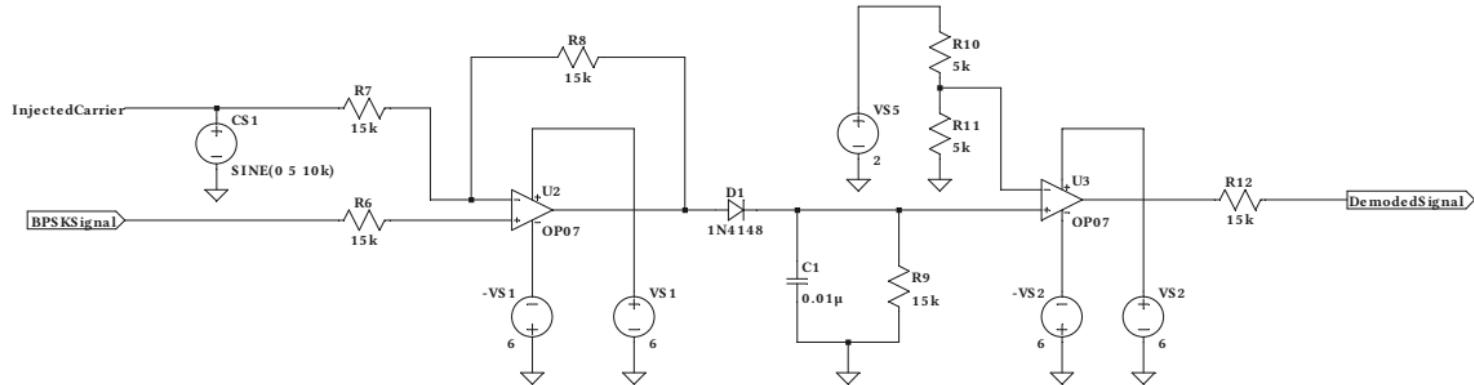


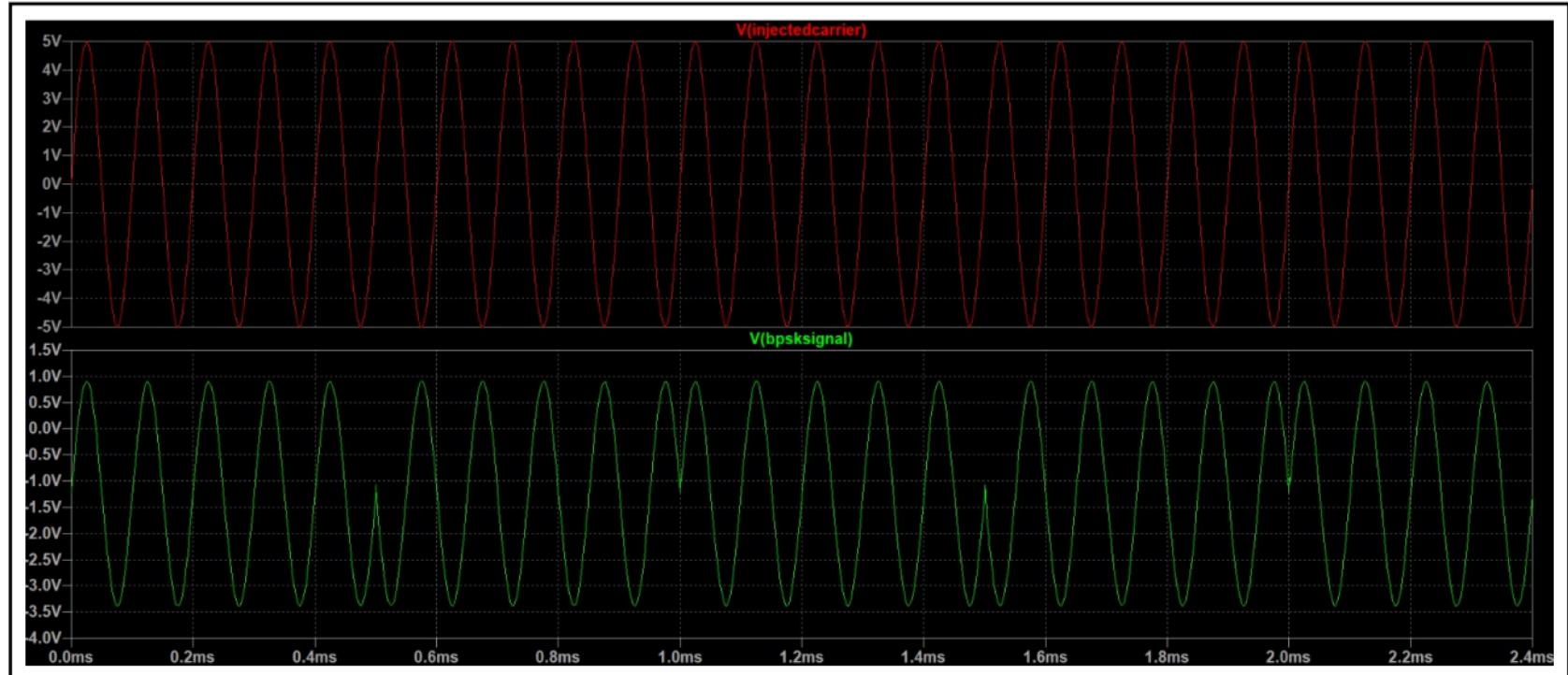
Diagrama de blocos do demodulador

Esquemático do demodulador



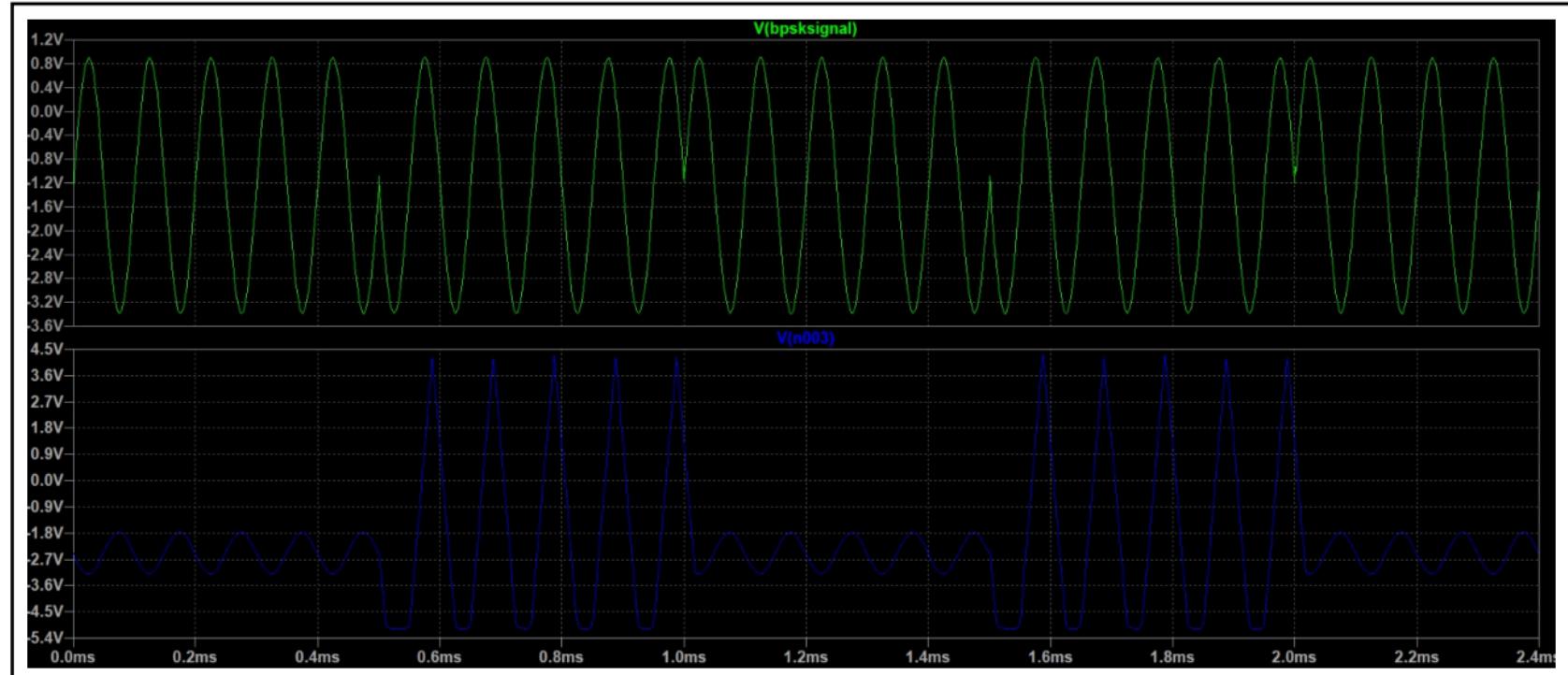
Circuito Demodulador

Sinal Recebido



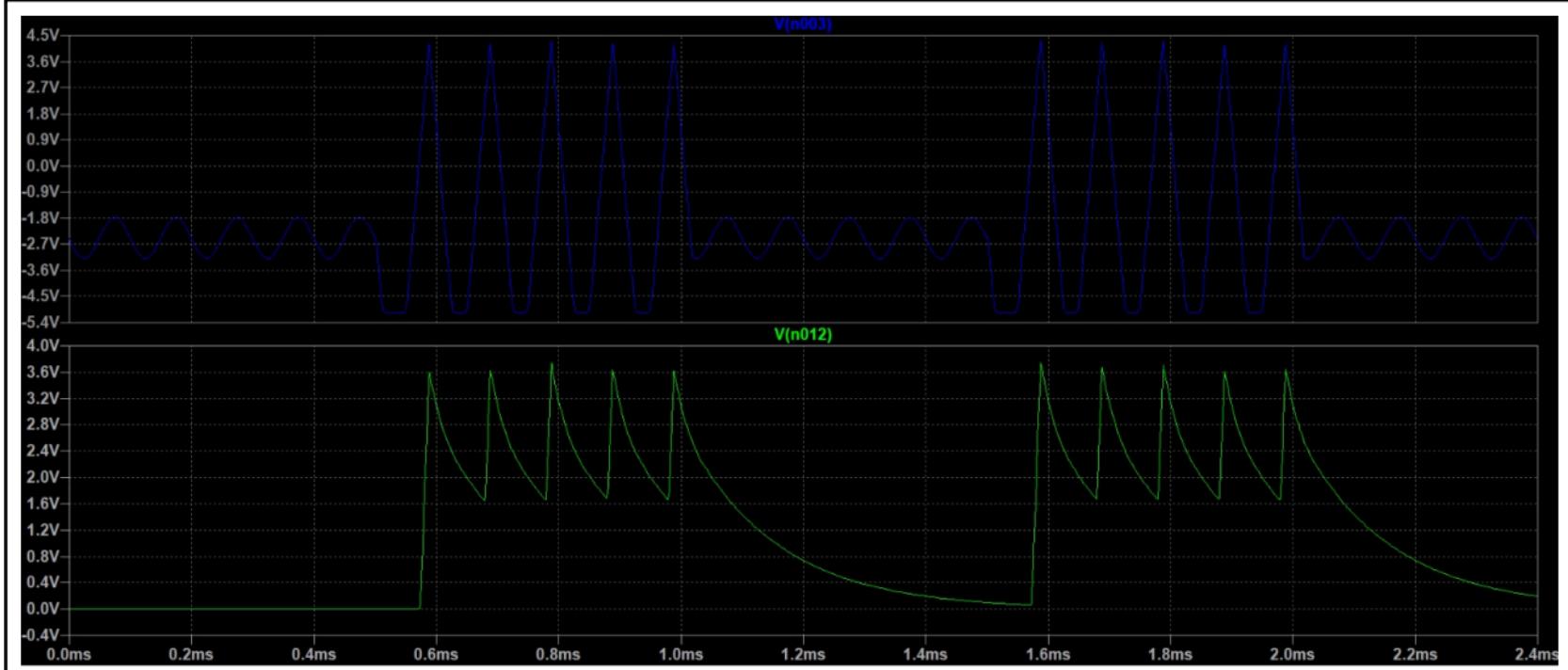
Sinal recebido e portadora no tempo

Etapa 1 - Soma com portadora



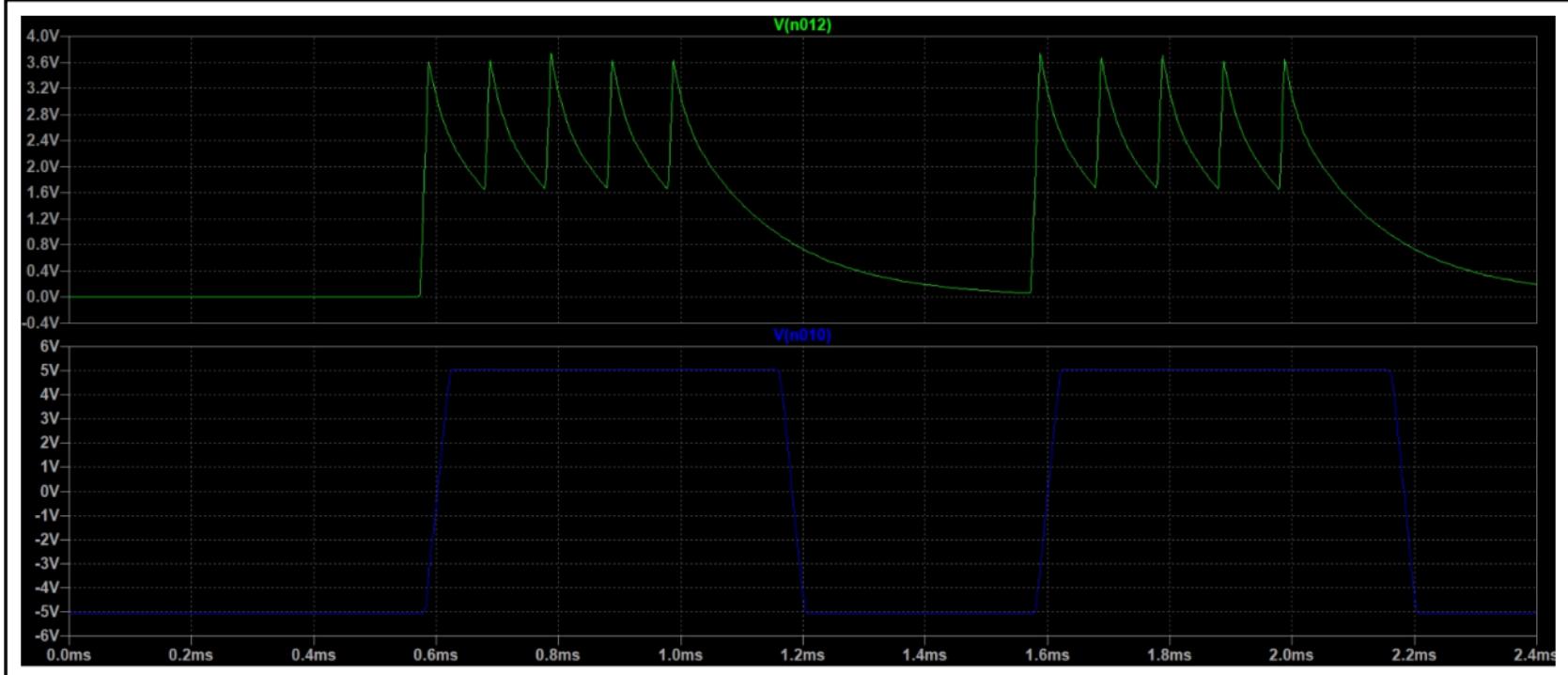
Sinal somado com portadora

Etapa 1 - Filtragem



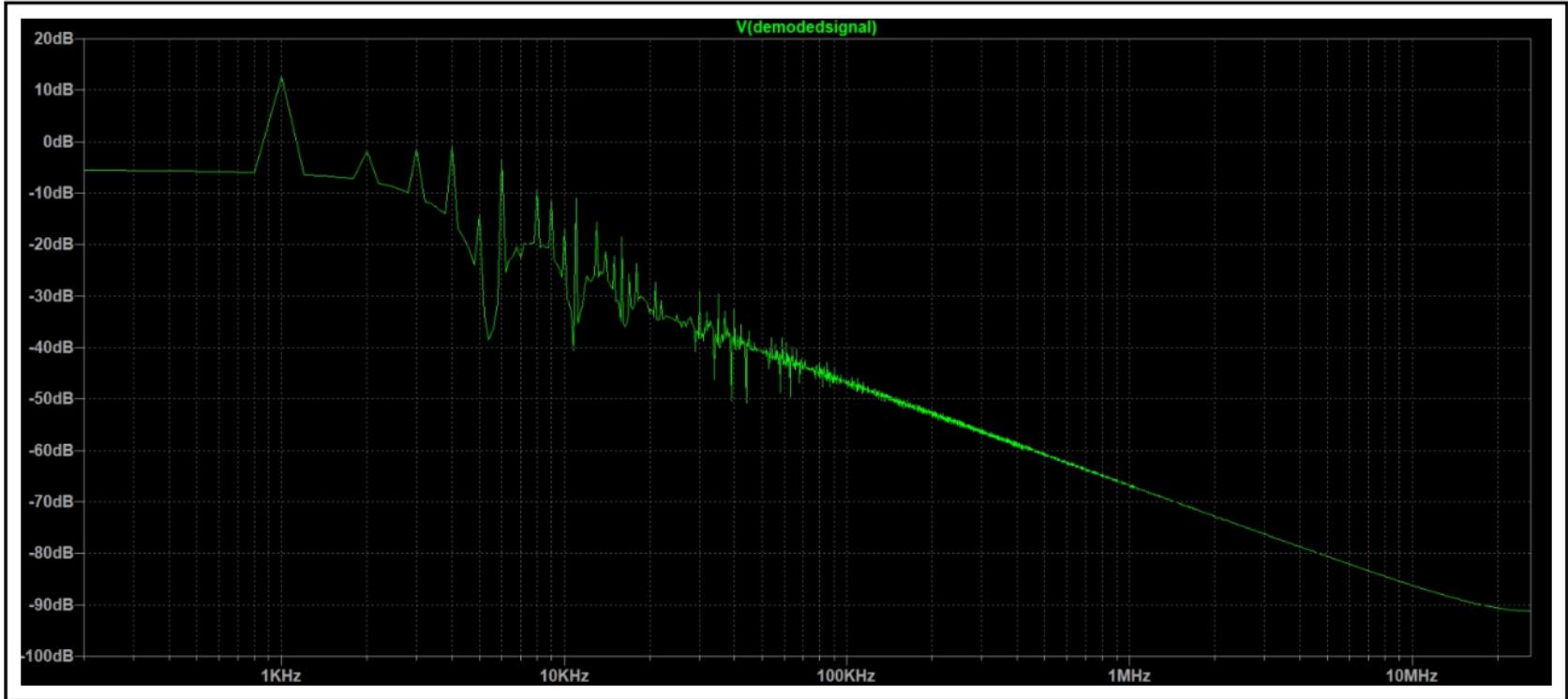
Sinal somado com portadora

Etapa 2 - Detecção de bit



Sinal detectado

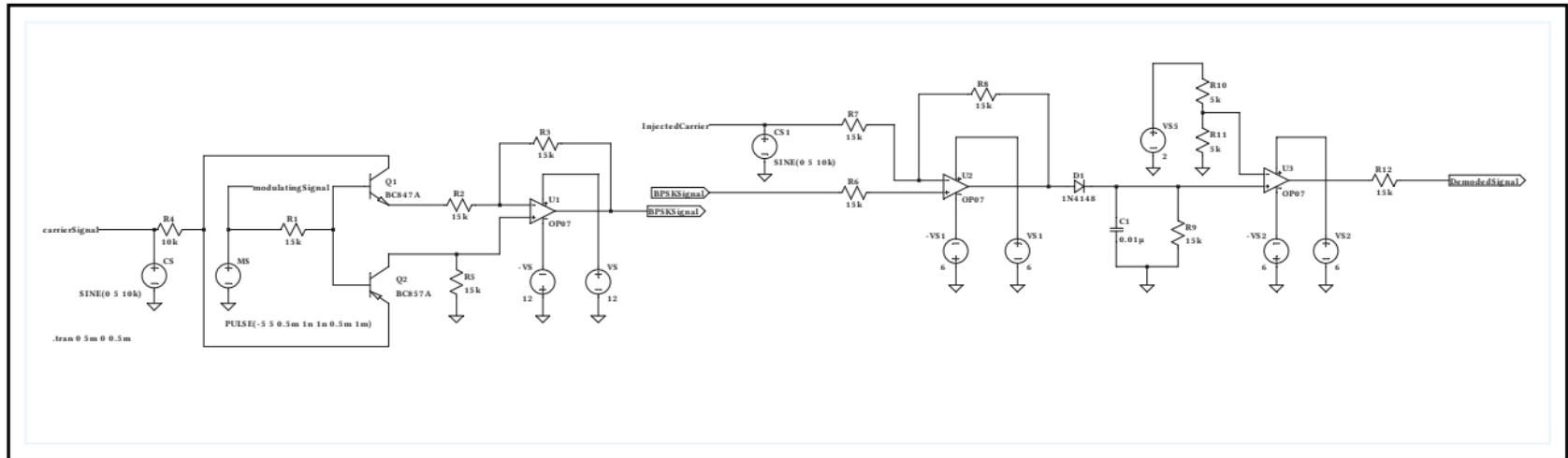
FFT Sinal Demodulado



FFT sinal demodulado

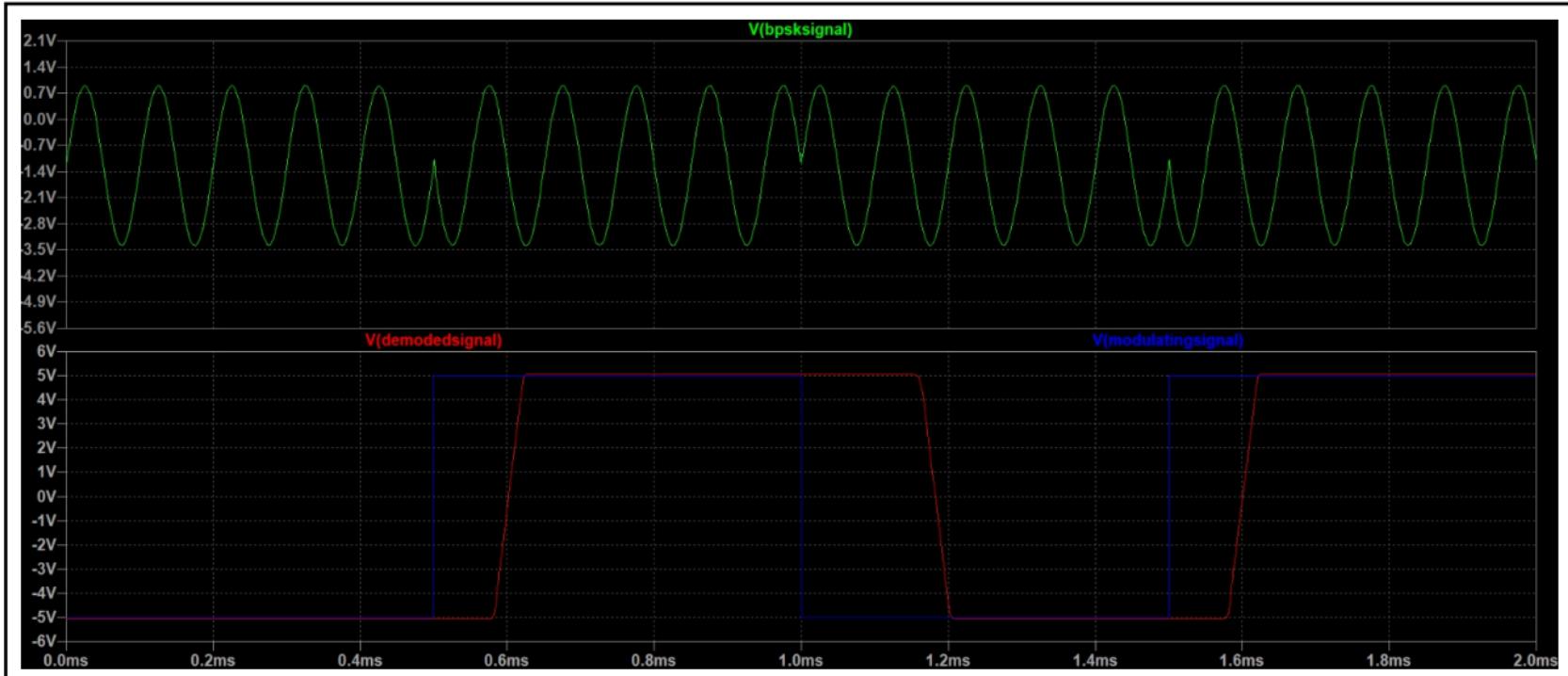
Cadeia de modulação e demodulação

Esquemático da cadeia



Modulador e Demodulador

Sinal modulado vs sinal demodulado



Comparação sinal modulante e sinal demodulado

Conclusão

Conclusão

- colocar conclusão aqui